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Using Archaeological Methods in Cemetery Surveys with Emphasis on the Application of Lidar

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USING ARCHAEOLOGICAL METHODS IN CEMETERY SURVEYS WITH EMPHASIS ON THE APPLICATION OF LIDAR

by

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(Under the Direction of Sue M. Moore)

ABSTRACT

Cemeteries are important components of history. Surveying cemeteries is a good way to not only keep track of the information that cemeteries contain, but it also can provide a professional, systematic and standardized way of recording information and presenting it to the public. The preservation of cemeteries through recording information from the gravestones remains an important task that needs to be undertaken. Preservation, in this context, refers to having a comprehensive record of the gravestone data and maps of the gravestone locations to aid those who seek to garner information from the cemetery as well as preventing the loss of this crucial information to a disaster, all without damage to the cemetery or the gravestones. This study was conducted for the purpose of determining the most comprehensive method of gathering gravestone data and mapping cemeteries with consideration to cost effectiveness, time efficiency, data accuracy and quantity of data. For the purpose of this study three specific types of technology were used to gather gravestone data and map each cemetery. These technologies included a handheld Global Positioning System (GPS), a total station, and Light Detection and Ranging (LiDAR) technology. In order to determine the effectiveness of using LiDAR, surveys were conducted in two cemeteries in the Southeastern United States – Ebenezer Lutheran Cemetery in Ebenezer, Georgia which has an earliest recorded burial of 1813 and a cemetery located on Mont Repose plantation in Coosawhatchie, South Carolina which has an earliest recorded burial of 1885. As a result, for the purposes of this study, the LiDAR scan was not the most effective as far as cost, time and quantity of data. It is a good additional resource to use in a cemetery survey, and a comparative analysis of information obtained by all the survey methods supports this result. In conclusion, while LiDAR is a new and effective tool in the archaeologist's toolbox. Like any technology it has constraints. While it may prove to be useful, it should be used in conjunction with other methods to produce the best results.

INDEX WORDS: Cemetery, Preservation, Survey, Mapping, LiDAR, Total Station, GPS, Ebenezer Lutheran Cemetery, Ebenezer, Georgia, Mont Repose Cemetery, Coosawhatchie, South Carolina

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by

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DEDICATION

This thesis is dedicated to my parents, who have gone above and beyond with their love, support, and encouragement.

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CHAPTER 1
INTRODUCTION

This chapter presents an overview for this study, the purpose and objectives of the work, equipment terms and variables or limitations and, significance of the study.

Rationale for the Study

The connection between cemeteries and anthropology is significant. Cemeteries are important components in the story of the past. They can be found virtually everywhere, on the sides of roads, forgotten in the woods, in areas where they can easily be tended to, next to churches or even as city, state, and national attractions.

Cemeteries hold both a functional and emotional role in society. Despite the fact that people interact with and react to cemeteries differently, cemeteries act as a place of solace and remembrance to most everyone by allowing them to connect to the past. The changing attitudes of Americans toward death, as well as the changing cemetery landscape both provide an important connection to the changing culture of the time. Recording and surveying cemetery data is a good method to protect and preserve information that cemeteries contain, and it also can provide a professional, systematic, and standardized way of recording information, and presenting that information to the public.

The information found within cemeteries can aid anthropologists in their studies because gravestones are primary documentary resources. They give birth and death dates, which are usually correct, about a given person and they can provide information about who these people were through epigraphs, if they were a mother, father, son, or daughter, for example. Depending on the cemetery, the graves may be arranged in family

groupings, which can indicate a relation between people and confirm genealogy. Cemeteries serve as "a mirror of the living" (Francaviglia, 1971, p 509) to reflect cultural ideas. The style of monument, the decoration on the grave, as well as the type of cemetery can all lead to an interpretation of when a cemetery was established, or when a person was buried.

The general public uses cemeteries to trace family lineages, confirm existing genealogical records, and discover ancestors, as well as develop a connection to their past. This information is becoming more accessible through online sources, like the iPad application called “Billion Graves”, or websites like “Find a Grave” or the United States Cemetery Project. Still, many people who do genealogical research use cemeteries to double check dates and compare family members, who are often, but not always, buried in a surrounding area. This is especially true of small family plots that are at more risk of being destroyed or lost in time. The risk of destruction and loss leads to a desire to preserve cemeteries and their data.

The preservation of cemeteries through the recording of information and location of gravestones in order to maintain the memory and remains of the people buried in cemeteries is an important task that needs to be undertaken before the cemeteries are destroyed or the bodies are moved. Both in the United States and overseas, cemetery destruction is a common occurrence. In New Brunswick, New Jersey, in 2008, four teenage boys were arrested for knocking over approximately five hundred headstones, some weighing more than one ton, in a Jewish cemetery (Associated Press, 2008). In 2011, New York Sanitation workers dumped snow next to a Jewish cemetery in Brooklyn resulting in broken fences and crushed headstones when the snow pile collapsed (Walker

& Sanderson, 2011). Also in 2011, a tornado that went through Raleigh, North Carolina uprooted trees and destroyed gravestones in three of the city's cemeteries (Kellner, 2011). Cemetery desecration and destruction is not something that only occurs in the United States. In North Kent, England, a Jewish burial plot had twenty-one gravestones deliberately turned over, occurring two months after the seemingly unrelated destruction of Plashet Cemetery in London where "almost 600 gravestones were toppled, vandalized or broken" (Casciani, 2003). In Libya, video footage was released which showed thirty armed soldiers desecrating a British World War II cemetery, located in the city of Benghazi, by using sledgehammers to destroy over two hundred gravestones (Jones & Stephen, 2012). Finally, an Armenian cemetery in Djulfa, located in Nakhichevan, Azerbaijani, and is bordered by Iran, Armenia and Turkey, that once contained 10,000 graves is one of the most important tales of deliberate destruction. Beginning in 1998, an Armenian group documenting "architectural monuments located outside the borders of the modern republic of Armenia" claimed that Nakhichevan's Azeri authorities had intentionally destroyed eight hundred gravestones (Pickman, 2006). What remained of the cemetery after seven years of vandalism was completely destroyed in December 2005 by soldiers who broke the "grave markers with sledgehammers, loaded the broken stones onto trucks, and dumped them into the waters of the Araxes," with each action being captured on camera and video (Pickman, 2006). Each of these events has created a loss of history.

Surveying cemeteries is also important because as gravestones get older, the writing begins to wear away, the stones break or they are destroyed and the information

can be lost. By recording this information, even if a cemetery is destroyed or worn away, it is not lost to history.

Statement of Purpose

This study was conducted for the purpose of determining the most comprehensive method of gathering gravestone data and mapping cemeteries with consideration to cost effectiveness, time efficiency, data accuracy and quantity of data.

The specific objectives of this study were addressed in the form of the following research questions:

1. What is the best method of surveying different styles of cemeteries that is both time and cost efficient, while collecting the maximum amount of accurate data?
2. What is the best method for gathering data that is applicable to both small cemeteries, like family cemeteries, and large cemeteries, like municipal and church cemeteries?
3. Can one technology, such as LiDAR, effectively streamline the process, from gathering all headstone data to mapping the cemetery?

Equipment and Software

For the purpose of this study three specific types of technology were used to gather gravestone data and map each cemetery. These technologies included a handheld Global Positioning System (GPS), a total station, and Light Detection and Ranging (LiDAR) technology. The handheld GPS is a "navigational system using satellite signals to fix the location of a radio receiver on or above the earth's surface" (Merriam-Webster, 2012). The total station is "an electronic theodolite (transit) integrated with an electronic distance meter to read distances from the instrument to a particular point" (Topcon,

2011). LiDAR is an optical remote sensing and scanning technology that creates a three dimensional (3D) image "by sending and collecting laser pulses from surface objects to build a point file" (New Orleans Levee System, 2006, p A-1).

Some of the limitations recognized in this study pertain primarily to the use of the various types of equipment: (1) The accuracy of positional reading is dependent on the number of satellites available when using a handheld GPS; (2) When using a total station the line of sight from station to target must be clear with no visual impediments such as bushes, trees or structures; (3) Data collection is based on the access to and availability of specific equipment and applicable training of personnel in use of such equipment; (4) Quality of data gathered is based on the upkeep of the cemetery grounds and gravestones; and (5) Lack of standardized guidelines to provide consistency in performing technology scans and survey methodology.

Significance

This study is significant because it contributes to the database for record keeping of cemeteries as a method of preserving and protecting individual pasts and heritages. Currently, minimal published research has focused on different types of technology used in recording gravestone data and plotting gravestone sites within an individual cemetery to produce a useable and functional map. This lack of research emphasizes the absence of standardization that exists in the surveying and mapping of cemeteries. There is, as of yet, no established method for surveying and mapping gravestones that spans across the different fields and professions which encounter the need for this information. For instance, to ensure consistency and accuracy it is undetermined from which location, or locations, on the grave to take coordinates for producing a cemetery map. Usually, a map

is made to record cemeteries that are being excavated or repaired, more as a step in the procedure rather than the final goal. Mapping is also done with the purpose of obtaining information or casually with enjoyment as the primary objectives. Cemeteries that are at a known risk for destruction are one way that mapping occurs for preservation. However, one cannot always predict when a cemetery might be destroyed or a gravestone's information might be worn away.

Cemeteries are non-renewable cultural resources, meaning that they are only useful in context. Once the data from the gravestones is worn away, the gravestones are broken and weathered, or the cemetery itself is destroyed, either intentionally or unintentionally, then all of the information that could have been gleaned from it or the additional corroborating evidence provided is lost and without a map or recording of this data, the data is lost for good. People, and their stories, matter and by having the cemetery data recorded, parts of their life history will be known and safe, and can aid in the discovery of other aspects of the life that they lived.

CHAPTER 2

REVIEW OF LITERATURE

This study was conducted for the purpose of determining the most comprehensive method of gathering gravestone data and mapping cemeteries with consideration to cost effectiveness, time efficiency, data accuracy and quantity of data. The literature review has been written in support of this purpose. The data that has been gathered as a result of this survey can be interpreted in a multitude of ways. By having the background knowledge of American attitudes toward death, and the developing cemetery landscape, further interpretation and correlation of the gravestone data and decoration can be observed. The way in which a cemetery is organized can be shown via maps, graphing methods and recorded gravestone data. Other methods of surveying and mapping cemeteries will serve to show that minimal research has been done to determine the most expedient and accurate technique.

In the review of literature for this study, both computer and manual index searches were utilized. The computerized searches included the following databases: Galileo, JSTOR, Project Muse and WorldCat. An additional online computer search was made of the University of Georgia and Georgia Southern University card catalog. Manual searches were conducted within the Georgia Southern University and Ogeechee Technical College libraries and the Ebenezer Salzburger Museum.

Evolution of Western Attitudes toward Death

Charles Jackson in his introduction to *Passing: The Vision of Death in America* states "[d]eath and dying are basic and unalterable conditions of life" (1977, p 3). Death

is something that everyone must face and no one has yet been able to avoid. Death and dying have become taboo topics that are slowly being discussed again.

Death, in itself, has stayed the same throughout history as a biological process that stops the heart. The social aspects of death, from socioeconomic status to population size to the advent of modern medicine, have helped it to evolve into something more (Jackson, 1977). Death has also continued to serve as a reflection of change within American society. Society has had continual shifting views on death which relate to the beliefs of the time period. These changes were so slow "that contemporaries did not even notice" (Aries, 1972, p 89), but looking back it is easier to see a delineation of where one idea ended and where another started.

Early Western beliefs regarding death set the stage for current American attitudes toward death. In the thirteenth century, death was viewed as an individual ritual with aspects of a public ceremony. Death was a ritual, in that once one was aware that death was imminent, they went through four stages of traditional dying (Aries, 1974). One began by "awaiting death lying down, *gisant,*" (Aries, 1972, p 8-9) which meant "his face [was] always turned toward heaven," (Aries, 1972, p 8-9). Next, the public aspect of death is introduced with the "pardoning of … companions and helpers who surrounded the deathbed" (Aries, 1974, p 12) because the bedchamber was "a public place to be entered freely" (Aries, 1974, p 12). After this, it was "time [for the dying] to forget the world and think of God," (Aries 1974, p 11) then to be absolved by the priest. A ceremonial importance surrounding the ritual of death and a stoic acceptance was the norm, much different than the emotions and ritual at funerals today.

From the fourteenth to the seventeenth centuries, death was still a normal and expected event in life. People were buried in the churchyard, but once a ditch was full, "it was covered with earth, an old one was reopened, and the bones were taken to the charnel houses" (Aries, 1974, p 22). The bones of the wealthy who were buried in the church also ended up in charnel houses, which were buildings where the bones that had been removed from the ground were stored. This is important because from the Middle Ages to at least the seventeenth century, "the exact destination of one's bone was of little concern so long as they remained near the saints, or in the church, near the altar of the Virgin or of the Holy Sacrament"(Aries, 1972, p 72). Funerals and attendance at funerals were personal events. Invitations were delivered by hand and "no one attended a funeral uninvited" (Coffin, 1976, p 69-70). Most deceased were not buried in coffins, instead "they were wrapped in shrouds made from cerecloth…or wool, soaked when possible in alum or pitch" (Coffin, 1976, p 101).

The seventeenth century was most influential in the attitudes about children and death. Children were treated as such only so long as they needed the companionship of their mother or nanny. After separation from their main caregiver they were treated as miniature adults. Often times, children would be "weaned at the start of the second year and very often witnessed the arrival of a younger brother or sister at the start of the third year" (Stannard, 1975, p 21). Families were much larger and parents acknowledged that childhood death was near inevitable with few children making it past infancy due to diseases, like malaria, yellow fever, tuberculosis, typhoid fever and dysentery were extremely prevalent and almost an expected part of life (Jackson, 1977; Coffin, 1976). Table 1 shows the infant mortality rate, including the percentage of infants that were

stillborn and died within a zero to six day period, as well as the rate of mothers that died during birth (Woods, 2005).

Year	**Infant Mortality Rate** (infant death per 1000 live births)	**0-6 Day Mortality** (percentage per 1000 live births)	**Stillborn Mortality** (percentage per 1000 live births)	**Maternal Mortality Rate** (mother death per 10,000 birth events)
1600-1624	165	75.1	88.5	128
1625-1649	153	68.5	80.0	140
1650-1674	167	76.3	87.3	170
1675-1699	185	78.3	88.3	156

Table 1: Infant Mortality Rates in England in the Seventeenth Century (Woods, 2005)

As a result of childhood death and the child's early separation from the caregiver to achieve adulthood, there was a "conscious effort of Puritan parents to separate themselves from an excessively intimate relationship with their children" (Stannard, 1975, p 21). This is taken a step further by introducing the dichotomy of separation present in the seventeenth century; that it "can be both real and imagined, can be both present and anticipated" (Stannard, 1975, p 21). Puritan parents often awaited the epitome of separation from their children – death. At this time, "[d]eath brought with it, to all but a very few, the prospect of the most hideous and excruciating fate imaginable" (Stannard, 1975, p 29). At the end of the seventeenth century, even though people were still accepting of this coexistence, the wish for separation between the living and the dead was slowly beginning the rise to the surface.

The eighteenth century was marked by an attitude toward death which appears to us today as "inert and static," (Aries, 1974, p 13) because death continued to be "both familiar and near, evoking no great fear or awe" (Aries, 1974, p 13). Funeral rituals had a simple ceremonial manner and it was after this century that children began to be kept out of the "deathbed scene" (Aries, 1974, p 12). In the second half of the eighteenth century,

respect for the remains of the dead began to be more important than spiritual care. According to Aries, "[t]he church was reproached for having done everything for the soul and nothing for the body" (1974, p 70). Also, the idea of compliance with death is a distinguishing characteristic. It was during this time that people began to visit cemeteries to be close to those who had passed.

By the close of the eighteenth century, Americans considered death something that happened to them because it was the will of God. Death and disease were so common that one accepted them as a natural facet of life. Death remained out in the open and not hidden away, as compared to contemporary times. In the words of Jackson, death could not be obscured because "[t]here was too much of it around" (1977, p 7). Another social aspect of death that played an important role was community size. Due to the small size of communities "mutual dependency and primary relationships between individuals were the norm, [and the] death of even a single individual was experienced as a community loss" (Jackson, 1977, p 8). All of these examples further serve to support Aries' conclusion that "complaisance toward the idea of death is the first great change which appeared at the end of the eighteenth century and which has become one of the characteristics of Romanticism" (1974, p 61).

Moving into the nineteenth century, death rates continued to be high, but the main change was in the expression of grief (Dumont & Foss, 1972). Aries says this is the "era of mourning which the psychologist of today calls *hysterical* mourning" (1974, p 67). Those who mourned for the deceased followed the customary rituals, but in addition, "[e]motion shook them, they cried, prayed, gesticulated" (Aries, 1974, p 59); while they adhered to accepted funeral customs, they "stripped them of their banal and customary

character" (Aries, 1974, p 59). Also during this time, specific rules regarding mourning were established. Widows were expected to mourn for two years, and the time lessened depending on the woman's relationship to the deceased (Coffin, 1976). There were strict rules regarding clothing and color choices in mourning. For example, after a year and a half, the widow would be allowed to "vary her wardrobe with garments or trim of gray, violet, or white" (Coffin, 1976, p 198). Funeral invitations were now sent through the mail on specific paper. The funeral was in the process of becoming a more formal affair.

Philippe Aries, author of *Western Attitudes toward Death*, best sums up the expression of death in the twentieth century, "today [death] has become wild" (1974, p 14). Even though the nature of death has been in flux, Dumont and Foss assert that "death continues to play an important role in American life." (1972, p 2) The process of urbanization has made "old funerary forms ineffective and encouraged the growth of the funeral industry through which relatives and friends of the deceased transferred their active role in last rites activity to the hands of the specialist" (Jackson, 1977, p 146). Also associated with urbanization are smaller households, which lead to an infrequent association with death, "in both a spatial and social sense" (Stannard, 1975, p 7). The advent of modern medicine has created many changes in the process of dying. Life expectancy is more than double what it was in the seventeenth century, infectious diseases are no longer the leading killer of Americans and infant mortality is almost a thing of the past (Jackson 1977). Mortality rates have decreased and people are sent to the hospital or nursing homes to die, instead of remaining "at home in the bosom of one's family" (Aries, 1974, p 87; Jackson, 1977; Stannard, 1975). According to Dumont and Foss, "the average American experiences death in his family only once every twenty

years" (1972, p 2). As the site of death slowly shifted to the hospital, it also evolved that the family tried to "spare [the dying] and hide from him the gravity of his condition," (Aries, 1974, p 86) in order to protect both the dying and society, because when death strikes, "the disturbance and the overly strong and unbearable emotion caused by the ugliness of dying and by the very presence of death in the midst of a happy life" (Aries, 1974, p 86-87). It was also at this time that death began to be seen as a failure. Modern medicine's goal was to preserve life and death is a direct contradiction. Modernization of medicine and "the displacement of the site of death" (Aries, 1974, 87) have led to a change in expectations and beliefs in the twentieth century. One of these changes, Dumont and Foss summarizes best: "man prides himself on his ability to control his world; while he has exhibited substantial mastery over his physical and social environments, he cannot control his own death" (1972, p 1).

Through urbanization and the transformation of treatment by modern medicine, the lack of intimacy with death and the dying process has led to both an invisibility of death and making death "a taboo and dying an alien event" (Jackson, 1977, p 146). Geoffrey Gorer has even gone so far as to suggest that death "has replaced sex as the principal forbidden subject" (Aries, 1974, p 92). What this means is that "[children] are initiated in their early years about the physiology of love; but when they no longer see their grandfather and express astonishment, they are told that he is resting in a beautiful garden among the flowers" (Aries, 1974, p 92-93). This is in direct contrast to the attitudes of the seventeenth and eighteenth centuries. Dumont and Foss also supports this claim in his argument that "parents [are] unwilling and/or unable to talk to their children about death in a manner that will not produce anxiety" (1972, p 13). He goes even further

in suggesting that “by evasion and deception, parents appear to be harming rather than helping their children in the development of their view of death” (Dumont & Foss, 1972, p 13), because instead of confronting the reality of death parents use other explanations.

History of the American Cemetery Landscape

Over the past three decades, there has been a change in the landscape of the American cemetery and the changing role it plays in American culture. From the seventeenth to the twentieth century, one of the main locations of burials was next to churches. This burial location is still used today. Burial within the churchyard was popular due to the desire of Christians to be buried close to the saints. They were not concerned with having individual space for their burial which led to “piles of sarcophagi in disorder, one on top of the other, several layers high” (Aries, 1974, p 16-17). Other burials were located in isolation on the pioneer front, near the family’s home or in a potter’s field (Sloane, 1991). A potter’s field was a place where the poor were buried and was located either in the community burial ground or in the churchyard. These four styles of burials were popular until the growing concern of overpopulation and fear of disease transmission encouraged change. Sloane specifically indicates epidemics in the eighteenth century and the inability to “secure a sacred and inviolate burial place” (Sloane, 1991, p 14-20; 24-25). In the end, these early graveyards “were treated simply as unattractive necessities to be avoided as much as possible by the living” (Sloane, 1991, p 71). These are the main reasons for the development of the new types of cemeteries in the nineteenth century.

The desire for the development of cemeteries outside of the town led to the introduction of rural cemeteries from 1831 to the 1870s, notably Mount Auburn in

Cambridge, Massachusetts (Sloane, 1991). Stanley French asserts that the "creation of Mount Auburn marked a change in prevailing attitudes about death and burial. It was a new type of burial place designed not only to be a decent place of interment, but to serve as a cultural institution as well" (Stannard, 1975, p 60). Rural cemeteries were treated more as thoughtful, but recreational areas where people could ride in carriages and see the beautiful horticulture and magnificent monuments. The rural cemetery was a place that was not only shared by the living and the dead, but was "a new sacred space for the dead and a tranquil spot, even a pleasure ground for the living" (Sloane, 1991, p 63). During this time, Americans were beginning to accept nature for its aesthetic value instead of viewing it as a wilderness that must be survived. This view of nature led to an acceptance and preference of the rural cemetery. According to Sloane, rural cemeteries became popular because "Americans were concerned about understanding the histories of their communities and nation, strengthening the family, maintaining the virtue of rural life, and encouraging respect for the dead" (1991, p 56). As time went by, though, it became apparent that the cemetery "founder's vision of community was neither egalitarian nor democratic" (Sloane, 1991, p 84-85) regarding those who were buried in the rural cemeteries, as well as those who could visit and when. Slowly, the rural cemetery became more of a "place of recreation" (Sloane, 1991, p 95) than commemoration, until finally, declined as "Americans began to retreat from their close relationship with death" (Sloane, 1991, p 95).

The lawn-park cemetery was introduced in 1855 and lasted until the 1920s (Sloane, 1991). The motivation behind establishing this style of cemetery was to combat the growing opinion that the cemetery was no longer about the dead (Sloane, 1991). The

prominent example of a lawn-park cemetery was Spring Grove in Cincinnati. English gardening and landscape techniques had an impact on the development of this cemetery (Sloane 1991, p 103). The use of this style of cemetery was a result of the aim to de-clutter the cemetery and provide "unity of art and nature" (Sloane 1991, p 103). In developing this style of cemetery, the ostentatious monuments were out and simplicity was in. The hope was that "the pastoral would replace the picturesque. The lawn would expand, and the grouped trees would be thinned. Cemeteries would become more parklike. Monuments would be more formalized and standardized" (Sloane, 1991, p 107). At this time, "[t]he new landscape reflected the distancing of the living from the dead and the formalization of the burial ritual" (Sloane, 1991, p 121). This style of cemetery, "with its less dramatic appearance, was in keeping with the withdrawal of most Americans from a close relationship with death" (Sloane 1991, p 127). Finally, instead of the family taking care of the lots, people were hired by the cemetery founders to take care of the lawns, and often the trees and shrubs were kept thin while the headstones were mostly small and uniform.

The current trend, beginning in 1917 and lasting into the present, is the memorial park. The best example of this is Forest Lawn in Glendale, California (Sloane, 1991). Sloane argues that the memorial park style of cemeteries give further evidence that Americans have become increasingly isolated from death (1991). He states: "Twentieth-century Americans did not want the close relationship with the cemetery that their nineteenth century counterparts had craved. Memorial parks represented a distancing of the grave site from the mourner" (Sloane 1991, p 190). The memorial park made it so mourners did not have to associate with the "morbid connotations" (Sloane, 1991, p 2)

brought about by the word "cemetery" (Sloane, 1991, p 2). It was also set up to be familiar and comforting to the American public and it "streamlined the process of burial by joining the functions of the funeral director, cemetery, and monument dealer within the memorial park" (Sloane, 1991, p 159). On the whole, "memorial parks reflected the suburbanization of the city" (Sloane 1991, p 182). The memorial park appears as "a suburbanlike pastoral environment" (Sloane, 1991, p 159). The landscape design of the memorial park was based on four characteristics:

> "1. Professional management was essential to control the appearance of the landscape and to insure its unity. 2. Nature acted as a passive backdrop to artistic memorials. 3. Memorials emphasized the community of the dead instead of the individual and the family. 4. Memorials were designed to evoke the values of a joyful religion and a united and patriotic community" (Sloane, 1991, p 166).

Americans could visit memorial park cemeteries and not have to focus on "symbols of death" because they were "less visible" (Sloane, 1991, p 168); instead, the "emphasis was on life in the landscape" (Sloane, 1991, p 168). In addition, one can see American attitudes toward nature reflected in the memorial park (Sloane, 1991). All aspects of nature were controlled, organized and placed exactly where the designers wanted them, if they wanted them at all.

Archaeology and Cemeteries

Cemeteries and gravestones act as primary resources. Cemeteries tell a great deal about the history of the time in which they were established, and gravestones, and gravestone art, contain data and designs which can be indicative of the time period in which they were carved. Information needs to be gathered from gravestones because they are "both a significant form of artistic creation and precious records of biographical

information, now subject to vandalism and to deterioration from the environment" (American Antiquarian Society, 2003). The change in art is associated with a change in the opinion towards death.

Most archaeology conducted within cemeteries is done in order to salvage human remains; this is so the remains can be studied to find information about the way that people lived and potentially how they died. An additional result of salvaging human remains is to bury the remains again at a later date.

Cemetery Organization

Cemetery organization is an important factor when studying cemeteries. Cemeteries can reveal more than a history of the time in which they were established, they can also "provide evidence about kinship, gender and other indicators of social status" (Pearson, 1999, p 12). Cemeteries can be segregated based on race and religion and are usually organized into family plots. In the nineteenth century, cemeteries were organized racially; African-Americans were buried in a different section than whites, Jews were buried apart from Christians and even the rich were buried apart from the poor.

To take this idea further, burial patterns can indicate the growth of a cemetery over time. Some burial patterns are linear, hierarchical/concentric and segmented (Pearson, 1999). A cemetery that is organized in a linear pattern "develops from a focal point…or physical barrier" (Pearson, 1999, p 12) and then "produc[es]…horizontal stratigraphy" (Pearson, 1999, p 12). This means that from the starting point, the graves will expand outward in straight lines, often as the cemetery grew over time, with the oldest at the starting point and the youngest located the farthest from that point.

Hierarchical or concentric patterns have a central burial as a focal point and expand outward in a circular pattern. Finally, segmented cemeteries can be arranged in multiple ways; they can be aligned side-by-side or head-to-toe. In both of these patterns graves are "divided into discrete sections or clusters and sometimes have open spaces between each group of graves" (Pearson, 1999, p 12). A simple example of this is a cemetery that is separated into family groups.

Cemetery Mapping and Surveying

There is very little available on the specific method of mapping and surveying of cemeteries. General instructions on how to undertake a mapping and surveying project are available, but geared toward the public. The Chicora Foundation, Inc. has various forms accessible online that can provide aid to a cemetery researcher, such as ones to record cemetery locations and information about individual gravestones (2008). However, the focus is more on the preservation and protection of the gravestones rather than mapping the whole cemetery. The Georgia Department of Natural Resources Historic Preservation office has two Quick Tip sheets available for download (2008a & 2008b). The "Guide to Cemetery Surveying" (Georgia Department of Natural Resources, 2008a) provides step by step instructions on the process of conducting a cemetery survey and the construction of a cemetery map in nine steps. Included in these steps are to determine the scope and purpose of the project. Ideas are offered which will make the project easier, like making sure that a previous study has not been done and to make sure that permission is obtained from the landowners before beginning a survey. Requirements are given for both county-wide and individual cemetery surveys. For a county wide cemetery survey, it is suggested that there be a large group of people, assuming that many

would be volunteers, and a consideration for updates be taken into account. An individual cemetery survey begins with a basic outline, followed by a division of the cemetery into sections with each section assigned to a group of volunteers for the recording of more specific gravestone data and location. Recommendations for mapping this style of cemetery is to create a large map with "boundaries, roadways, plots, and as much other information about its organization and physical features as possible" (Georgia Department of Natural Resources, 2008a), followed by "sketches of sections and plots as necessary showing graves in each row, showing how family plots align, and to provide additional information" (Georgia Department of Natural Resources, 2008a). The best method for recording data according to this guide is to "record the entire inscription on every stone" (Georgia Department of Natural Resources, 2008a), and "make no changes or assumptions regarding missing or misspelled text" (Georgia Department of Natural Resources, 2008a). Finally, as a mapping technology, a Global Positioning System (GPS) is the recommended equipment to be used to record a general single point or to determine what method is best for the audience for which the survey is intended.

The second publication by the Georgia Department of Natural Resources Historic Preservation office provides common survey and mapping techniques used in cemeteries (2008b). This sheet provides common terms and definitions which are used in referencing gravestones and monuments. For surveying, the use of standardized forms is recommended, and in mapping the cemetery, once again, hand drawn maps are deemed sufficient. To draw a map, the area is divided into grids and marked, so that several teams can work at concurrently, "measuring each feature from the desired starting point" (Georgia Department of Natural Resources, 2008b).

Johan Liebens worked in Pensacola, Florida to survey St. Michael's Cemetery (2003). A total station was used to take coordinates of each corner of the grave in a consistent clockwise or counterclockwise pattern. The information collected was used to establish a fully searchable database (Liebens, 2003). Much like the current study presented here, his study is relevant because, "most of the on-line cemetery databases are unsearchable lists of the names of the occupants of the graves, the dates of birth and death, and, sometimes, general references to the block or section number of the cemetery" (Liebens, 2003, p 57). In addition, "some of the databases unsystematically give additional information such as the names of spouses or children or the epitaphs" (Liebens, 2003, p 57). Finally, Liebens states that "the present study was undertaken because spatially highly accurate maps and closely linked databases, do not seem to exist despite a large interest in cemeteries, historic and present" (2003, p 57). However, he found that due to the lack of proper mapping and recording of information, technological difficulties and layout of the cemetery itself, there can be a difficulty in recording the information found in cemeteries. Regarding mapping, Liebens argues that maps of archaeological sites often do not extend to the cemeteries connected with them (2003). Finally, maps created using more advanced technology, like geographic information systems, and standardized recording should be made available on the internet because "many maps and databases of cemeteries are available, and some are intended for archaeological, historical, or genealogical research. Many of these maps are simple hand drawings or generalized maps. Very few web sites show the location of individual graves" (Leibens, 2003, p 57). In the end, results "indicate that, among many other potential applications, these maps and databases can facilitate analysis of funerary

architecture, changes in the use of building materials, historical aspects of social and gender issues, and mortality trends" (Leibens, 2003, p 66) as well as aiding in the "management of cemeteries" (Leibens, 2003, p 66).

Also in 2003, a similar style of survey was undertaken at Ebenezer Cemetery in Ebenezer, Georgia (Weitman). This survey looked at the organizational pattern of the cemetery, and the maps and database created were byproducts of the original question of whether Ebenezer Cemetery was organized in a linear pattern as defined by Pearson (1999). This survey was conducted using a total station, while Microsoft Excel was used to record the data from the headstones. The center of headstone was the point recorded by the total station and the coordinates were put into the engineering software ProCogo. The coordinates input were given numerical points, and these points were associated with the information recorded from the headstones. The Microsoft Excel information was organized into listings that could be sorted numerically and alphabetically by last name. In addition, the ProCogo output created maps which showed the growth of burials over time, starting with the earliest burials and increasing every ten years to the most recent. The results were not consistent with the hypothesis, but a copy of the project which included all of the data collected, was delivered to the Jerusalem Lutheran Church and Salzburger Museum so future visitors could have access.

Surveying and Scanning Technology

Much of the technology used by archaeologists to scan and survey sites was not designed with that purpose in mind. Originally beginning as aids in the fields of civil engineering, and atmospheric science, disaster management, the oil and gas industries, and for defensive purposes, handheld Global Positioning Systems (GPS), total stations,

and Light Detection and Ranging (LiDAR) technologies have all evolved to find their places in the archaeologist's toolbox (Warden, 2009, p 5; Harrap & Lato, 2010). LiDAR scanning is the newest addition, and most advanced, because a scan can "provide a physical record of upstanding remains, including everything from tower houses to megalithic tombs" (Moore & O Neill, 2005, p 31).

One of these pieces of equipment, a total station, is a type of "surveying equipment used in the field to determine the location of a point of interest by knowing the angle and distance of that point with respect to the instrument locations" (Warden, 2009, p 6). The largest difference between this equipment and handheld GPS is that it can determine distances. Like the GPS, though, it focuses on individual points which are significant over the span of a survey (Warden, 2009, p 6). The individual points that are recorded are "typically coded and linked to a sketch or photograph" (Warden, 2009, p 6). In addition to acting as significant locations, recorded points can be used "to control traditional methods, like hand measurements and drawings, or to control measurements taken with other remote sensing tools" (Warden, 2009, p 6).

LiDAR was developed in the late 1970s and 1980s as a method of aerial scanning, in which the equipment attached to a plane, and "operating in the near infrared…could emit sufficiently powerful radiation that a detector mounted alongside the laser could record its reflections from the ground" (Harmon, Leone, Prince & Snyder, 2006, p 650; Warden, 2009). LiDAR, by 1997, had evolved into a ground method to be used by "civil engineers to record structures where accuracy is of paramount importance" (Moore & O Neill, 2005, p 31; Warden, 2009). Rather than the single measurement made by a total station or handheld GPS per object recorded, LiDAR scan sends out "thousands of beams

of light per second and records the relative angle, distance, and location of each point reflected back to the instrument (Warden, 2009, p 6). The result of each scan is "a geometrically accurate collection of points, or a 'point cloud,'" (Harrap & Lato, 2010, p 6). This point cloud "represent[s] the spatial organization of the object or objects from which they were reflected" (Warden, 2009, p 6). The distance is measured either by the amount of time taken for a beam of light to hit an object and return to the scanner (time-of-flight) or by a continuous beam that is sent out and has known phases (phase based) (Harrap & Lato, 2010). The difference between the two styles is the distance that can be measured. The scanner itself is not limited to one position, and "can be rotated or moved around the site to capture entire scenes [resulting in] a high-definition laser survey, providing a complete, computer-generated, measurable and scaled 3D model…that can be viewed from any angle or plane" (Moore & O Neill, 2005, p 32). Over time, the scanners have "evolved to become sleeker, faster, more accurate, and more powerful" (Warden, 2009, p 7). Though the data collection method is the about the same, software for post-processing is more available and does not have to be done in the field (Warden, 2009). The processing of data collected to create one large point cloud out of the individual scans is done by matching up targets identified by the same number in each scan, "resulting in even larger data sets" (Harrap & Lato, 2010, p 6) to "create textured surface models that allow for creating land contours, high-resolution sections, elevations, and 3D views" (Warden, 2009, p 9). According to Warden, the greatest disadvantage to LiDAR is its price (2009).

With this evolution in technology, the relationship between dimension and point has been thrown into flux (Warden, 2009). Total station surveys focus largely on the

recording of points and their location within the larger picture. Scans produced by LiDAR images, however, focus more on the larger image. Because there are so many points, it is difficult to single one out and no longer is the main importance given to single points, "but much like the camera in relation to the sketch, they refocus attention to from point to image" (Warden, 2009, p 9). However, each point within the point cloud "contains coordinate information…and can be queried directly for dimensional information between any two points" (Warden, 2009, p 9). In addition, a cloud of points may create a total representation of an important object or site, rather than having single points which represent important features (Warden, 2009). These total representations of a site or object which can be stored or shared digitally "allow[s] for the primary data to be revisited and reinterpreted" (Moore & O Neill, 2005, p 32) now, and in the future. The question remains, however, which projects require such large amounts of information, and which would be better served with a focus on the individual point.

No matter which technology is being used, "documentation of cultural heritage over the last ten years has been dominated by development of digital tools" (Warden, 2009, p 10). The focus is more on the use of the newest tools instead of the heritage that is being preserved. Warden states that "we should be mindful that it is our concern for cultural heritage and its documentation that should drive our embrace of new tools and not the tools themselves" (2009, p 10).

CHAPTER 3

HISTORICAL BACKGROUND

This study was conducted for the purpose of determining the most comprehensive method of gathering gravestone data and mapping cemeteries with consideration to cost effectiveness, time efficiency, data accuracy and quantity of data. Two cemeteries, located at Mont Repose and Ebenezer, were chosen for this study. The cemeteries were similar in organization in that families were often grouped together in small plots and both showed evidence of unidentified graves with missing information or headstones. However, there were a number of differences which included (1) topological variations from uneven with sloping land with depressions to flat land; (2) little upkeep of the cemetery with presence of debris, tree limbs and uncut grass to maintained grounds; (3) quantity of gravesites ranging from ninety-three to eight hundred and seventy-four; and (4) a very limited amount to a vast amount of historical background information accessible.

Coosawhatchie, South Carolina

Coosawhatchie, South Carolina is located in the southeastern part of the state about forty-two miles from Savannah, GA and about seventy miles from Charleston, South Carolina. The town was named for the Coosaw Indian Tribe (Historical Marker Database, 2012). Once established in the 1740s, and later with the high rate of travel through the city as a stop on the King's Highway, Coosawhatchie flourished and continued to grow until 1779 when British troops burned many of the buildings during the Revolution (Amaral, 2011). Coosawhatchie served as the location of the Beaufort District County Seat from 1789 to 1836, until it was moved to Gillisonville (Historical

Marker Database, 2012). Coosawhatchie has transitioned from being located in Beaufort County, to Hampton County and finally in Jasper County.

Located in the town of Coosawhatchie is Mont Repose Plantation. Mont Repose is located on a low lying section of land which made it "an ideal location for rice cultivation in tidal waters" (Amaral, 2011, p 55). Though it is not on the coast, the location of the Coosawhatchie River provided sufficient water to make this a successful plantation. Documentary evidence provides the owners of Mont Repose and its sister plantation, Cotton Hall, as Thomas Charles Gillison and Samuel R. Gillison (Amaral, 2011). Based on interpretation of the available artifacts, Mont Repose was likely in use from 1770 to 1864 (Amaral, 2011). Today the former plantation consists of five hundred acres owned by Martha Black and is mainly used as a private hunting reserve (Amaral, 2011). No standing historic structures remain, which is the subject of a thesis by Heather Amaral (2011). Excavations by Georgia Southern University began in 1999 with permission from Ms. Black and there continues to be work on the site by Georgia Southern field schools.

Mont Repose Cemetery

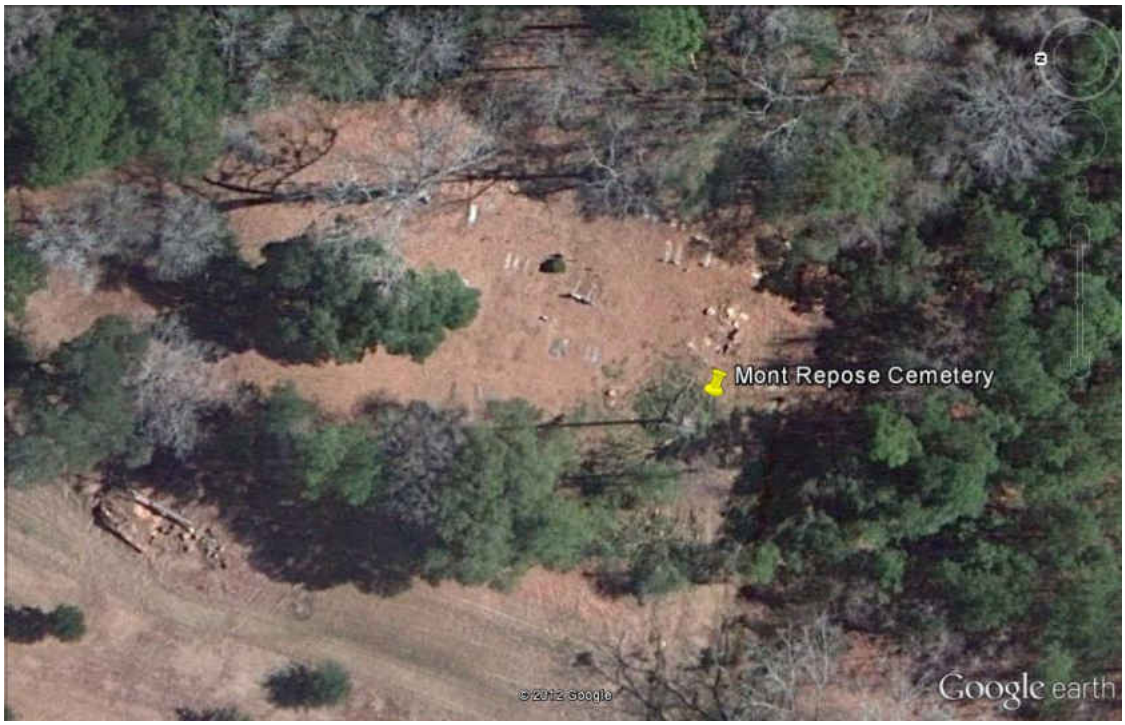


Figure 1: Google Earth Image of Mont Repose Cemetery

On the Mont Repose plantation property is a family cemetery that contains no evidence of relation to the former plantation. The entrance to the cemetery is located about six hundred and seventy-one feet from the current modular house that is on the property. Little is known about this cemetery or how it came to be located on the property. One theory is that Dr. Wade, who once laid claim to the land adjacent to Mont Repose, may have started the cemetery. A comparison of genealogical research with the recorded gravestone data, as well as the grouping of graves in the cemetery and the location of his grave in the cemetery, indicates that Dr. Wade is the believed patriarch of this cemetery. Due to the depressions in the ground, and based on the reaction of the ground after a body has decayed, it can be assumed that there are unmarked graves on the site. The lack of historical records may have contributed to the belief that some of the unmarked graves may be slaves and that the current burials may be descendants of slaves

owned by the plantation. It could be that this is where the Gillisons began burying their slaves and that Dand Wade, Dr. Wade's father, was a child of plantation slaves who lived on the land. More research and community discussion will be needed to attain a definite answer as to why this cemetery is located at this site. The cemetery itself is roughly two hundred and eighty-four feet by eighty-eight feet and is categorized as a rural cemetery. It contains ninety-three identifiable graves and possibly more unidentified graves with the potential graves indicated by depressions in the earth within the cemetery, as corresponds with the standard decay of burials.

Figure 2: Panoramic Photograph of Mont Repose Cemetery

Dr. Kit Wade and Family

Figure 3: Dr. Wade's Gravestone

Dr. Kitt Wade Marvel is buried at Mont Repose Cemetery in Coosawhatchie, South Carolina. Little is known of this cemetery, but as more is learned about the people who are buried there, more is also learned about the cemetery itself.

Dr. Wade's gravestone gives evidence that he was born on September 26, 1855 and died at Steep Bottom, South Carolina on November 5, 1938, aged eighty-three years old. His gravestone reads:

> "His favorite hymn which he taught his children was:
> Guide me oh thou great Jehovah
> Pilgrim though this borrowed land
> I am weak but thou almighty
> Hold me with thy powerful hand.
> Sleep on Father and take your rest. We love you, but Jesus loves you best. Erected by his daughter, Mrs. A.W. Bass."

Census data provides correlation with this headstone data to an extent. Data from the 1870 to the 1930 censuses gives much information on Dr. Wade's family over the years. The 1870 census data provides that at this time, Dr. Wade was living with his father, Dand or Daniel, mother, Cherry Elizabeth, and two brothers, Cale or Cate and Nathan, in St Luke's Parish, Beaufort, South Carolina (Ancestry, 1870 US Census). According to the census, he was a middle child, about twelve years of age at the time, making his birth date approximately 1858, three years different than the date on his gravestone (Ancestry, 1870 US Census).

By 1880, Dr. Wade had moved to Coosawhatchie, South Carolina where he lived with his wife, Fannie, and daughter, Jenny, and worked as a farmer (Ancestry, 1880 US Census).

The 1900 census indicates that Dr. Wade was still living in Coosawhatchie with Fannie, but now with seven daughters (Elizabeth, Sarah, Rosa, Rachel, Delia, Emma, Mary, and Maggie), two sons (Allen and David), and mother-in-law, Margaret Pollins (Ancestry, 1900 US Census). This census provides a glimpse into the life of Dr. Wade and Fannie as a couple. They had been married for twenty-two years, meaning that they were wed about 1878 when Kit was about twenty-three and Fannie about twenty. Also at this time, Fannie was the mother to fourteen children, ten of whom were still living (Ancestry, 1900 US Census).

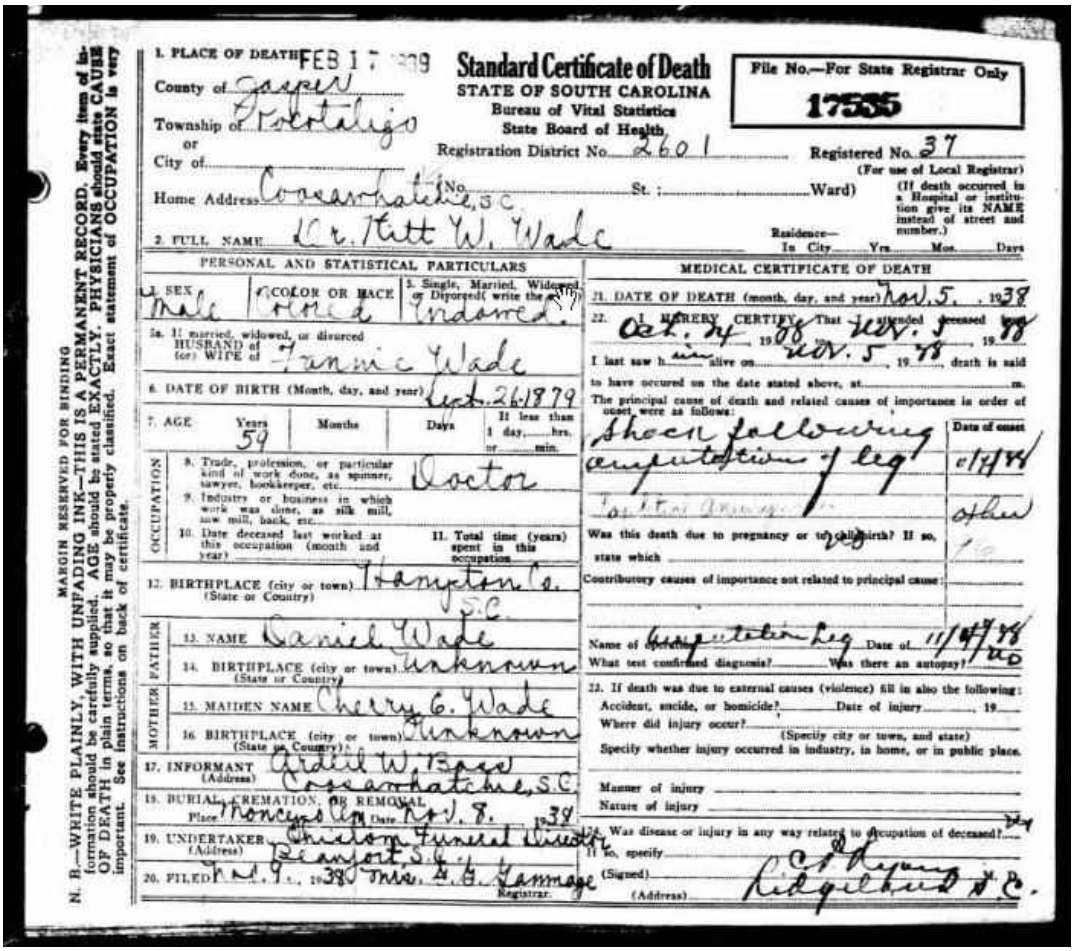
The 1910 census of the Wade family was the last census taken in which they lived in Coosawhatchie (Ancestry, 1910a US Census). At this point, they were living with their six daughters (Sarah, Addie, Emma, Maggie, Jennie, and Mine) and one son (Hubbart).

Dr. Wade and Fannie had now been married for thirty-one years, and Fannie was mother to ten children, nine of which were living (Ancestry, 1910a US Census).

In 1920, Dr. Wade and Fannie, at the ages sixty-five and fifty-eight respectively, moved to Pocotaligo, South Carolina. Living with them were their daughters Emma and Rachel and son Herbert (possibly Hubbart from the 1910 census) (Ancestry, 1920a US Census).

In the last census taken before his death, Dr. Wade was still in Pocotaligo, South Carolina in 1930 (Ancestry, 1930 US Census). He was living with his wife, two daughters, Rosa B Wade and Mamie Wade Devoe, his wife's aunt, Emma Polite, his nephew, Johnnie Wade, his grandson Willie Wade, and his three granddaughters, Willie M., Beatrice and Sadie Wade (Ancestry, 1930 US Census).

The death certificate on file, lists his wife's name, Fannie Wade, his parent's names, Daniel and Cherry E. Wade, and his site of burial as Moncepoe or Mont Repose Cemetery, but has his death on November 5, 1938 at fifty-nine years of age, different than his gravestone (Ancestry, 1938a). It states that he was a Doctor and died from shock following the amputation of his leg (Ancestry, 1938a; Image 4). There is a second death certificate that contains the same information, but corrects his name as Kite Wade and living in the township of Coosawhatchie rather than Pocotaligo (Ancestry, 1938b).



Standard Certificate of Death
STATE OF SOUTH CAROLINA
Bureau of Vital Statistics
State Board of Health

File No.—For State Registrar Only
17535

1. PLACE OF DEATH FEB 17 [illegible]9
County of Jasper
Township of Coosawhatchie
or
City of
Registration District No. 2601
Registered No. 37
(For use of Local Registrar)
Home Address Coosawhatchie, S.C. (No. St. Ward)
(If death occurred in a Hospital or institution give its NAME instead of street and number.)
2. FULL NAME Dr. Kitt W. Wade
Residence—In City Yrs. Mos. Days

PERSONAL AND STATISTICAL PARTICULARS

3. SEX Male
4. COLOR OR RACE White
5. Single, Married, Widowed, or Divorced (write the word) Widowed
5a. If married, widowed, or divorced HUSBAND of (or) WIFE of Fannie Wade
6. DATE OF BIRTH (Month, day, and year) Sept. 26 1879
7. AGE Years 59 Months Days If less than 1 day, hrs. or min.

OCCUPATION
8. Trade, profession, or particular kind of work done, as spinner, sawyer, bookkeeper, etc. Doctor
9. Industry or business in which work was done, as silk mill, saw mill, bank, etc.
10. Date deceased last worked at this occupation (month and year)
11. Total time (years) spent in this occupation

12. BIRTHPLACE (city or town) (State or Country) Hampton Co. S.C.

MOTHER
13. NAME Daniel Wade
14. BIRTHPLACE (city or town) (State or Country) Unknown
15. MAIDEN NAME Cherry G. Wade
16. BIRTHPLACE (city or town) (State or Country) Unknown

FATHER
17. INFORMANT (Address) Odell W. Bass Coosawhatchie, S.C.
18. BURIAL, CREMATION, OR REMOVAL Place Moncks Cor. Date Nov. 8. 1938
19. UNDERTAKER (Address) Chisolm Funeral Director Beaufort S.C.
20. FILED Nov. 9, 1938 Mrs. E. G. Talmage Registrar

MEDICAL CERTIFICATE OF DEATH

21. DATE OF DEATH (month, day, and year) Nov. 5. 1938
22. I HEREBY CERTIFY, That I attended deceased from Oct. 24 1938 to Nov. 5 1938
I last saw him alive on Nov. 5 1938, death is said to have occured on the date stated above, at m.
The principal cause of death and related causes of importance in order of onset, were as follows:
Shock following amputation of leg — Date of onset 11/4/38
Contributory causes of importance not related to principal cause: other
Was this death due to pregnancy or childbirth? If so, state which No
Name of operation Amputation Leg Date of 11/4/38
What test confirmed diagnosis? Was there an autopsy? No

23. If death was due to external causes (violence) fill in also the following:
Accident, suicide, or homicide? Date of injury 19
Where did injury occur? (Specify city or town, and state)
Specify whether injury occurred in industry, in home, or in public place.
Manner of injury
Nature of injury
24. Was disease or injury in any way related to occupation of deceased? No
If so, specify
(Signed) C. H. Young M.D.
(Address) Ridgeland S.C.

N. B.—WRITE PLAINLY, WITH UNFADING INK—THIS IS A PERMANENT RECORD. Every item of information should be carefully supplied. AGE should be stated EXACTLY. PHYSICIANS should state CAUSE OF DEATH in plain terms, so that it may be properly classified. Exact statement of OCCUPATION is very important. See instructions on back of certificate.
MARGIN RESERVED FOR BINDING

Figure 4: Dr. Wade's Death Certificate (Ancestry, 1938a)

Quite a few differences became evident in the course of research. First, there is no evidence of Dr. Wade ever using the surname Marvel. Second, his name is usually spelt as Kit, although it shows up as Kitt, like on his gravestone and death certificate (Ancestry, 1938a) and Kite, like on the alternate death certificate (Ancestry, 1938b). A similar thing also happens with Fannie being spelt as Fanny. A comparison of census data shows inconsistencies with ages and number of children. Finally, Dr. Wade's birth date is listed on his death certificate as September 26, 1879 (Ancestry, 1938a). This differentiates from the gravestone's date of September 26, 1855.

Dr. Wade and Fannie's son Allen was one of two Wade children who could be traced through census records. Allen married Mattie Wade about 1906 when he was

approximately twenty-six years old and his wife was thirty. According to the 1910 census, they had three children, all of which were living at that time. The family was located in Coosawhatchie, South Carolina with their daughters Fannie and Minnie, and son Kit (Ancestry, 1910b US Census). In 1920, they moved to Pocotaligo, South Carolina and now had their two sons, Kit and James, and daughter Bessie Mae living with them (Ancestry, 1920b US Census). There is no record for them after 1920. It could be possible that the James Allen Wade that is buried in the cemetery is Allen's son. Allen's gravestone is the only one in the cemetery that is carved by hand.

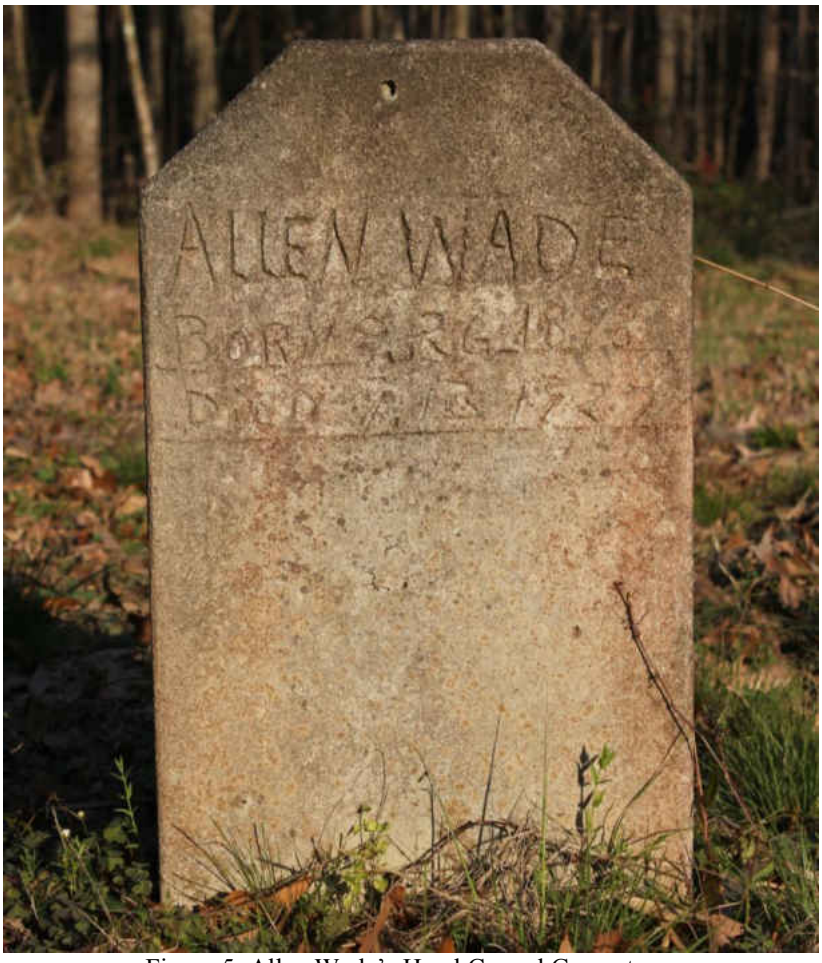


Figure 5: Allen Wade's Hand Carved Gravestone

Another of the Wade children, Rachel Pearl Wade King, buried in the cemetery could also be found in census data. According to her gravestone, and correlated by census

data, Rachel was born in1893 and died in 1963. She is recorded in the 1900 and the 1920 census as living in Dr. Wade and Fannie's household, but is not present in the 1910 census (Ancestry, 1900 US Census; Ancestry, 1920a US Census; Ancestry, 1910a US Census). Rachel's husband could not be located through census data, but it is believed that he is buried next to her and further research on Latson Benjamin King is necessary.

Figure 6: Rachel Wade and Latson Benjamin King Gravestones

Some of Fannie Wade's relatives could be traced and were included in the census data search because names of those buried in the cemetery were recognized. Data could not be found about Fannie prior to her marriage to Dr. Wade. This could be due to the lack of knowing her maiden name, though a search has been done with the variety of names available. Her father's name is likely Edward Pollin and it is known that her mother's name is either Margaret Pollins, based on the 1900 census or Margaret Rollins according to her gravestone in the graveyard (Ancestry, 1900 US Census; Figure 7).

Figure 7: Margaret Rollins' Gravestone

According to the 1900 census, Fannie's mother was living with Fannie, Dr. Wade and their ten children in Coosawhatchie. Fannie's mother had given birth to ten children, all of which were still alive (Ancestry, 1900 US Census). Seven of these children could be traced.

In the 1930s, Fannie's aunt, Emma Polite, was living with Fannie, Dr. Wade, their two daughters, four grandchildren and nephew in Pocotaligo, South Carolina (Ancestry, 1930 US Census). With the knowledge that her maiden name was likely either a version of Pollins or would be unknown, a search was made with the information available. The search concluded with the result that Emma Polite was in fact the sister to Fannie's mother. She was married to Lewis Polite and had seven recorded children. There is an

additional Polite, whose first name is unknown, buried in Mont Repose Cemetery with a birth date of 1974, which corresponds with that of one of Emma and Lewis' children.

Historical records extending beyond both Dr. Wade and Fannie's parents could not be located and there is no data that can currently be found prior the 1870 Census. Slave records for South Carolina were searched under the names of the Mont Repose and nearby plantation owners, but as there were so few records available more research needs to be done. This may provide further implications that their parents were children of slaves, or slaves themselves.

There areindividuals listed in census records as being related to Dr. Wade, but no further relationship information, such as their parents, could be found. This lack of explicit information applies to Dr. Wade's grandchildren (Beatrice, Willie, Willie M, and Sadie Wade) and nephew (Johnnie Wade). There is also evidence that others buried in the cemetery are potential relations on both the Wade and Rolling/Rollin/Polin sides of the family, based on the last names of Dr. Wade and Fannie's families. On Dr. Wade's side are an Earl H Wade (possibly a grandson), Alfreda Wade (posibly a granddaughter), Martha Wade (possibly a daughter). Included on Fannie's side are an unnamed Polite, Clarah Pollens, E.R. Polsins and Rev. E.R. Poullens (one of these possibly being Fannie's father or brother) and Nancy Polling (maybe Fannie's sister). Each of these assumptions is based on the available birth and death dates found on the gravestones, and the evidence of different last name spellings from census data.

Ebenezer, Georgia

Unlike the Mont Repose cemetery in Coosawhatchie, the past of Jerusalem Lutheran Cemetery and Ebenezer is extremely well documented in a variety of sources, including journals, letters, maps and deeds.

Travel from Germany to Georgia

Europe in the late 1600s was a country on the brink of turmoil. France, led by Louis XIV, was the strong force, containing a third of the population with twenty million people in the 1700s (Hvidt, 1990). Spain and Germany began to vie for the Spanish throne. The Spanish King had no successor to take his place on the throne. The prospect of one ruler controlling two monarchies began to worry the other European rulers as it could create an imbalance of power. War waged until 1720, concluding with the Peace of Utrecht (Hvidt, 1990). This caused the German Empire to be divided into many differently sized "national units" (Hvidt, 1990, p 9) that were ruled by counts, dukes, bishops, the people, or the owner of the biggest castle. This division of land and people in Germany was also impacted by the Reformation, sending large masses of Lutherans to the North and Catholics to the South. However, this was not a complete division, as there were still encampments of both groups scattered across the other's territory.

One of these so-called "national units" (Hvidt, 1990, p 9), which is located in what is now western Austria or present day southern Germany was the archbishopric of Salza, later called Salzburg. Located in the snow covered Alps with areas of dense forests, the area has been occupied since 816 (Hvidt, 1990). In the mid-1700s, Hvidt, claims that approximately 125,000 people lived there (1990), while Strobel claims 150,000 (1855).

The largest change for the Lutherans living n Salzburg came on October 4, 1728 with the election of "a new and more zealous archbishop" (Hvidt, 1990, p 9) named Count Leopold Anton Eleutherius von Firmian (Jones, 1984). He saw the Lutherans as dangerous heretics because of their defiance of the Catholic Church, and "[e]gged on by his ruthless chancellor, Christian Heironymus von Rall," (Jones, 1984, p 5) he determined to put an end to the Lutheran's heresy. Gaining assistance from the local Jesuit priests, Firmian had conducted "a religious survey of every household in the archbishopric" (Hvidt, 1990, p 9). They divided the households into those that were Catholic and those that were not. The non-Catholics were broken down further and were "graded in five groups, from suspicious characters to dangerous heretics" (Hvidt, 1990, p 9). Of the total people living in the area, 20,678 were Lutherans (Hvidt, 1990). After this survey, the persecution began anew and with renewed vigor. This time, new charges were added, including "heavy fines and imprisonment for all who missed Catholic services, broke the fast rules or owned a Lutheran bible" (Hvidt, 1990, p 9). Lutherans not in Salzburg encouraged their "spiritual brothers" (Hvidt, 1990, p 11) to protest this treatment. The German Emperor prevented this possibility by sending in "a regiment of the imperial army" (Hvidt, 1990, p 11).

In 1731, three years after his election, Leopold was able to remove the heretic Protestants from his land by issuing the "Emigrationspatent" (Hvidt, 1990, p 11) or the "Edict of Expulsion" (Jones, 1984, p 7). This decree considered the Protestants to be

> "rebels and criminals and it ordered that they must leave Salzburg. Those who had no real property should leave the country within eight days. Farmers and homeowners were given one to three months to move, according to the amount of their property. These Protestants who would return to the Catholic Church in two weeks could remain" (Hvidt, 1990, p 11; Jones, 1984, p 7).

When the Protestant princes of neighboring countries tried to stop Firmian's actions because they violated the Treaty of Westphalia, Firmian rebutted that the Lutherans were "rebels intent on overthrowing the archbishop" (Jones, 1984, p 5), and were in fact "not Lutherans…but members of a new sect" (Jones, 1984, p 5) which absolved them of the Treaty's protection. Contrary to Firmian's expected result that more Lutherans would absolve of their faith rather than leave the country when confronted with the prospect of abandoning their home and land, more Lutherans chose to leave. This was the beginning of "the largest compulsory population movement of the entire Reformation," (Hvidt, 1990, p 11) beginning in November 1732. The Salzburg Lutherans packed their belongings in wagons and set off through the mountains, heading for any country that would take them. This migration was made up of more than one-seventh of the population of Salzburg from 25,000 to 30,000 people (Hvidt, 1990; Strobel, 1855; Coulter, 1960). They moved northwest to Augsburg and to other locations in southern Bavaria, Regensburg, and to places in Prussia – Wutemburg and Baden – as well as Swabia, Holland, and other locations in England (Hvidt, 1990; Strobel, 1855). The northeast of Bavaria was opened to accept the exiles, and money and food were given to those who went. About 17,000 people, more than half of the total travelers, moved to the "flat and unfriendly plains of east Prussia," (Hvidt, 1990, p 11) and Lithuania which had recently been ravaged by plague (Jones, 1984).

In addition to the Prussian King, Frederick William I, King George II of England also offered aid to the exiled Salzburgers (Hvidt, 1990; Jones, 1984). George II had two German Chaplains that maintained contact with Samuel Urlsperger, the bishop of the Augsburg Lutheran Ministry and "then Pastor of the Lutheran Church of St. Ann"

(Strobel, 1855, p 15), and had contact with an Augsburg banker named Chretian von Munch (Coulter, 1960; Jones, 1984; Hvidt, 1990). About the time of King George's communication with Samuel Urlsperger in 1732, there was a charter given to twenty-one men and they were titled "the Trustees for establishing the Colony in America" (Strobel, 1855, p 44-45). Under the orders of King George II, Urlsperger sent an appeal to all of the Protestant princes of Europe to collect money to aid the Salzburgers. He also began an appeal of his own. In a 1732 issue of London's *Gentleman's Magazine*, he published an article providing a narrative of the "expelled, homeless Salzburgers" (Hvidt, 1990, p 12) in great detail. This is likely one way that the Trustees learned about the plight of the Salzburgers. They would also have heard about the Salzburger's hardships through their membership and association with the Society for Promoting Christian Knowledge (SPCK), as early as October 12, 1732 (Hvidt, 1990; Strobel, 1855). The SPCK was "a missionary organization founded to bring the gospel to the poor of Britain and her colonies" (Jones, 1984, p 9), which "was already supporting Lutheran dissenters in many parts of the world" (Hvidt, 1990, p 12). With both publications and communication getting the word out by the Trustees, it is easy to see how the predicament of the Salzburgers could not be ignored. Knowing that the Colony of Georgia was already prepared to accept the debtors of England, and that the land and materials of Georgia needed to be protected against the Spanish in Florida, the Trustees saw that this could serve as a new home for the Salzburgers. With their offer of land, they also would pay for the Salzburger's transportation to Georgia and their first year's equipment and provisions while the SPCK would pay to get them from Germany to England (Hvidt, 1990). In addition, the German Evangelical Lutheran Church also offered to defray some costs

(Hvidt, 1990; Jones, 1984; Coulter, 1960). Despite the lack of expense to make the trip it was still quite difficult to convince the Salzburgers to sail to Georgia, when they could easily settle in nearby Prussia, Sweden or Denmark. This was shown by the small number of those that volunteered to go to Georgia. Only nine families, a total of forty people had volunteered to go by September 1733 (Hvidt, 1990). Still needing a Captain, Urlsperger wanted someone that he could trust and someone who was seaworthy, as they would have to make their way "through sorts of small states, dutchies, counties, [and] free towns, each demanding passports, tolls and bribes" (Hvidt, 1990, p 12). Johann von Reck, "the ambassador for England at the Diet of Regensburg" (Hvidt, 1990, p 12) offered his nephew, Phillip Georg Freidrich von Reck to the post (Hvidt, 1990; Jones, 1984).

When von Reck began the trip from Augsburg in either late October (Jones, 1984) or early November (Hvidt, 1990) 1733, he was twenty-three years old and had thirty-seven people put into his care (Jones, 1984; Hvidt, 1990) or forty-two men with their families totaling seventy-eight people (Strobel, 1855). This band of travellers went toward Marksteft, heading for the Rhine on which they rode for three weeks until they reached Rotterdam on the 27th of November (Hvidt, 1990; Strobel, 1855). Here they met up with Reverends Johann Martin Bolzius and Israel Christian Gronau, "two instructors from the Latin School of the Franke Foundation" (Jones, 1984, p 12) who were to head the government and to minister to the Salzburgers in Georgia. After spending a week in Rotterdam, von Reck, the Salzburgers and the Reverends Bolzius and Gronau set sail for Dover on the *Purisburg*, a two ton ship sent by the Trustees (Jones, 1984; Hvidt, 1990; Strobel, 1855). The trip to Dover was not only delayed by inclement weather but also rough seas causing the generally short trip to take three weeks to get to England (Jones,

1984; Hvidt, 1990). In late December 1733 (Strobel, 1855) or early January 1734 (Jones, 1984; Hvidt, 1990) the *Purisburg* set out on its last leg of the trip to Georgia, leaving Dover and heading for the Southeastern United States. On March 5, 1734, after eight weeks of travel from Dover on the open sea, the ship was put in port at Charleston, South Carolina. It was here that Bolzius, Gronau and von Reck first met General James Oglethorpe, and Robert Johnson, the governor of South Carolina (Jones, 1984). In a letter dated April 2, 1734, James Oglethorpe wrote to the Trustees describing his first encounter with the Salzburgers. Von Reck and his passengers arrived in Charleston "just as [Oglethorpe] was going to embark for England" (Lane, 1975, p 40; Jones, 1984, p14), "to procure reinforcements for the colony" (Strobel, 1855, p 59). Oglethorpe instead decided to travel with the Salzburgers to their destination to "place them there and make a disposition for their subsistence" (Lane, 1975, p 40). He joined them onboard the *Purisburg* and sailed with them for one week, arriving in Savannah in March 1734 with seventy-eight passengers (Lane, 1975; Strobel, 1855; Jones, 1984; Lane, 1974).

Arrival in Georgia and Establishment of Ebenezer

The Salzburgers and their travelling companions were greeted very warmly upon their arrival in Savannah. Bolzius wrote in his journal: "At the place of our landing, almost all of the inhabitants of Savannah were gathered together. They fired off some cannons and cried huzzah!" (Strobel, 1855, p 61; Hvidt, 1990, p 12). They were "entertained with every mark of hospitality" (Strobel, 1855, p 60) and a "very good dinner was prepared" (Jones Jr, 1997, p 12) for them. It was then time to find a site for the Salzburgers to settle in Georgia. To choose this site, Oglethorpe set out with von Reck, Gronau, one unnamed Salzburger, the Speaker of the South Carolina assembly

Paul Jenys, a surveyor named Nobel Jones, and a party of Indians (Jones, 1984). General Oglethorpe allowed the Salzburgers to locate where they wished, to an extent. Oglethorpe led them "about four miles below the present town of Springfield, in Effingham County" (Jones Jr, 1997, p 13), "to an area about twenty-five miles northwest of Savannah, where he wanted a settlement for military purposes" (Jones, 1984, p 14). All of the representatives of the Salzburgers were "delighted by the chosen site" (Jones, 1984, p 14-15) and at the time to the sea weary travelers, it surely looked like a reprieve, "a blessed spot, redolent of sweet hope, bright promise, and charming repose" (Jones Jr, 1997, p 13). This site also met the requirements of what the Salzburgers wanted in a new home. One desire they had was that since they spoke German rather than English, "they wanted to live in a group by themselves, and having left behind their beloved mountains, they wanted a region as nearly as possible like their own home" (Coulter, 1960, p 27). They also had the wish "to be removed to some distance from the sea, where the scenery was diversified with hill and dale, and they might be supplied with springs of water" (Strobel, 1855, p 62). They named both the settlement and the river flowing nearby Ebenezer, meaning "stone of help" (Coulter, 1960, p 27; Jones, 1984, p 15) or "rock of help" (Hvidt, 1990, p 13).

At the time of settlement, the trees and general plant growth gave the impression that the soil was fertile and the river implied that water travel was easily accessible, but "time was to prove that appearances can deceive" (Jones, 1984, p 15). On March 26, nine Salzburgers went forth from Savannah to Ebenezer to clear land and build shelters for those still in Savannah (Jones Jr, 1997; Jones, 1984). While these Salzburgers were busy working in Ebenezer, von Reck and Nobel Jones worked on finding a quicker method to

get to the settlement via waterway. Travel from Ebenezer to the Savannah River was a distance of at most six miles by land, but to travel the same way by water, it would take twenty-five miles because once past the Savannah River, the creek became swamps (Jones Jr, 1997; Coulter, 1960). By April 2, all of the Salzburgers who had come over on the first transport were able to be housed at Ebenezer, though they still had to make their way from Savannah (Jones, 1984). Having failed at finding a successful water passage, they determined to place a road eight miles long from Abercorn, "a Scottish settlement on the Savannah River," (Jones, 1984, p 15) to transport their people and supplies from Savannah to Ebenezer. In order to transport supplies to their new homes, they had to rely on what was available, which was little. This meant they had to carry many of their supplies on their backs twenty-five miles across land from Savannah and while doing so, clear land for the few carts they had to make travel possible (Strobel, 1855; Jones, 1984; Lane, 1975). Making this pathway took precious time that could have been used planting crops. By the time the new settlers arrived, the few crops that were planted had not taken root. The soil that had looked so supportive was unable to support crops. The water that was available for drinking was contaminated and contributed to high mortality rates and dysentery among many of the settlers, which led to even more time being taken away from planting and "spent in nursing the sick and burying the dead" (Jones, 1984, p 17; Jones Jr, 1997, p 15). Sickness may also have been contributed to by the hard work expended that was necessary to establish the settlement in such a different climate than to which they were accustomed. All in all, the place was not conducive to housing the exiles for the whole year that they lived there.

While the Georgia Salzburgers were coping with the difficulties thrown their way, Samuel Urlsperger was arranging for a second transport in Augsburg. Departing September 23, 1734, about fifty-five new Salzburgers made their way to Ebenezer under the care of Jean Vat (Jones Jr, 1997; Strobel, 1855; Hvidt, 1990; Jones, 1984). Sailing on the *Two Brothers,* "a 150-ton ship built in North Carolina and commanded by an Irish captain named William Thomson" (Jones, 1984, p 19), they left Augsburg taking the same passage as the first transport. At London, they met Tomochichi and his family and traded boats for the *Prince of Wales* (Jones, 1984). They reached Georgia on December 28, 1734 and arrived at Ebenezer on January 13, 1735 (Jones, 1984; Hvidt, 1990; Lane, 1975). When they arrived, they found many people "dangerously ill with dysentery and scurvy" (Jones, 1984, p 20), and at this point it was evident that the soil was sterile, the land provisions had yet to be distributed, and wolves and bears were eating the livestock (Jones, 1984).

Shortly after the arrival of the second transport in 1735, the Trustees began to understand that all was not as well at Ebenezer as they had been led to believe. The Salzburgers had tried their hardest to keep the worsening conditions from their backers, Reverend Bolzius was at the forefront of this movement as he "thought it ungrateful to man and God to question this holy undertaking" (Jones, 1984, p 20). However, in one letter to Oglethorpe, Bolzius and Gronau finally "stressed the Salzburgers' high mortality and their infertile, often flooded, and inaccessible land" (Jones, 1984, p 21). Vat also sent letters to the surveyor who helped locate the land, Nobel Jones, and the keeper of the stores in Savannah, Thomas Causton (Jones, 1984). In part of a letter to Henry Newman, John Vat describes the situation:

> "we were confirmed of what everybody (excepting Mr. Causton and Mr. Jones, the land surveyor) had told us of the barrenness of this part of this province, being chiefly pine barren, a sandy white ground, not above one-fifth or at the most one-tenth part of tolerable mould, can land or swamps, which swamps seeming to be good are covered with a black mould about one or two inches deep. But under it appears a white sand like salt. So that everyone that cometh hither saith the people will never be able to get a livelihood in this place…" (Lane, 1975, p 122).

In late 1735, Urlsperger and von Reck, in Augsburg, and the Trustees and the SPCK in England, were trying to gather a third transport of Salzburgers to Georgia (Hvidt, 1990). Only twenty Salzburgers volunteered to go, with another sixteen from upper Austria. This third transport left Germany with thirty-six travelers, including Ernst Ludwig, von Reck's younger brother and Christian Muller. In addition to this, they also collected twenty-seven Moravians and their Bishop, General Oglethorpe, and John and Charles Wesley (Strobel, 1855). The total passengers on von Reck's boat numbered two hundred and fifty-seven, while the total transport was made up of four hundred and ninety colonists (Hvidt, 1990; Lane, 1975). They were provided two ships for this voyage – the *Symond* and the *London Merchant* (Strobel, 1855; Hvidt, 1990). They arrived in February 1736 (Strobel, 1855).

When Oglethorpe returned to Ebenezer, he went out to see the conditions "and satisfy himself with the regard to the expediency of the removal" (Jones Jr, 1997, p 18). He used the labor that had already been put forth to attempt to dissuade them from moving, to which Blozius responded: "The Salzburgers have suffered in their old settlement very much and leave now behind all their buildings and improvements, which troubles and costs will be made good to them if their lots are laid out upon good ground on both sides of the town" (Lane, 1975, p 244). However, after trying his hardest to keep

them at their current location, he assured "them that if they were resolved upon making the change he would not forbid it, but would assist them as far as practicable, in compassing their design" (Jones Jr, 1997, p 18). To the Trustees, Oglethorpe wrote:

> "The people at Ebenezer are very discontented and Mr. Von Reck and they that come with him refuse to settle Southward I was forced to go to Ebenezer to quiet things there and have taken all the Proceedings in writing. Finding the people were only ignorant and obstinate, but without any ill Intention, I consented to the changing of their Town. They leave a sweet place where they had made great Improvements, to go into a wood" (Georgia Historical Society, 1873, p 13).

They found a spot in November 1735, on a high ridge called the *Red Bluff* on the Savannah River while out gathering acorns for their pigs (Jones, 1984; Jones Jr, 1997; Strobel, 1855; Hvidt, 1990; Coulter, 1960).

New Ebenezer

In 1736, the Salzburgers relocated to their new site five miles from Old Ebenezer, and called it New Ebenezer. The name was kept the same in order "to discourage rumors back in Europe that the first settlement had collapsed" (Hvidt, 1990, p 19) and it "would not discourage other Salzburgers in Germany to come there and settle" (Lane, 1975, p 125). The Salzburgers were able to completely move from the old settlement to the new in a total of two years (Jones Jr, 1997). By 1738, Old Ebenezer was converted into a cow-pen and it became "the first of Georgia's dead towns" (Coulter, 1960, p 28; Jones Jr, 1997, p 19). New Ebenezer was laid out in a similar plan to that of Savannah, including the town common and garden lots (Sears, 1979; Strobel, 1855; Jones Jr, 1997). Salzburger popular history scholar, Reverend P.A. Strobel, describes New Ebenezer as follows:

> "The new town was laid off after the plan of Savannah, and covered an area of a quarter of a mile square. This space was divided into small squares each containing ten building lots and the latter numbered one hundred and sixty. Three wide streets passed through the town from east to west, which were intersected at right angles by four others running from north to south; besides which there were a number of narrow lanes, but these extended in only one direction - north and south. Four squares were appropriated to the sale of produce, and called "market-places" and four were reserved as public parks or promenade grounds. Two-thirds of a square was appropriated to the church, parsonage, and academy, and an equal quantity to the orphan asylum and the public storehouse respectively. On the east, a short distance from the town, was the cemetery. On the north and east was a large pasture for cattle, and on the south was one for sheep and goats. On the north and south, garden lots were laid out, and still farther south…farms were located, each farm consisting of two acres" (Strobel, 1855, p 91-92; Sears 40-41).

When comparing his description to the plat map drawn by Matthaeus Seutter in 1747 (Figure 10), Sears claims that though Strobel "is obviously discussing the same town, his directions and the number of streets and squares given by him do not fit the original map" (Sears, 1979, p 41). However the town was organized, it proved to be a success. The soil was fertile and crops thrived. They not only built new houses, but received money from Germany to establish, in 1737, the earliest orphanage in Georgia, which served as the place of worship in New Ebenezer due to the lack of a proper church (Strobel, 1855; Jones Jr, 1997; Jones, 1984).

By mid April, most of the people had been moved from Old Ebenezer to New Ebenezer, with only the women, children, and sick staying at Old Ebenezer temporarily to guard the gardens and protect the small harvest (Jones, 1984). Once settled at New Ebenezer, both the land and the people began to thrive, even though conditions were still hard. There were not enough supplies for every person, they had missed prime planting time due to construction, and signs of scurvy appeared (Hvidt, 1980). In 1736, a severe

case of malaria afflicted the settlers of New Ebenezer. According to Jones, the most prevalent type would have been tertian, "which causes the patient chills and fever every other day" (1984, p 33). However, by the beginning of September, "huts for all the widows and two large communal shelters" (Jones, 1984, p 34) had been built, there was a system of inheritance to keep garden lots equal and the privatization of land was introduced, meaning that every person was responsible for their own land, animals, and upkeep (Jones, 1984). Stephens describes the land at Ebenezer in *A Journal of the Proceedings in Georgia*: "In the Evening walked over all the Plantations, which consisted partly of two-Acre Lots, and partly of Land lying in Common, which they had cultivated, and for this Year appropriated to themselves" (1966, p 226). In 1736, New Ebenezer consisted of two hundred people (Hvidt, 1980).

The Salzburgers put much work into agriculture. They attempted to grow cotton beginning in 1738 (Jones Jr, 1997). In 1740, a grist mill was constructed at Ebenezer on the creek bank and was completed in 1741 and crops like wheat, rye and oats were planted now that they could be stored (Jones, 1984). The raising of cattle was an extremely successful venture at New Ebenezer. At this time in 1741, the population was up to twelve hundred people (Coulter, 1960). They now had sufficient food to support a larger population so a fourth and final transportation was arranged (Jones, 1984).

In May 1741, the development of silk culture in Georgia was underway and it proved to be "one of the most important matters to be considered and fostered in connection with the establishment and development of the Colony of Georgia" (Jones Jr, 1997, p 26; Jones, 1984, p 66). On March 17, 1736, General Oglethorpe gave the each of the families a mulberry tree (Hvidt, 1980; Jones Jr 1997; Strobel, 1855). With the trees

that they had been given by Oglethorpe in 1736, and with the aid of a subsidy, they became very adept at the process of raising silk worms and processing the silk. Bolzius wrote in his journal in May of 1741, "that within the preceding two months twenty girls succeeded in making seventeen pounds of cocoons which were sold at Savannah" (Jones Jr, 1997, p 27). They were so proficient that in November 1741, Oglethorpe purchased twelve hundred "white mulberry trees of which each family received thirty-two" (Jones, 1984, p 66; Jones Jr, 1997, p 27). Just over a year later in December, Oglethorpe sent five hundred more trees and a promise to deliver more if they were needed (Jones Jr, 1997; Strobel, 1855). They constructed a machine to process the raw silk and of the total eight hundred and forty-seven pounds of cocoons that were raised in Georgia in 1747, half of that was by the Ebenezer Salzburgers (Jones Jr, 1997; Strobel, 1855). By 1749, they had increased their total yield to "seven hundred and sixty-two pounds of cocoons, and fifty pounds thirteen ounces of spun silk" (CCJones Jr, 1997, p 27). In 1750, cocoon poundage was over one thousand and increased to eight thousand in 1764 (Jones Jr, 1997; Strobel, 1855). After 1766 the production of silk began to decline in the rest of Georgia, but in Ebenezer they continued producing hundreds of pounds, until 1772 when it was not worth the time or effort to continue (Jones Jr, 1997).

The year 1743 heralded the peak of enterprise New Ebenezer, since

> "by then all the Salzburgers had arrived and all major enterprises were well underway, such as the production of dairy products, beef, corn and other grains, lumber and silk. The next few years were to bring large acquisitions of pasture and farming land and an expansion of the saw mills" (Jones, 1984, p 78).

During the 1750s, a second sawmill was constructed to process the large number of trees that were near to the settlement and were send down the creek (Jones, 1984). They began

to manufacture their own bricks, which thanks to the forest in which they lived, they had unlimited wood to fire the clay (Jones, 1984). Also, the Salzburgers from the early transports had their land allotments increased to one hundred acres and new settlers were able to choose the location of where they wanted to live (Jones, 1984). The population was now at fifteen hundred people in 1751 (Jones Jr, 1997). In March of 1758, Georgia was divided into eight parishes (Jones Jr, 1997; Fortson, 1974). Ebenezer now fell under St. Matthew's Parish, along with the settlements at Abercorn and Goshen. On February 5, 1777, these Parish districts were disbanded and counties were created (Jones Jr, 1997; Coulter, 1960).

Jerusalem Lutheran Church, "the largest such building in Georgia," (Jones 1984, p 120) was built in 1769. The funds for construction came from Germany, since the new church would need to be built from bricks rather than the traditional material of wood to prevent rotting (Jones, 1984; Jones Jr, 1997). Still standing today, the constructed church is eighty feet by sixty feet. Reverend Bolzius, who lived to see the Salzburgers successful in Georgia, died on November 19, 1765, four years before the completion of the church (Jones, 1984; Jones Jr, 1997; Strobel, 1855).

New Ebenezer as a town prospered into the Revolution with the population of "the town proper not less than five hundred" (Jones Jr, 1997, p 35). Once the Revolution began, however, New Ebenezer was occupied by British soldiers on January 2, 1779 (Jones Jr, 1997). When the soldiers arrived at this location, they defended themselves by constructing "a redoubt within a few hundred yards of Jerusalem Church" (Jones Jr, 1997, p 36). The soldiers looked for allies in Ebenezer, and those that did not take an "oath of allegiance" (Strobel, 1855, p 203) had their property confiscated and "were

constantly exposed to every species of insult and wrong" (Jones Jr, 1997, p 37; Strobel, 1855, p 203) by both soldiers and Crown supporters in the town. Ebenezer was not only a camp, but it was also a waypoint for British troops that were on their way to Savannah from Augusta (Strobel, 1855; Jones Jr, 1997). These troops caused some Salzburgers to move away from Ebenezer and they had to witness the treatment of prisoners of war that held at Ebenezer before transfer to Savannah (Strobel, 1855; Jones Jr, 1997).

The most devastating result of the British occupation of Ebenezer was the treatment of Jerusalem Lutheran Church. The brick church was transformed by the British into a hospital initially, and was later used as a stable for the British horses and remained as such until the troops left Georgia (Jones Jr, 1997; Coulter, 1960; Jones, 1984; Strobel, 1855). Before the troops left in July 1783, they committed one final act of vandalism by destroying almost all of the church records and by "discharging their guns at different objects on the church" (Strobel, 1855, p 207). Martin Luther's symbolic metal swan, which served as his crest, and sits to this day atop the steeple as a weathervane is said to have a bullet hole in it where the British allegedly used it for target practice (Jones Jr, 1997; Jones, 1984; Strobel, 1855).

Some Salzburgers who had left during the occupation returned to find their former home much different. Houses had been burned, gardens destroyed and the church was now dilapidated (Strobel, 1855; Jones Jr, 1997). The Salzburgers worked hard, though, to repair their once thriving town, but the mills did not run, silk processing was conducted only on a small scale and while the population rose, it never reached its former glory (Jones Jr, 1997).

Just over one hundred years old, Ebenezer moved into the pages of history. It remained the county seat of Effingham County until 1821 when it was moved to the nearby, more central location of Springfield (Sears, 1979; Jones Jr, 1997; Strobel, 1855). After this, there was not much left or much draw for the site and it became a ghost town. In 1974, Ebenezer was placed in the National Register of Historic Places. Today, Ebenezer serves as a retreat center and tourist attraction. Old houses have been restored and repaired to recreate an image of the settlement. The Salzburger Historical Society is located at the site. The Ebenezer Church is standing and is in use today, as is the associated cemetery. Though Ebenezer has faded into the annals of history as a ghost town, it has not been forgotten.

Jerusalem Lutheran Church and Ebenezer Cemetery

Figure 8: Google Earth Image of Ebenezer Cemetery


Figure 9: Panoramic Photograph of Ebenezer Cemetery

Ebenezer Cemetery is located in Ebenezer, Georgia about eight miles away from Rincon, Georgia. The cemetery itself is about six hundred and thirteen feet by two hundred and ten feet covering three and a half acres, and is surrounded by a brick and iron fence. As of March 17, 2012, it contained eight hundred and seventy-four marked graves and, based on a 1951 church record of burials, houses at least thirty-four unmarked or graves with destroyed gravestones. It is considered to be a churchyard cemetery, even though it is not located directly next to the church, as it is owned and cared for by the Jerusalem Lutheran Church.

The land where Jerusalem Lutheran Church and Cemetery are located was originally granted to the Salzburgers in 1736 by the Trustees of Georgia. In 1769 the church was built (Strobel, 1855). However, a 1747 map of the town of Ebenezer has the location of the church, but no location of the cemetery, even though when Reverend Bolzius died, he was buried in an unmarked grave in the cemetery (Seutter, 1747; Strobel, 1855).

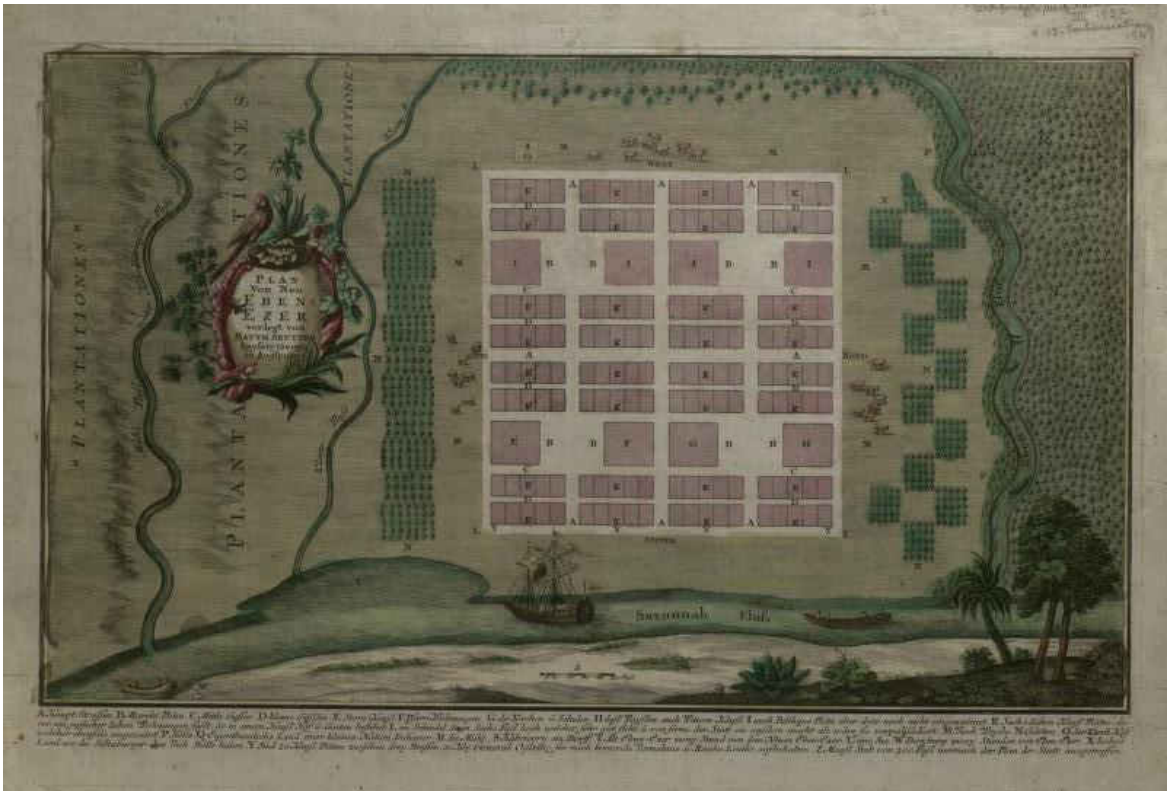


Figure 10: Plan von Neu Ebenezer (Seutter, 1747)

Various maps of New Ebenezer were able to be located. One map was the original 1747 plan for Ebenezer with exquisite detail found online via the UGA Hargrett Rare Book and Manuscript Library (Seutter, 1747; Figure 10). The three other records found consisted of a grant of land in 1779 (Effingham County, 1778), including a map (Effingham, 1779; Figure 11;), a 1959 warranty deed (Effingham County, 1959) and

associated survey map from 1953 involving an expansion the cemetery grounds (Effingham County, 1953; Figure 12).

The Effingham County Board of Tax Assessors website gave the current value of the land, as well as the location of an associated deed and plat map, and that the record of sale was in 1978. The grantor was not filled in, but the grantee is listed as the Jerusalem Lutheran Church.

The first record located was the September 1, 1778 record of sale of land from Jacob Casper Waldhour to the Church Elders for the Ebenezer Congregation. Sixty pounds of money was afforded to him by the state for a parcel of land "containing sixty feet in width and ninety feet in length" (Effingham County, 1778)

The lot was "granted by his majesty King George the third in or about the third day of December one thousand seven hundred and sixty unto Christian Ernst Shilo and afterwards sold by Hannah Elizabeth Shilo, only and sole heir of Christian Ernst Shilo deceased," and then to Henry Ludwick Bounty who willed it to his wife Mary Barbara Bounty (Effingham County, 1778). In addition to this, there was a plat map associated with this deed of sale.

Effingham County Plat Maps were also utilized providing access to a 1779 map of the settlement of New Ebenezer (Effingham County, 1779; Figure 11).

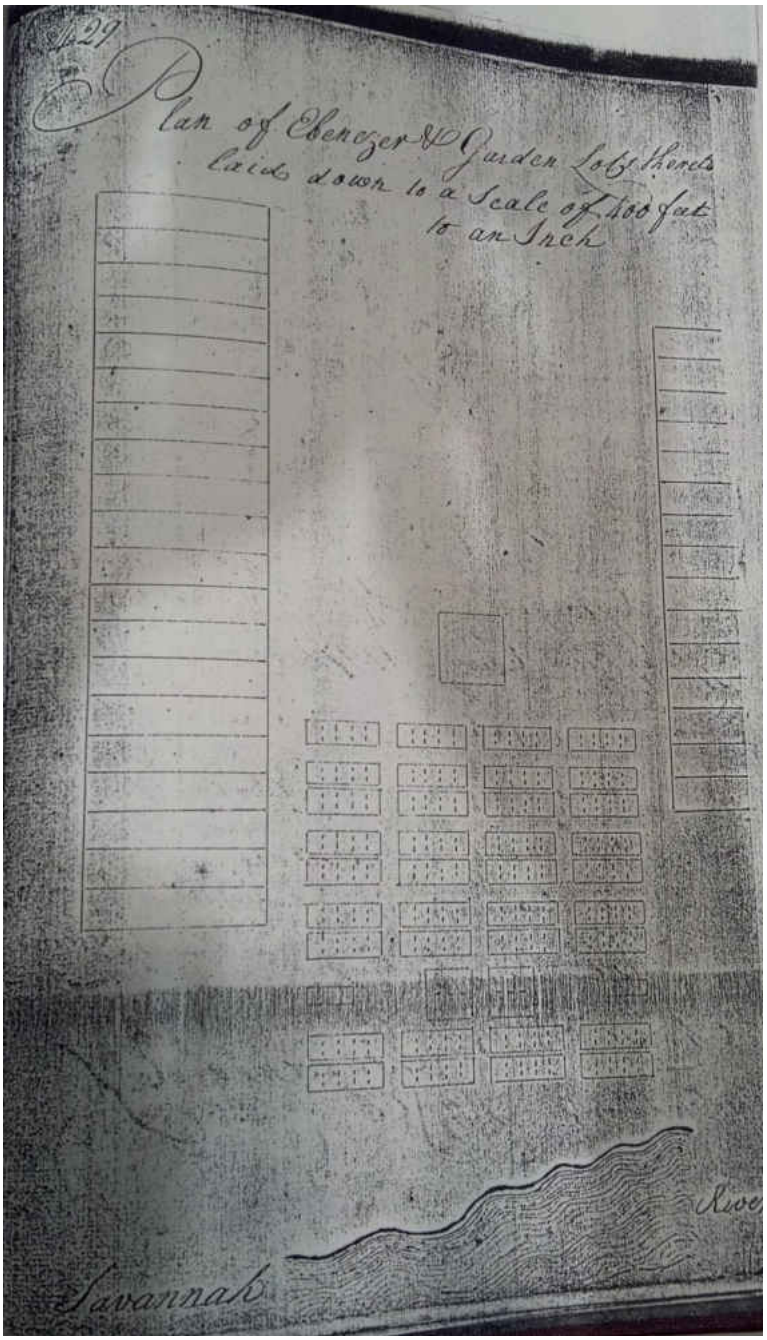


Figure 11: Ebenezer Plat Map (Effingham County, 1779)

There are potentially some errors with this map. It seems odd that the church would not be included. If it were, it would be at the bottom of the page near the river. The final map of Ebenezer Cemetery that could be located was a 1953 survey map that seems to have been part of an expansion (Effingham County, 1953; Figure 12).

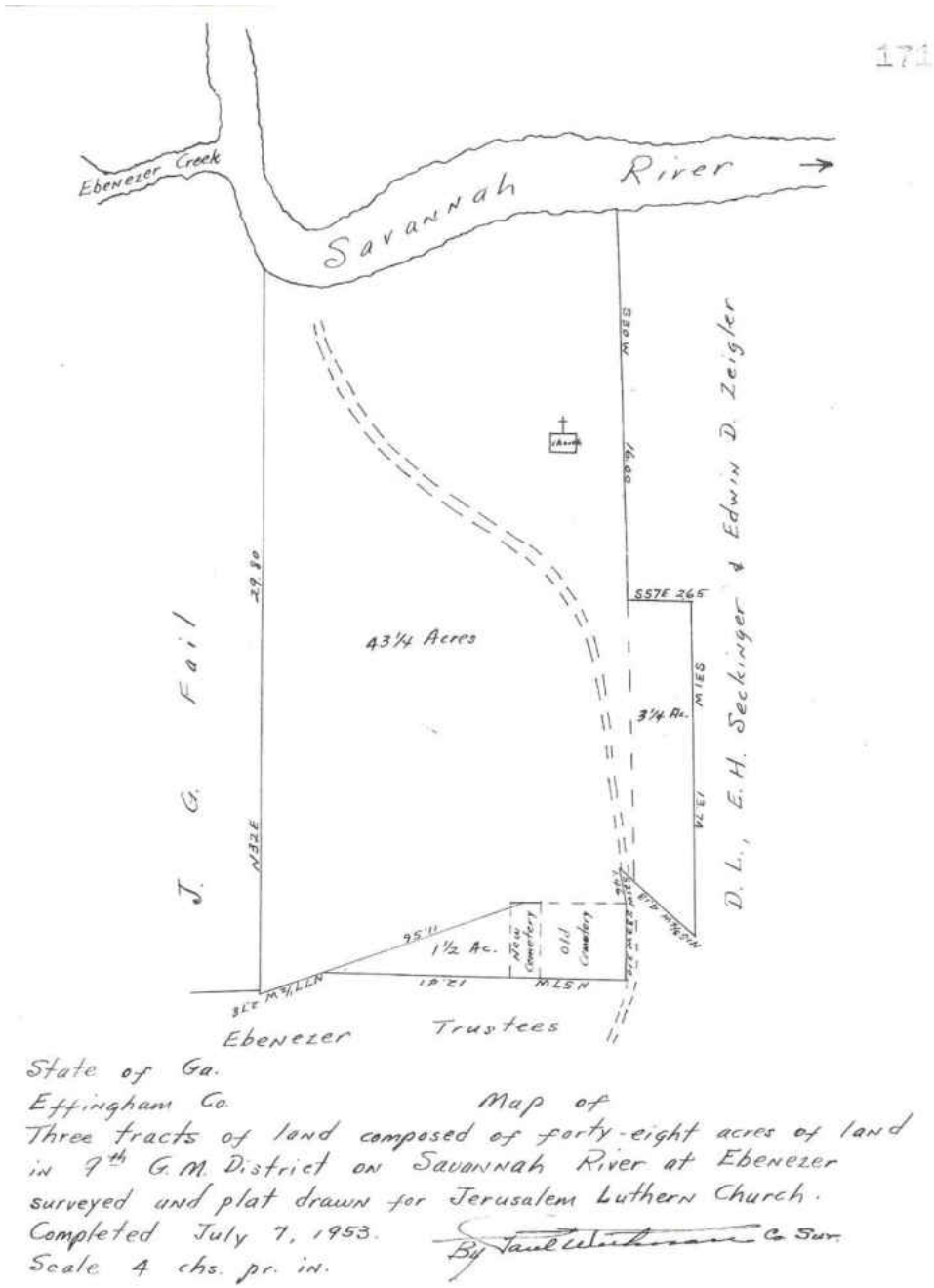


Figure 12: 1953 Map from the Surveyor Book (Effingham County, 1953)

This was a survey of three tracts of land made up of forty-eight acres (Effingham County, 1959). This expansion is likely an enlargement of the cemetery which appears later in the 1959 warranty deed. The final document is a warranty deed from the Lutheran Congregation to Jerusalem Lutheran Church. This was made on July 16, 1959 and could

match up with the 1953 survey map, in that they provide the shape of the land (triangular), the size of the land (one and one half acres) and the boundaries (North – Jerusalem Lutheran Church, East - Old Cemetery, South – Lands of the Trustees of the Evangelical Lutheran Church) (Effingham County, 1959). From these documents, it can be concluded that the cemetery has never existed as a single entity, but as an extension of church property.

CHAPTER 4

FIELD AND LAB METHODS

This study looks at a cross comparison of three different types of archaeological survey techniques to determine the most comprehensive method of gathering gravestone data and mapping cemeteries with consideration to cost effectiveness, time efficiency, data accuracy and quantity of data. As of yet, there have been no studies located which provide a comparison of different types of cemetery survey methodologies, but sources do exist which provide instruction on mapping, recording, and caring for a cemetery and markers (Georgia Department of Natural Resources, 2008a and 2008b; Chicora, 2008; Liebens, 2003). The objective of these three surveys was to look at dataaccuracy and the amount of data each method collected, compare the amount of time taken per total amount of data obtained, and produce a cemetery map. Additional objectives of this study included determining the best method for gathering data that is applicable to both small and large cemeteries, and if one technology can effectively streamline the process, from gathering all headstone data to mapping the cemetery.

Three different types of survey methodologies were used at both cemeteries. These survey techniques were the use of a handheld Global Positioning System (GPS), a total station and Light Detection and Ranging (LiDAR) equipment. Handheld GPS was used because it is a common method, being both affordable and accessible at many local stores. The total station was chosen because it is a common tool used by archaeologists. LiDAR technology was chosen due to equipment access and the potential for an improved efficiency in the recording data and mapping of cemeteries. The capability of LiDAR to combine both a legible recording of gravestone data and a cemetery map was

deemed probable based on discussions and graduate projects being conducted at Georgia Southern University.

Building on research that began in November 2002 and concluded in January 2003, with a total station survey of Ebenezer Cemetery, this study included an update and widened the scope of the initial survey. More recently, a LiDAR scan of Mont Repose Cemetery was conducted in September 2011, followed by a LiDAR scan of Ebenezer Cemetery in December 2011. The update to the Total Station survey of Ebenezer cemetery was performed in February 2012. Finally, handheld GPS data was collected for both cemeteries as well as total station data for Mont Repose Cemetery in March 2012. Initial LiDAR post-processing with Cyclone and Cyclone II occurred within the week following scanning, as did the total station and handheld GPS post-processing using ProCogo.

Mont Repose Cemetery

Figure 13: Google Earth Image of Mont Repose Cemetery

At Mont Repose, photographs were used to document all of the names and corresponding data, such as birth and death date and other epigraphs from the gravestones and then this information was input into Microsoft Excel (Appendix B). Arrangement of the information in Microsoft Excel allowed the data to be sorted in multiple ways: numerical, alphabetical (first or last name) or by year (birth or death). A spreadsheet was printed with the data sorted numerically. This numerical sorting was based on assignment of an arbitrary number to each gravesite as the headstones and tablets were recorded. The cemetery was divided into four blocks and information in each block was then recorded working the area from right to left. This same spreadsheet was used for recording each gravestone location with the total station.

#	First Name	Middle Name	Last Name	Suffix	Birth Month	Birth Day	Birth Year	Death Month	Death Day	Death Year
1	Eula	Mae	Busby				1944			1996
2	Unknown									
3	Oliver		Hamilton				1900			1979
4	Joseph		Graham				1918			1977
5	Bessie		Graham				1923			2005
6	Leonard	O	Graham				2000			2003
7	Donna	J	Graham				1960			1999
8	Ether		Rhett							
9	Frank		Rhett				1916			1996
10	Patricia	Ann	Rhett				1952			2000

Table 2: Mont Repose Cemetery Excel Record Sheet Excerpt

The first method addressed in the survey of Mont Repose Cemetery is that of handheld GPS. A Garmin Oregon 450 was the specific handheld GPS used for this study. The survey was conducted by a three person crew, with one person handling the handheld GPS and one person confirming each location and gravestone information with a corresponding Microsoft Excel spreadsheet. The handheld GPS was placed over the approximate center of each gravestone in the location where the prism would be placed for the total station survey. Then the waypoint was recorded and the data was stored internally on the handheld GPS for later retrieval. Before the point was recorded, the

assigned number given to that point on the handheld GPS was confirmed with the Microsoft Excel spreadsheet information for matching given number and correct gravestone data. This was repeated at each of the ninety-three marked graves. Each gravestone was recorded as confirmed by the handheld GPS time stamps. The total time for the handheld GPS survey was two hours, due to numbering and difficulty in locating some of the graves.

The coordinates were stored on the handheld GPS until they could be downloaded using Garmin BaseCamp, an "interface designed for Garmin devices and mapping products [which] allows users to plan and manage trips, routes, tracks, and waypoints" (Garmin, 2012) and for communication between the handheld GPS unit and the computer. Since the location information obtained from the handheld GPS unit is in latitude and longitude coordinates, ProCogo cannot process this data directly. The data must be converted to a coordinate system that can be recognized by the coordinate geometry computer program. In this study, both state plane coordinates and a user defined coordinate system were utilized. To get the data into the necessary form, the data was converted into a batch file that could be processed by a software program known as Corpscon. This program is Windows based and "allows the user to convert coordinates between Geographic, State Plane, Universal Transverse Mercator (UTM) and US National Grid systems on the North American Datum of 1927 (NAD 27), the North American Datum of 1983 (NAD 83) and High Accuracy Reference Networks (HARNs)" (US Army Corps of Engineers, 2008). After processing the Garmin data with Corpscon, the resulting coordinates were then imported into the ProCogo software program for

plotting. ProCogo is coordinate geometry software that allows for the processing of land survey information.

The next method used to survey was the total station. A Topcon GTS 210 was acquired and previous training allowed for its use at the site. Instrument setup was located in the southwest corner of the cemetery to obtain the best range of view for the gravestones. The back sight was an insulator on a nearby telephone phone next to the pond. The prism rod was held to the approximate center of each gravestone on the western side, often at the back of each tablet and the head of each slab gravestone. Angle and distance were recorded for each of the ninety-three graves. A three person crew conducted the study, with one person reading the instrument for angle and distance measurements, one person recording these measurements and another person using the Microsoft Excel spreadsheet to match the number of the corresponding grave and locating the prism rod. The total time for the total station survey was two hours.

The final method used to map Mont Repose Cemetery was a LiDAR scan and it was necessary to make two trips to Mont Repose. The initial trip was used for training on the equipment, establishing and recording a scan plan, and discovering the importance of cemetery grounds upkeep in using the LiDAR. One test scan was conducted but was not used in the final image construction, in part due to the obstruction of slab gravestones by overgrown grass. On the hand drawn scan plan triangles and a number were used to represent a scan position, a "T" followed by a number indicates a target position and circles indicate trees (Figure 14). The target positions were not labeled "T," a number, and "u" indicating an upper target or "l" for lower targets as seen in the Ebenezer scan plans because it was known that they were all twin targets.

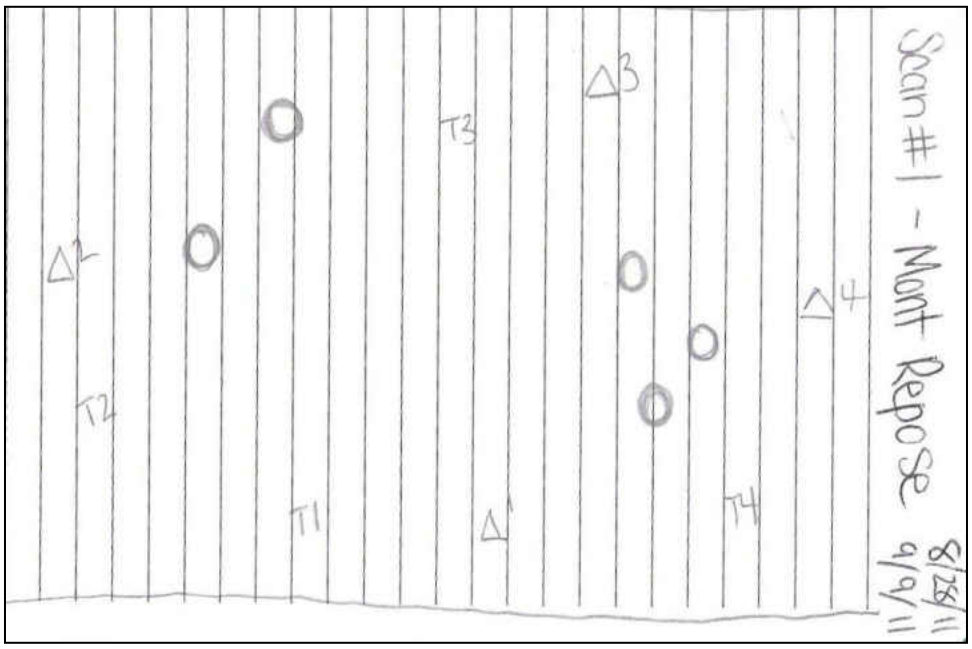


Figure 14: Hand Drawn Scan Plan for Mont Repose Cemetery

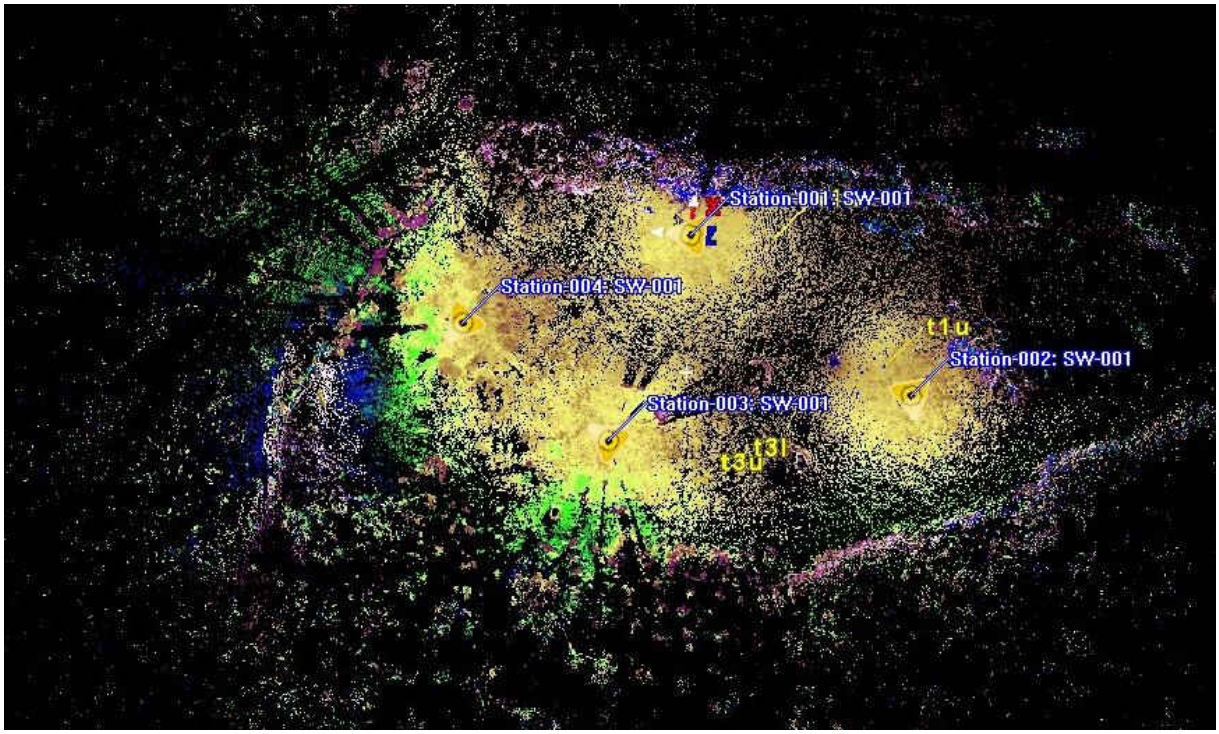


Figure 15: Computer Generated Scan Plan for Mont Repose Cemetery

A second trip to Mont Repose resulted in the removal of a portion of overgrown grass and completion of the LiDAR scans. Four scan positions were placed around the inner perimeter of the cemetery and four target positions were used to gather the maximum amount of data with the fewest number of scans. The scan positions were chosen to allow for the best view of the cemetery and the headstones from all angles to tie the images together. This scan was conducted with a three person crew. Three twin targets and a Leica C10 scanner were set up according to the scan plan. The scans were all conducted on high resolution with a one hundred meter scan range and a 360x270 degree view. Each scan took about twenty minutes from power on to power off. Including the movement of the scanner from one position to another, the total scanning process took two and one-half hours.

Figure 16: Leica C10 LiDAR Scanner

Figure 17: Twin Target

The data from the LiDAR scan was stored on the scanner until it could be retrieved. Once retrieved, the files were placed on an external hard drive to transport to a computer equipped with Cyclone and Cyclone II software for post-processing.

Ebenezer Cemetery

Figure 18: Google Earth Image of Ebenezer Cemetery

Of the eight hundred and seventy-four gravestone names and corresponding data, such as birth and death date and other epigraphs from the headstones or tablets, eight hundred and thirty-four gravesites had previously been input into Microsoft Excel during a previous study (Weitman, 2003). The additional forty were added to the spreadsheet prior to the total station update. Arrangement of this information in Microsoft Excel allowed the data to be sorted in multiple ways: numerical, alphabetical (first or last name) or by year (birth or death). A spreadsheet was printed with the data sorted numerically. This numerical sorting was based on assignment of an arbitrary number to each gravesite as the headstones and tablets were recorded usually up and down rows. The cemetery was

divided into three large blocks and information was then recorded working up and down rows in each block. This same spreadsheet was used for assigning a number to each gravestone location with the handheld GPS.

#	First Name	Middle Name/Initial	Last Name	Birth Month	Birth Day	Birth Year	Death Month	Death Day	Death Year
1	Naomi		Weitman	October	27	1795	January	25	1879
2	John	Lewis	Weitman				Decembe	8	1859
3	Elbert		Gnann	March	13	1825	October	30	1892
4	Salome		Gnann			1822			1909
5	B	D	Morgan	March	14	1841	August	13	1878
6	Sarah	O	Morgan	July	31	1843	October	31	1892
7	Lorena	G	Gnann	October	2	1866	October	17	1926
8	Florence	F	Gnann	September	20	1845	March	21	1934
9	William	R	Gnann	December	6	1856	Novembe	23	1936
10	Julia	A	Gnann	December	29	1860	Septembe	19	1956

Table 3: Ebenezer Cemetery Excel Record Sheet Excerpt

The first method addressed in the survey of Ebenezer Cemetery is the handheld GPS. A Garmin Oregon 450 was the specific handheld GPS used for this study. The survey was conducted by a three person crew, with one person handling the GPS and one person confirming each location and gravestone information with a corresponding Microsoft Excel spreadsheet. The handheld GPS was placed over the approximate center of each gravestone, either a headstone or a footstone if no headstone was available. Gravestones that had fallen over and been turned into slabs required the approximate center of the head of the slab to be marked as the waypoint. Each of these locations was where the prism would be placed for the total station survey. Once the waypoint was recorded, the handheld GPS stored that data internally for later retrieval. Before the point was recorded, the assigned number given to that point on the handheld GPS was confirmed with the Microsoft Excel spreadsheet information for matching given number and correct gravestone data. This was repeated at each of the eight hundred and seventy-four marked graves. Each gravestone was recorded as confirmed by the GPS time stamps.

The total time for the handheld GPS survey took about four and a half hours. The coordinates were stored on the handheld GPS until they could be processed with BaseCamp, then converted to State Plane Coordinates by using Corpscon in order for the data to be mapped with ProCogo.

The second survey technology used was a total station. The original total station survey of Ebenezer took place during several weekends from November 2002 to January 2003. The first step was to obtain permission from Eleanor J. Russey, the pastor of Jerusalem Lutheran Church, which has ownership of the cemetery. Upon receipt of a letter of permission, the next step was to record all pertinent data from the headstones into a notebook. From this notebook, the information was input into Microsoft Excel to produce a usable spreadsheet as previously described.

Total station training was received and each grave was surveyed with either a Topcon GTS 213 or a Topcon GTS 220, depending on which instrument was accessible at the time. The instrument point used to locate the total station position was a flagged nail hammered into the ground. The back sight was a pipe in the ground used to lock the gate, and is noted in field book. The prism rod was held to the approximate center on the western side of the gravestone, a headstone or a footstone if no headstone was available, or the approximate center of the head of the slab. The approximate center was chosen, in lieu of all four corners, because the most important aspect of this project was the location of each individual grave as indicated by the presence of a marker. It was deemed that all four corners would not be necessary and would lead to cluttering the map due to the mapping software used. With assistance from the total station trainer, a coordinate grid system was created for the cemetery.

Angle and distance measurements were recorded for each of the eight hundred and thirty-four graves in the field book. A three person crew conducted the study, with one person reading the instrument for angle and distance measurements, one person recording these measurements and another person using the Microsoft Excel spreadsheet to confirm the number and burial information with the location of the prism rod at the corresponding grave. The measurements were then input into the ProCogo software for map development.

To update the original survey for Ebenezer, forty graves needed to be recorded in both the Microsoft Excel spreadsheet and the maps. Instrument setup was located in the same location as the prior location through reference to the field book. The back sight was on the same pipe in the ground used to lock the gate. The prism rod was held to the approximate center of each gravestone on the western side, often at the back of each tablet and the head of each slab gravestone. Angle and distance were recorded for each of the forty graves. A three person crew conducted the study, with one person reading the instrument for angle and distance measurements, one person recording these measurements and another person using the Microsoft Excel spreadsheet to match the number associated with each burial when locating the prism rod. It took about one hour to complete the update to the survey. The measurements were again loaded into ProCogo for adding to the previous map. The total time for the total station survey was about twenty hours, including the recording of the headstone data.

The LiDAR scan was conducted using a Leica C10 scanner. The scan plan was established on site, determining that the best approach was a wide zig-zag style pattern. On the hand drawn scan plan a ‘SP’ indicates a scan position, a ‘T’ followed by a number

indicates a target position, a ‘T’ followed by a number then a ‘u’ or a ‘l’ indicates a twin target (Figure 19). Some graves that were close to a target position were marked by the name or initial of the family plot.

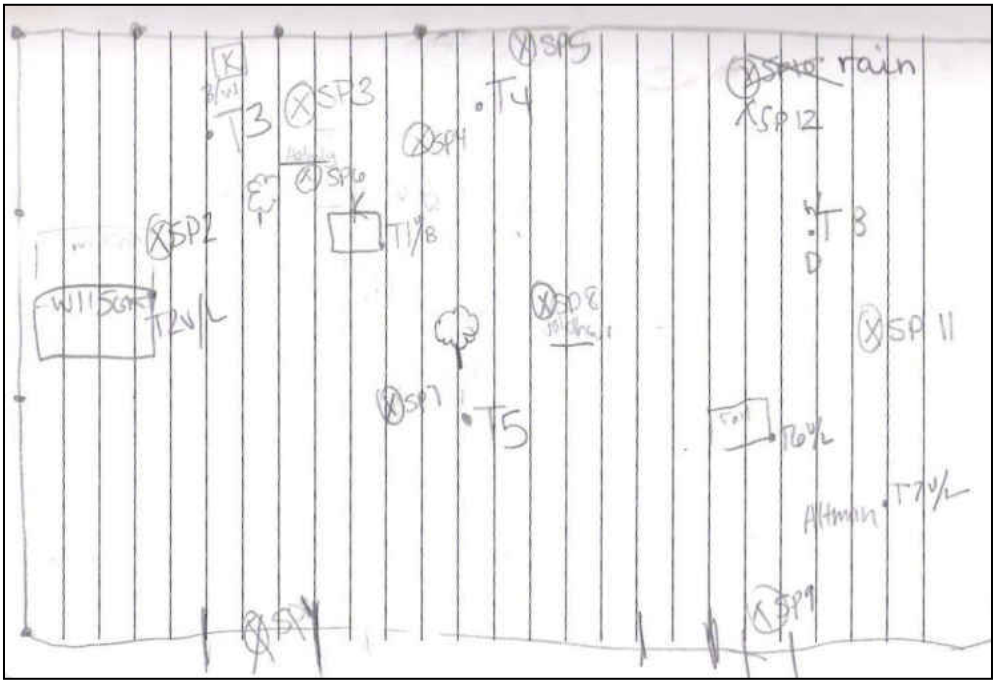


Figure 19: Hand Drawn Scan Plan for Ebenezer Cemetery

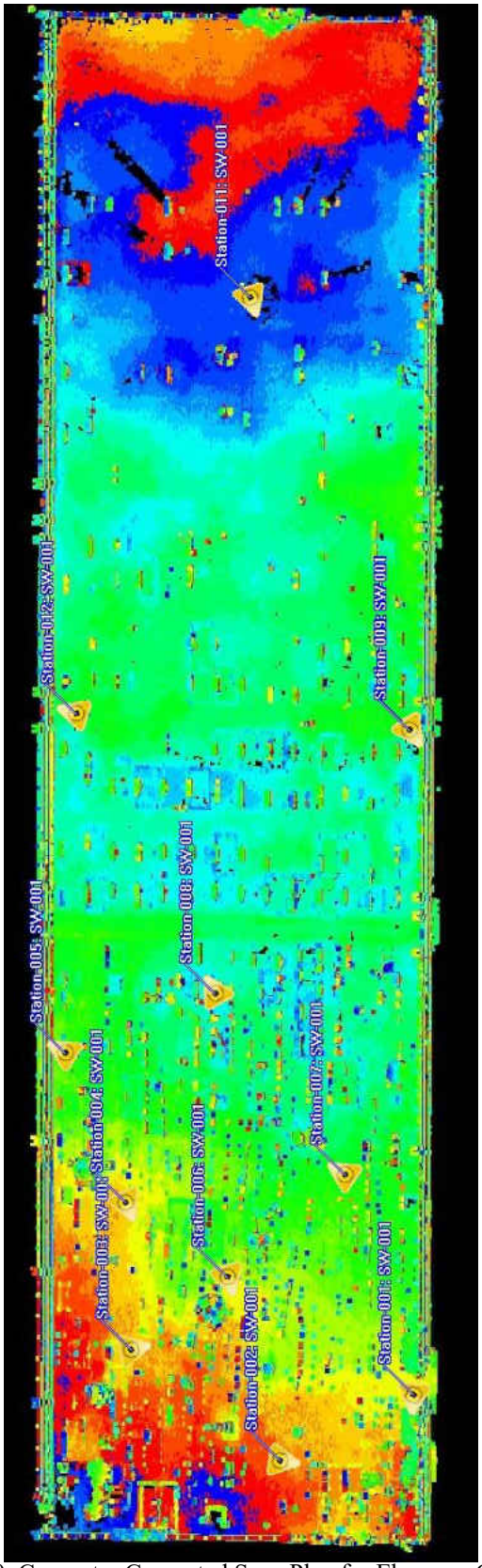


Figure 20: Computer Generated Scan Plan for Ebenezer Cemetery

The Leica C10 scanner and five target poles, consisting of two twin targets, two HD blue and white and one black and white target were set up. A Real Time Kinematic (RTK) GPS unit, which was used to tie GPS coordinates in with the final model, was also set up. Three target locations (T1 u/l, T2 u/l, and T6 u/l) were tied to GPS coordinates, each a twin target. A twin target was chosen because of the lessened error. Had a non-twin target been used, when the target was rotated it would not be as true to the recorded coordinate. Since it was a twin target, the target on the bottom was mostly true to the coordinates. These were the only targets that had to be placed on a cornerstone to allow for stability and an exact location on which the target could be placed. Other targets and the scanner were placed in relatively open areas and never on top of any headstones. The data from the LiDAR scan was stored on the scanner until it could be retrieved. Once retrieved, the files were placed on an external hard drive to transport to a computer equipped with Cyclone and Cyclone II software for post-processing.

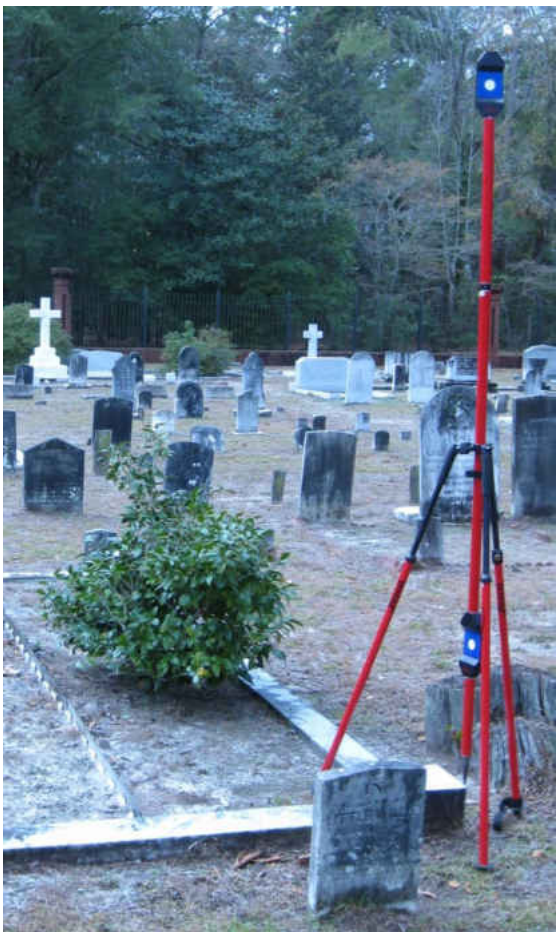


Figure 21: Leica Twin Target

Figure 22: Leica C10 LiDAR Scanner

The scans were conducted on low resolution due to the amount of overlap per scan. Each scan had a one hundred meter range and a 360x270 degree view. Two scans were completed per hour, with a total of eleven completed scans. One additional scan (SP 10) was begun, but was not completed due to the threat of rain. The scan was stopped and the scanner was stored until the skies cleared and allowed for the completion of the final two scans. The entire cemetery scan took five and one-half hours

General scan and post-processing procedures can be found in Appendix A.

CHAPTER 5

ANALYSIS

This study was conducted for the purpose of determining the most comprehensive method of gathering gravestone data and mapping cemeteries with consideration to cost effectiveness, time efficiency, data accuracy and quantity of data. Two cemeteries, at Mont Repose and Ebenezer, were chosen for this study. As of March 17, 2012, a total of ninety-three grave locations had been recorded at Mont Repose and eight hundred and seventy-four at Ebenezer. Three different methods were used at both cemeteries. The methods of survey were a handheld Global Positioning System (GPS), a total station, and Light Detection and Ranging (LiDAR) technology.

Results

Data Acquired from Gravestones

Mont Repose Cemetery has ninety-three gravestones that were surveyed. The earliest marked graves, extending over the first two decades of recorded burials at Mont Repose Cemetery have death dates of 1866 (Appendix B: point 93), 1885 (Appendix B: point 13), and 1886 (Appendix B: point 48). There are places in the cemetery that indicate the presence of unmarked and unrecorded graves due to sunken ground, meaning that these marked graves may not necessarily be the earliest. Three of the graves currently labeled unknown were recorded prior to the time of the first LiDAR scan, but could not be located during the GPS and total station surveys. There is also photographic evidence which indicates that one name which is now partial (Appendix B: Point 71) was intact prior to the first LiDAR scan.

The data that was gathered from the gravestones and recorded into a Microsoft Excel Spreadsheet allowed for the statistical evaluation of different types of information. One evaluation of the data was a sex ratio of those buried in the cemetery based on the names on the headstone. The recorded names were determined to be either male (n=33), female (n=36), or undetermined (n=25). One unknown grave was recorded as female because grave goods in the form of flowers denoted the person as "*Mama*."

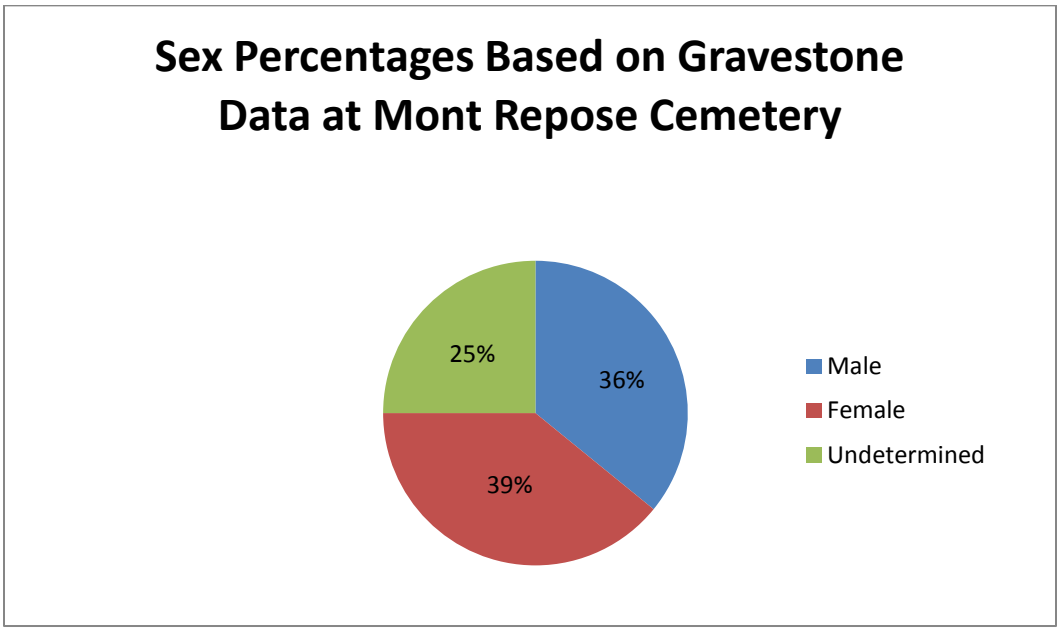


Table 4: Sex Percentages Based on Gravestones at Mont Repose Cemetery

Recorded burial dates were used to track the number of people buried in the cemetery per decade. The earliest burial in the cemetery that information was recorded for occurred in 1866. The next burials occurred in 1885 and 1886 according to the recorded gravestone data. Three marked gravestones denoted burials in the 1910s. In the 1920s, the burials at Mont Repose according to the recorded gravestone data, reached a peak with four burials and begins to decline in the 1930s (n=3), 1940s (n=1) and 1950s (n=1). In the 1960s, an increase begins again with four burials, followed by nine in the

1970s, and continuing to increase into the 2000s with fifteen burials. In the past two years, only four burials have occurred. Twenty graves had no burial date on them. The average number of burials per decade is 4.9.

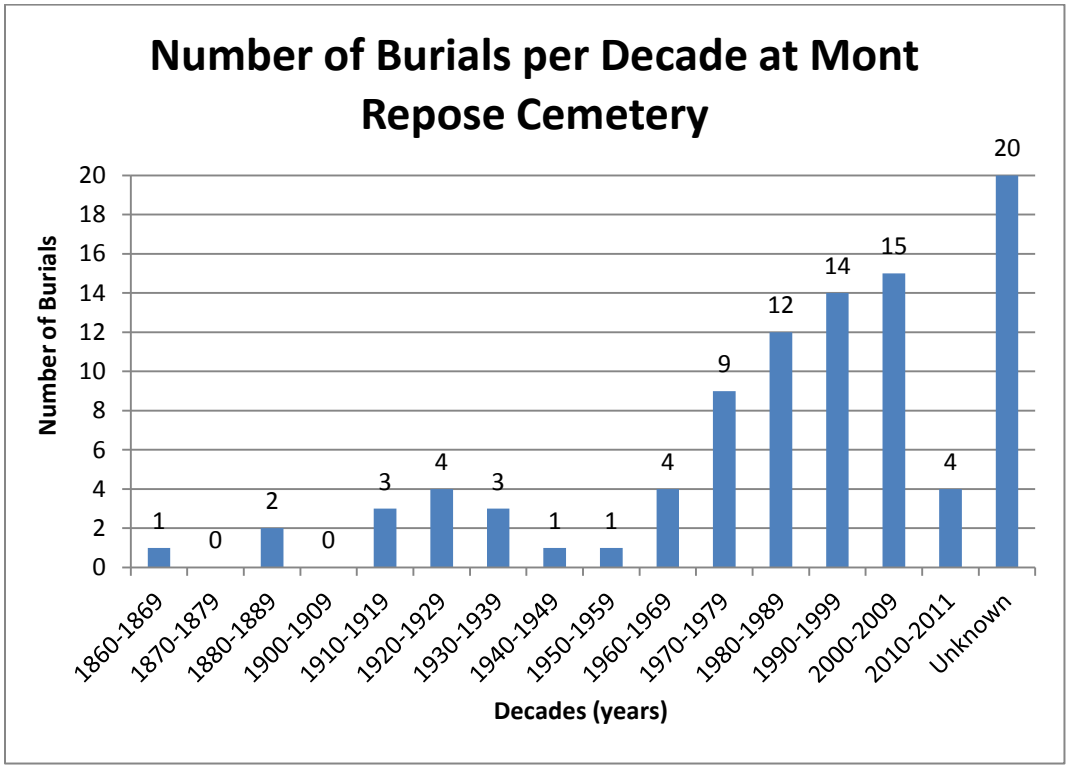


Table 5: Number of People Buried per Decade at Mont Repose

Other data interpretation related to age at the time of death. Of the total ninety-three graves, seventy had enough information to determine the age at death. The average age of death was 56.5 years. The most common age of death was eighty-three years old (n=4), followed by forty-four (n=3), fifty-two (n=3), fifty-three (n=3), and seventy-one (n=3) years old. The largest range of death ages was 50-59 years old (n=12). The next largest was 70-79 years old (n=11), then 60-69 (n=10) and 80-89 (n=10) years old. The smallest set of ages was 10-19 (n=1) and 90-99 (n=3) years old. Thirty-three were unable to be determined by either lack of birth date, lack of death date, or both.

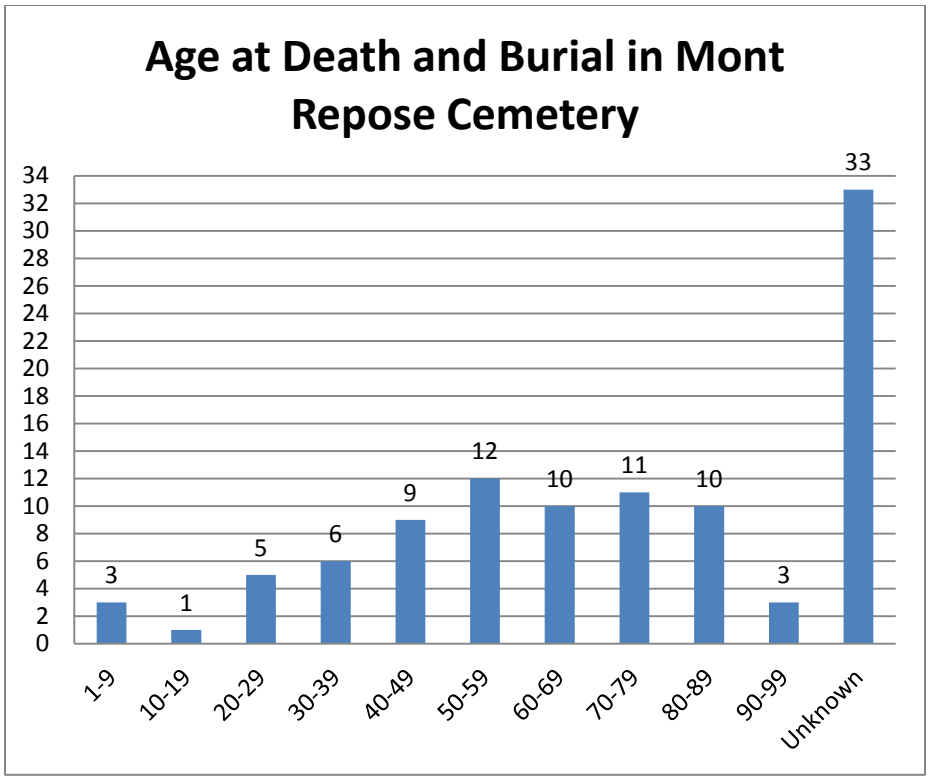


Table 6: Age at Death and Burials in Mont Repose Cemetery

The recorded gravestone information can be used in conjunction with the map to determine the presence of family groupings in the cemetery. This figure does not take into account the larger extended relationships within this cemetery, and includes only the relationships that could be identified from data in the Microsoft Excel spreadsheet (Figure 23 and Figure 24). These relationships can be seen through the occurrence of burials near each other and the sharing of a last name. Many of the groupings consisted of only two (Pollings, King, Osgood, Frazier, Newton) or three (Rhett, Deloach, Mitchell) burials with common last names. Frazier and Fraisur were determined to be from the same family because the gravestone information indicates that Dafnie (Appendix B: Point 77) was the wife of Joe (Appendix B: point 76). There are two Wade family groupings, but they are not next to each other, and have a total of seven burials. The largest family grouping buried together is that of Mike and Deloach, both containing five burials. Some burials have the last name, but they were not located close enough to indicate in this image, such as the Busbys (Appendix B: Points 1 and 12), the Fergusons (Appendix B: point 19 and 80), and Johnsons (Appendix B: Points 26 and 37). Others were not included with their family groups because they were located too far away, such as one Frazier (Appendix B: point 72), two Grahams (Appendix B: point 18 and 90) and two Rhetts (Appendix B: point 35 and 89)

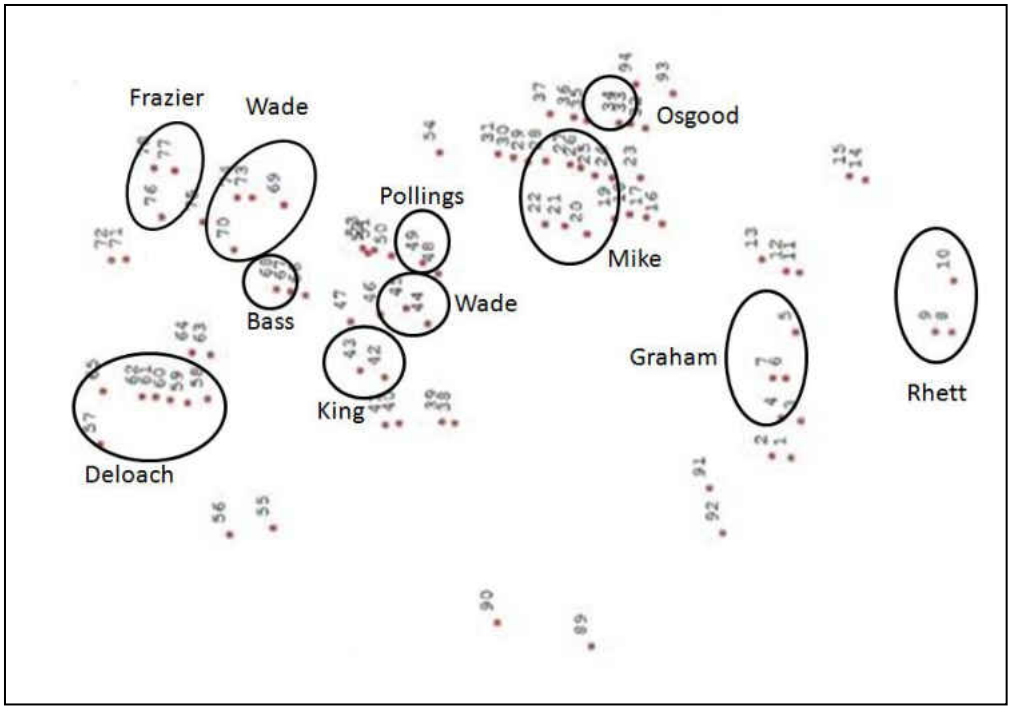


Figure 23: Mont Repose Family Groupings Based on Name (a)

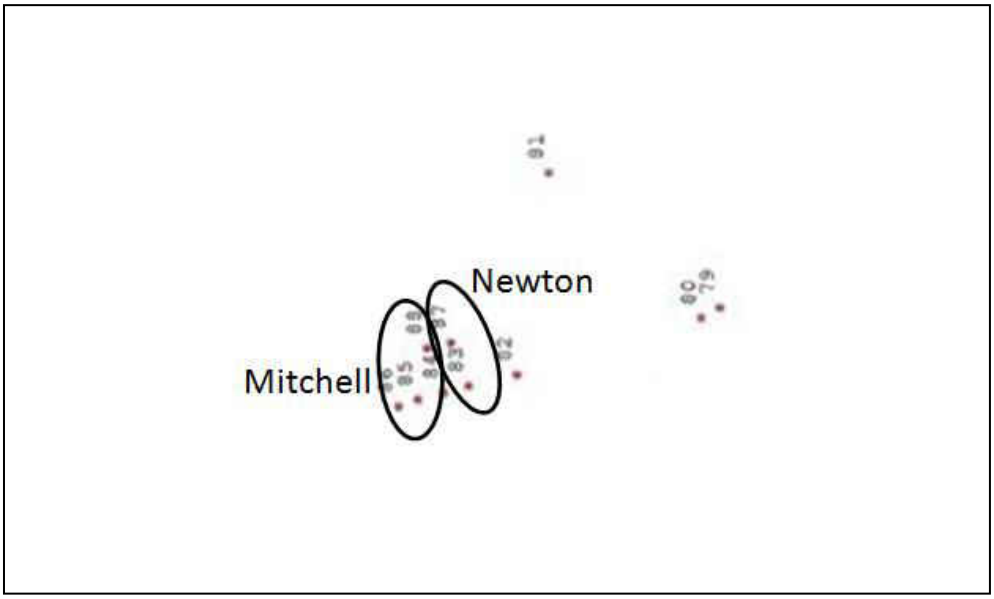


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Figure 24: Mont Repose Family Groupings Based on Name (b)

Ebenezer Cemetery has eight hundred and seventy-four recorded markers that were surveyed. Six of these markers were memorial markers for the "Salzburgers and Rev. John Martin Bolzius and Rev. Israel Christian Gronau" (Appendix C: point 321) and an African American Monument (Appendix C: point 762-766). The earliest marked graves, extending over the first decade of recorded burials at Ebenezer Cemetery, have death dates of 1813 (Appendix C: point 205), 1816 (Appendix C: point 345), and 1817 (Appendix C: point 161). A 1951 Church record of burials indicates that thirty-four more burials were located in the cemetery at one time, but no longer remain today. In addition to this, wooden markers may have been placed earlier making the recorded burials not the earliest. One grave (Appendix C: point 601) that was recorded in the initial 2003 survey could not be located during the 2012 GPS survey, however, burial location could be determined based on the 2003 survey map.

The data that was gathered from the gravestones and recorded into a Microsoft Excel spreadsheet allowed much data to be evaluated. One evaluation of the data was a sex ratio of those buried in Ebenezer based on the names and gravestone information. The recorded names were determined to be either male (n=387), female (n=364), or undetermined (n=116). The six memorial markers (Appendix C: points 361 and 762-766) were not included in the total count (n=875) as they did not constitute a specific burial location with a specific sex.

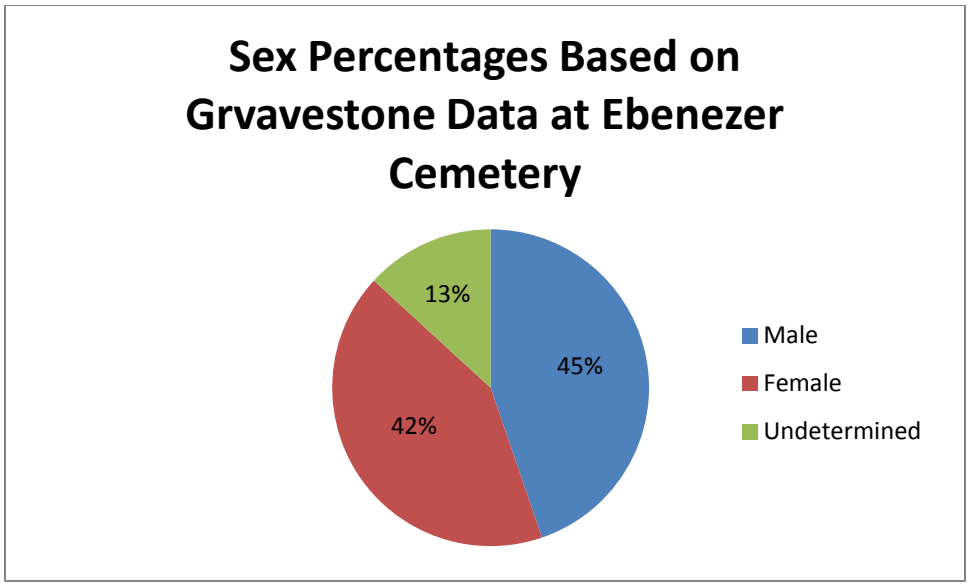

Table 7: Sex Percentages Based on Gravestone Data at Ebenezer Cemetery

The burial dates recorded were used to track the number of burials per decade from 1813 to 2011. The earliest marked gravestone located in the cemetery was dated 1813. The next two recorded burials occurred in 1816 and 1817. There is a small upward trend in burials from the 1820s (n=7) to the 1840s (n=16). However, in the next ten years, the number of burials more than doubles in the 1850s (n=38). The number of burials reaches its peak in the 1890s with a total of fifty-seven burials. For the three following years a steep drop occurs with only thirty-eight burials in the 1900s, forty-seven burials in the 1910s and forty-one burials in the 1920s. The next peak occurs in the 1960s (n=55). After this, however, the burials tend to level out. Currently, only nine burials have occurred in the cemetery since 2010. Ninety-two graves had no burial dates on them. The average number of burials per decade at Ebenezer Cemetery is 37.3. The six memorial markers (Appendix C: points 361 and 762-766) were not included in the total count (n=875) as they did not constitute an individual's burial location at a specific time.

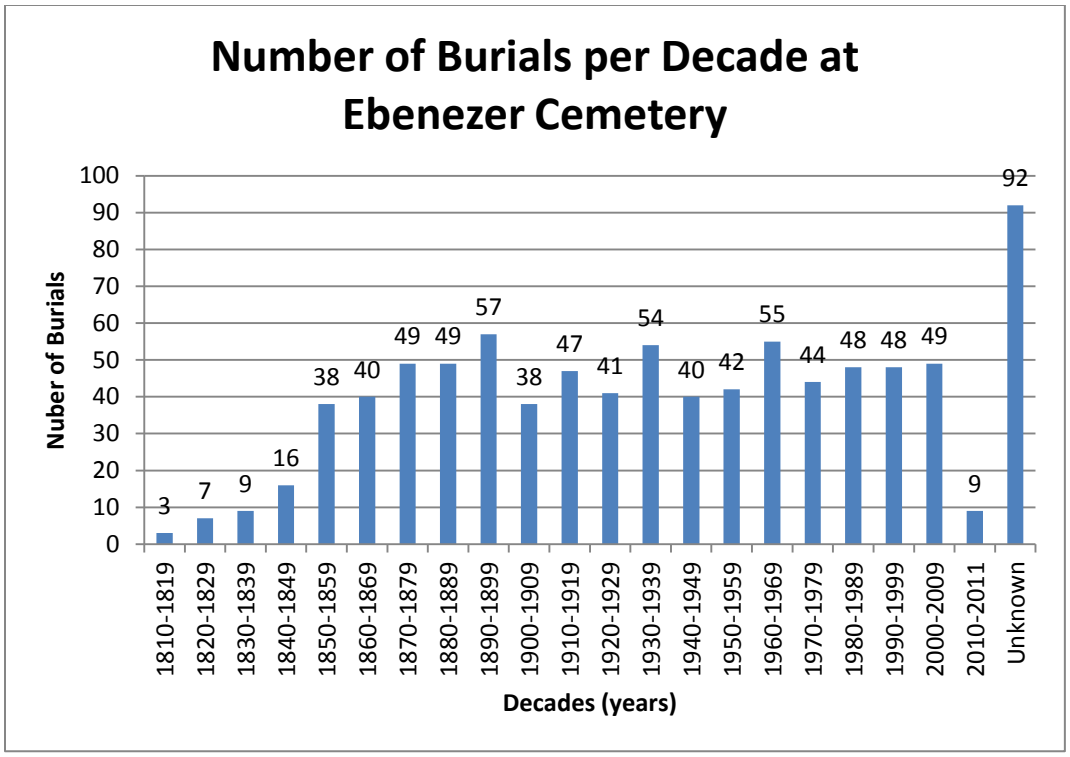

Table 8: Number of People Buried per Decade at Ebenezer Cemetery

Other significant data gathered from the gravestones is the age at the time of death. The six memorial markers (Appendix C: points 361 and 762-766) were not included in the total count (n=875) as they did not constitute an individual's burial location or an age at the time of internment. Of the total eight hundred and seventy-four graves, 90.5% of the graves had sufficient information to allow determining age at the time of death and internment. The average age of death is 52.7 years old. Of the total recorded graves (n=875), burials under the age of nine years old make up 5.5%. The youngest age at death is made up of infants less than one year of age. The oldest age at death was ninety-nine years old (Appendix C: point 468). The largest set of ages was 70-79 (n=158), followed by 80-89 (n=141) and 60-69 (n=118). The smallest sets of age range was 90-99 (n=21) and 10-19 (n=28).

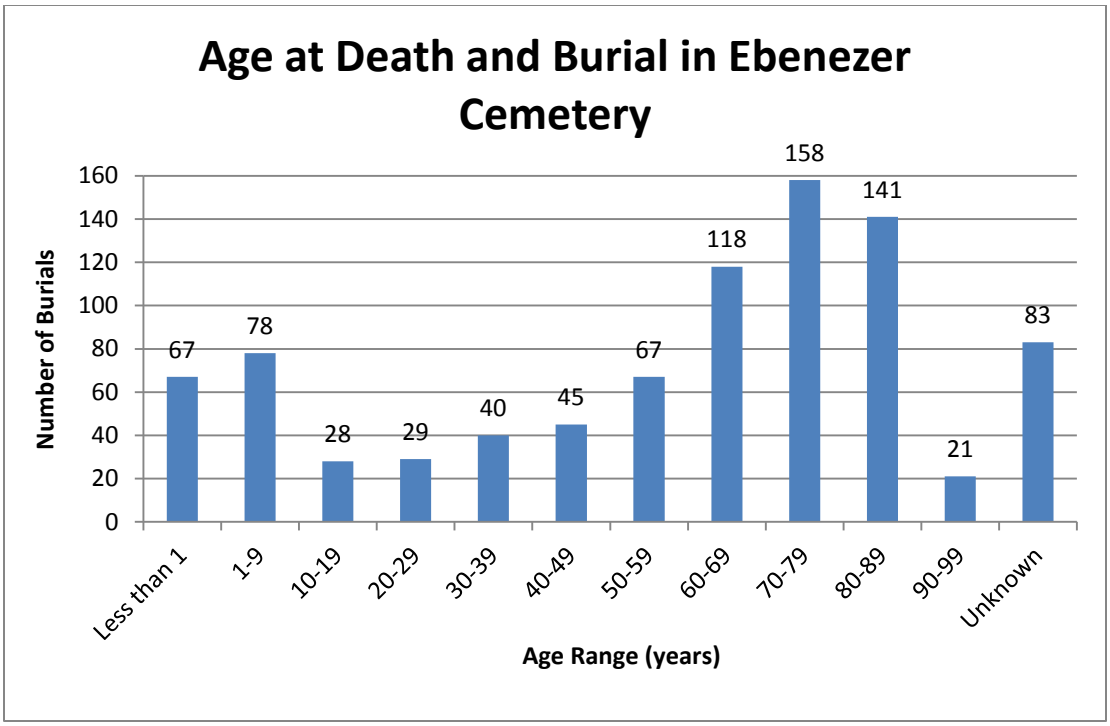

Table 9: Age at Death and Burial in Ebenezer Cemetery

Because of the availability of multiple types of gravestone data, the age category of 90-99 years old (n=21), allows for the analysis of sex. When sex is analyzed, one can see that of the twenty-one 90-99 year olds, 71% are females (n=15), 23% are males (n=5) and one cannot be assigned a sex based on the gravestone information.

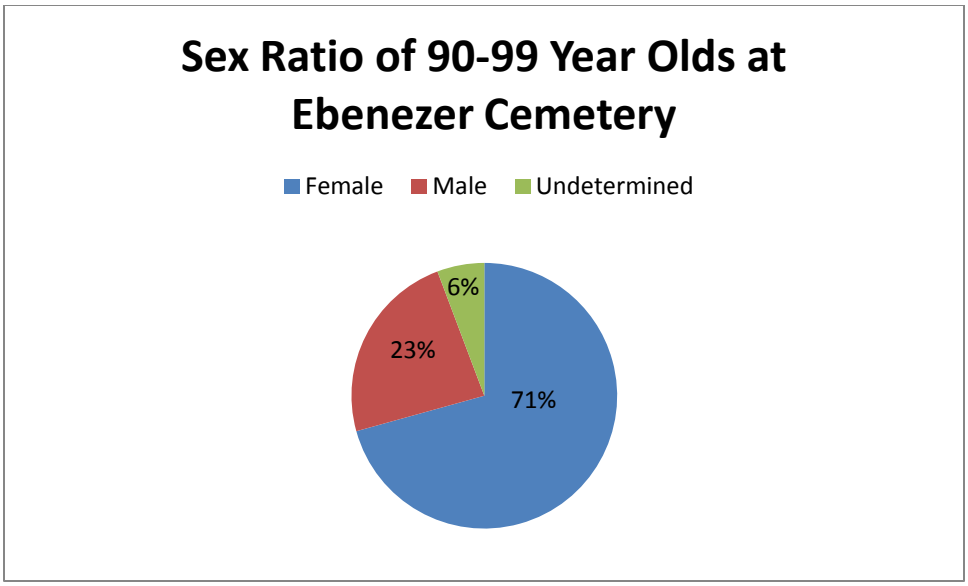

Table 10: Sex Ratio of 90-99 Year Olds at Ebenezer Cemetery

Additional data determined from the recorded gravestones was used in association with the created maps to identify the presence of family groupings in the cemetery. These groupings are based solely on the relationships that can be seen in the last name, but not taking into account marriage between families. Family relationships are indicated by burials that share a last name and are buried in a similar area. Based on the size of this cemetery, showing all of the family groupings in this cemetery was not feasible, but a representative fifty year period from 1813-1863 is illustrated in Figures 25. The groupings were made up of as few as two (Armstrong, Stanton, Biddenback) or three (Gnann, Weitman, Bergman, Bevill) burials, and as many as seven individuals (Metzger, Gnann)

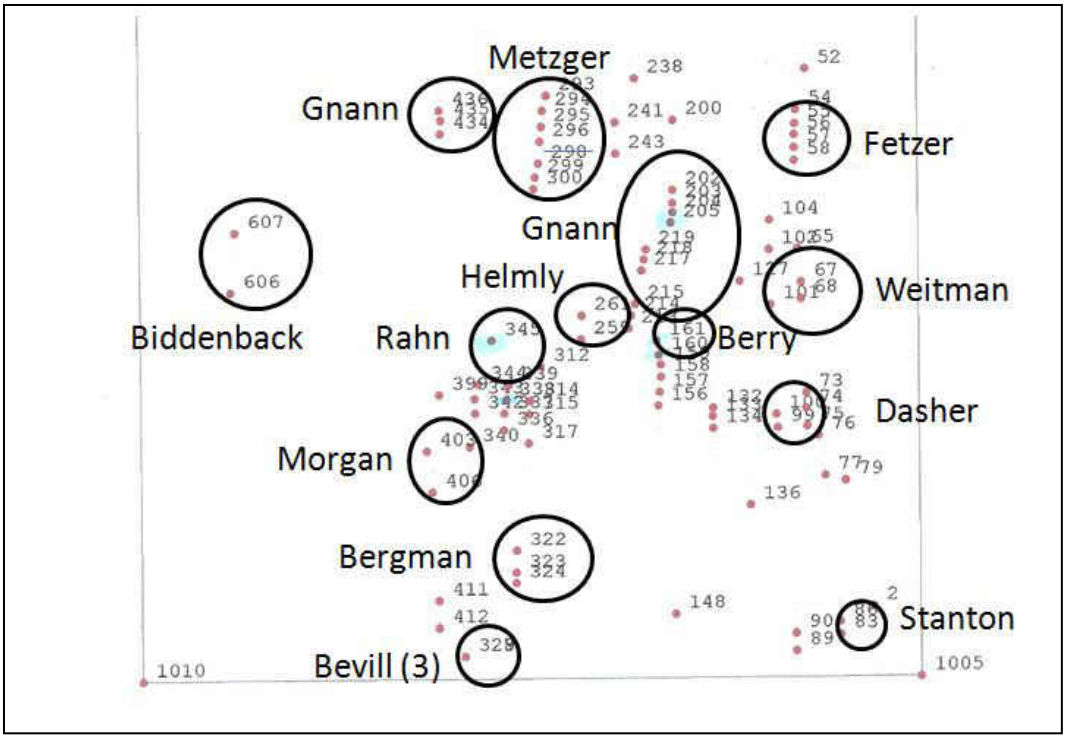

Figure 25: Ebenezer Family Grouping Based on Names (Burials 1813-1863)

Mapping and Data Accuracy

At Mont Repose Cemetery, a map was created in ProCogo for the handheld GPS and total station survey techniques. Each map has a dot that marks the location of a gravestone surveyed. Each dot is correlated with a number that is associated with the names and other gravestone data recorded in the Microsoft Excel spreadsheet. Each of these maps can be compared to determine the results of each method. As is seen in Figure 26, the map created by handheld GPS, points are located in the proper area, but each cluster of graves is significantly close together.

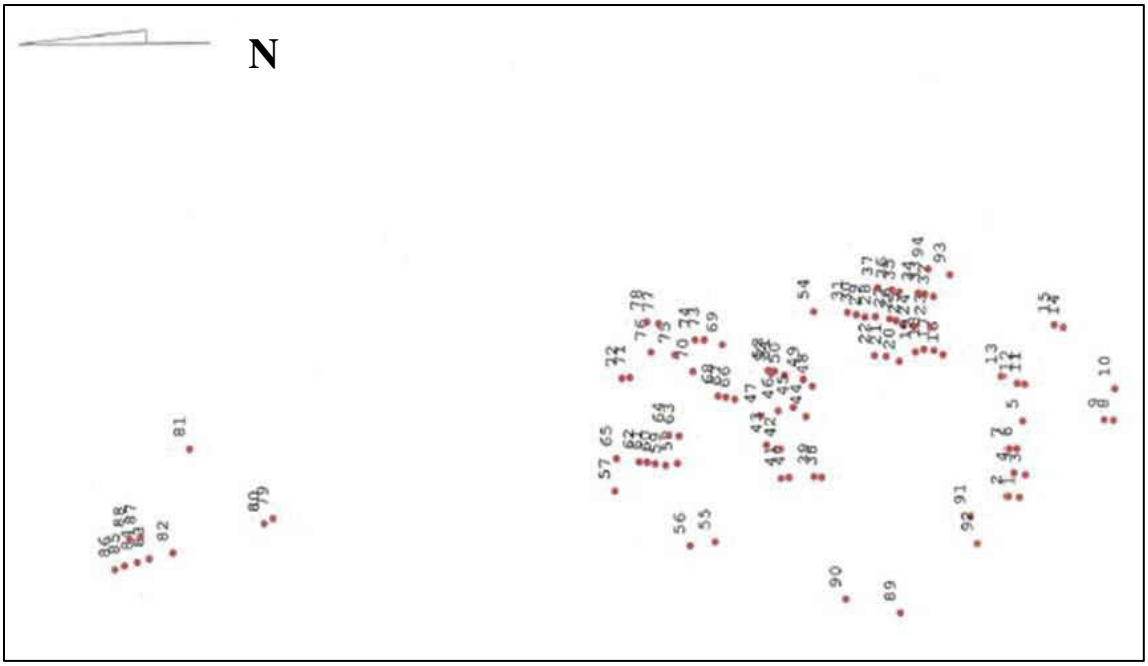

Figure 26: Mont Repose GPS ProCogo Map

When compared to the total station map, the closeness of each cluster of graves becomes even more apparent.

Figure 27: Mont Repose Total Station ProCogo Map

Next a LiDAR scan was conducted at Mont Repose. This scan picked up much of the topography of the land. The trees were removed in Cyclone to allow a better view of

the cemetery, but stumps still remain. Some of the gravestones that can be seen in this view are located within the white circles in Figures 28 and 29. It is not possible to see the slab gravestones, and this is a result of the condition of the cemetery when the survey data was collected.

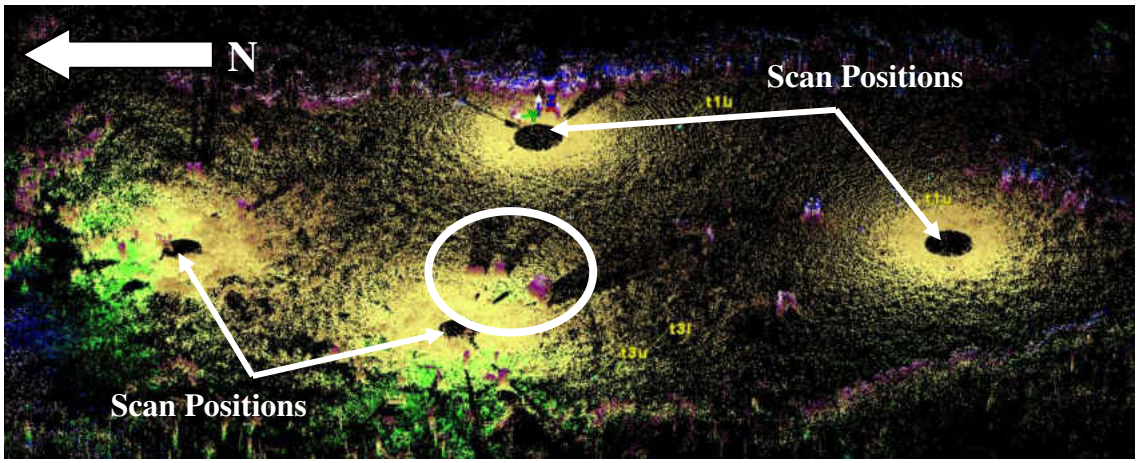

Figure 28: Mont Repose LiDAR Scan


Figure 29: Mont Repose Cemetery LiDAR Scan with Gravestones

At Ebenezer, the same mapping techniques were used. Figure 30 provides an image of the map produced by the handheld GPS survey. The numbers were not included on this image to allow a better comparison of the location of each grave. On this figure,

one can gather a general idea of where the graves are located, but not to the same extent as seen on the total station map.

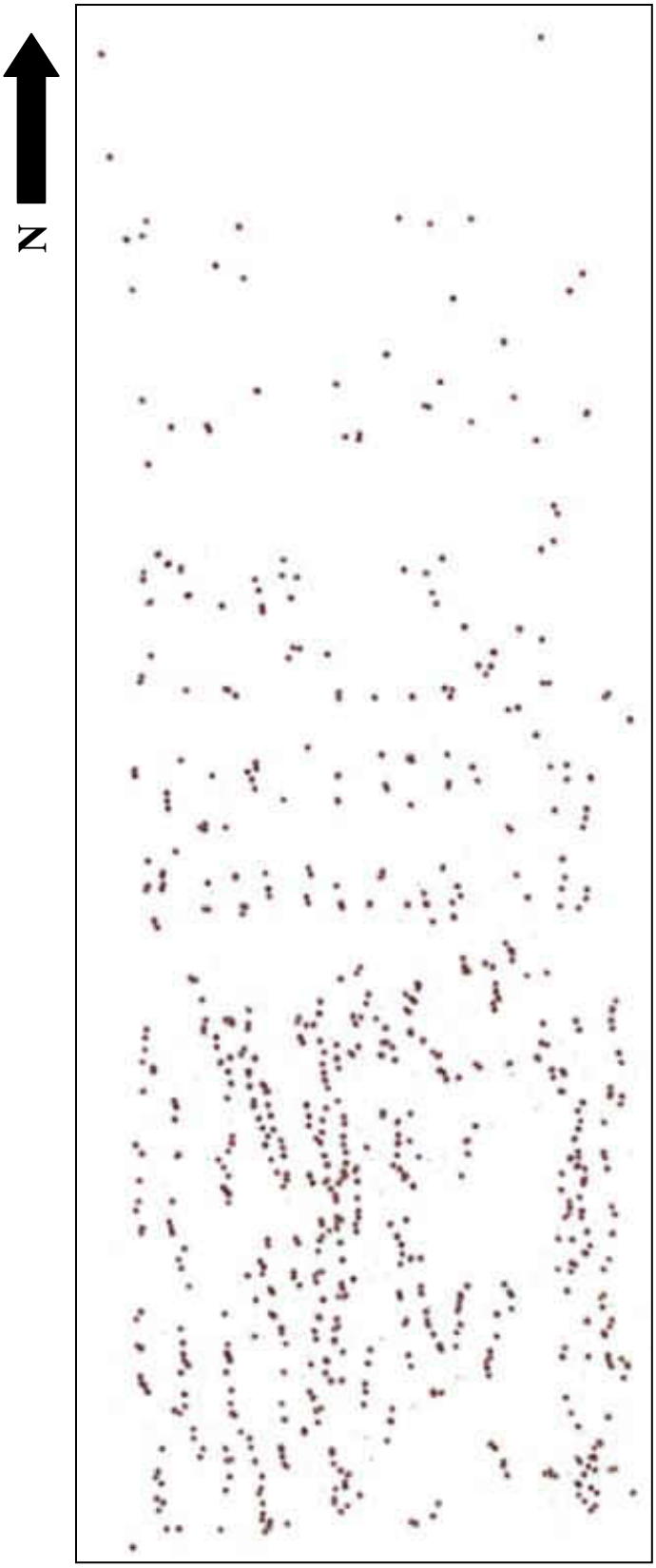

Figure 30: Ebenezer Cemetery Handheld GPS ProCogo Map

When compared, the straight and orderly lines that can be seen in the total station map (Figure 31) are almost non-existent on the handheld GPS map. The points appear to be in a poorly ordered cluttered pattern. Ebenezer cemetery is laid out in a very straight and linear manner, although it has a segmented organization, which is emphasized in the total station map (Weitman, 2003).

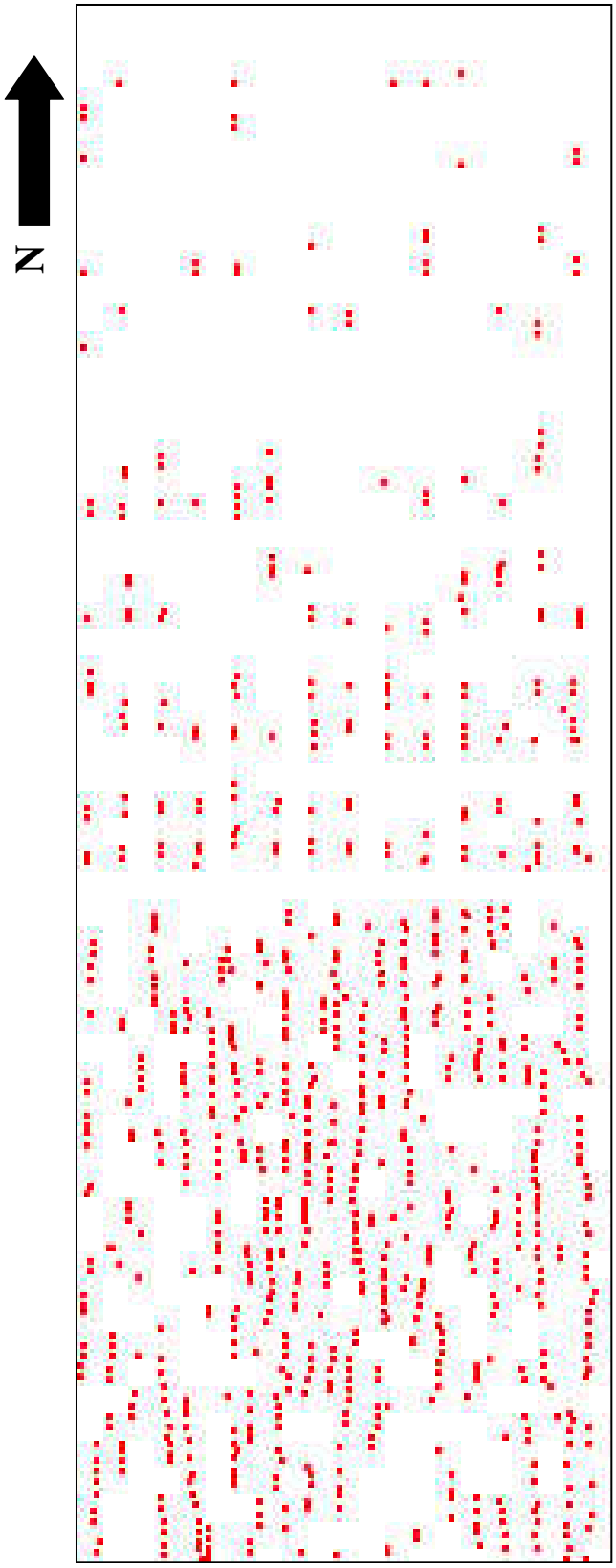

Figure 31: Ebenezer Cemetery Total Station ProCogo Map

The LiDAR map, which was created in Cyclone, further emphasizes the linear nature of Ebenezer and corresponds with the total station map more so than the handheld GPS map. The colors used indicate elevation.

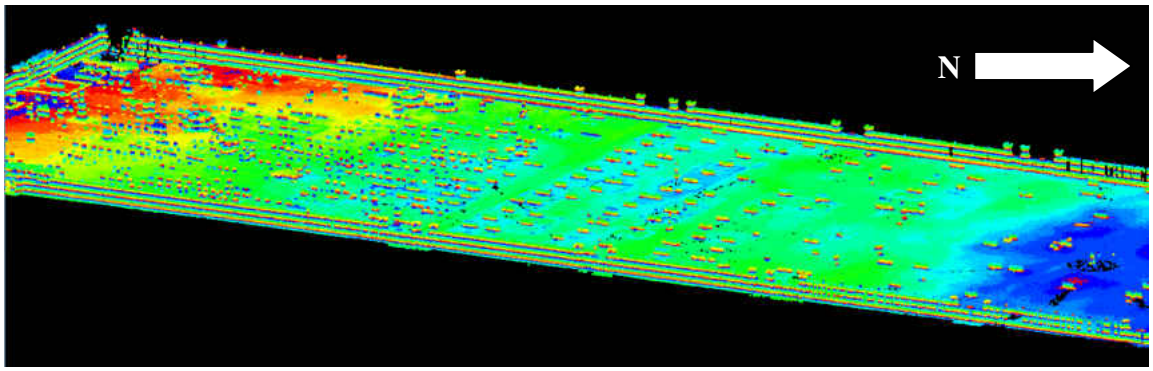

Figure 32: Ebenezer Cemetery LiDAR Scan

As seen in the previous figures (26-32), some of the processed maps presented more consistent map data than others. Since the total station had been done previously and was known to be within three centimeters accuracy, the accuracy of the handheld GPS was compared to it. The handheld GPS has about a three to five meter accuracy which is not a uniform deviation, but rather a deviation per point marked. The accuracy for each of the LiDAR scans was corrected by minimizing the error to be .003 meters. Since it was known that highly accurate images would be produced as a near-exact three dimensional (3D) model of the cemetery, the accuracy of each LiDAR scan was based on the legibility of the writing on the gravestones.

Quantity of Data

The data collected was deendent upon the type of survey equipment used. With both the handheld GPS and total station, it was expected that one would have to collect headstone data, complete a scan and create a map. On the handheld GPS map, an approximate location is given, rather than the highly accurate gravestone locations given by the total station. If the handheld GPS or total station is used, there is no image data.

However, with the gravestone information, this data can be coordinated with the maps produced to provide a comprehensive 'picture' of the cemetery.

If the LiDAR is used, one can collect a large amount of data to create a 3D model of the cemetery and the topography, but this image is lacking in gravestone information. With the LiDAR, it was difficult to locate the slab gravestones in Mont Repose cemetery because the LiDAR cannot scan through thick grass. At Ebenezer, bushes were growing over or near some of the gravestones and they were obscured in the final LiDAR scan image. At Ebenezer, relocating the scanner to an additional location could possibly solve this problem, but at Mont Repose, it is likely the issues would remain.

Time Efficiency

The first step in the survey of each cemetery was to record the data from the gravestones. This included recording, if available, first, last, and middle names, birth month, day and year, death month, day, and year, and any epigraphs, and entering this information into Microsoft Excel so that it could be sorted and evaluated. At Mont Repose this process took five man hours. At Ebenezer this process took nine and one half man hours to record eight hundred and thirty-four graves as a part of the initial study. The update of this survey, which recorded the information of forty gravestones, took about two hours, including time for reviewing previous information. For both Mont Repose and Ebenezer, recording of gravestone information for the LiDAR scan was deemed unnecessary at the time because this study worked on the assumption that the LiDAR would collect headstone data in addition to mapping.

The next step was to conduct a handheld GPS survey. The handheld GPS survey at Mont Repose took two hours, meaning about one grave was marked per minute. The

handheld GPS survey at Ebenezer took four and one half hours. About three graves were marked per minute.

A total station survey was the next technology used. The survey at Mont Repose took about two and one half hours, with about one and a half graves recorded per minute. At Ebenezer, the initial survey of eight hundred and thirty-four gravestones took about twenty hours, resulting in one and a half graves recorded in one minute. The update of the total station survey took about two hours. This resulted in two and a half graves recorded per minute.

The LiDAR scans were completed in two and one half hours at Mont Repose, which would represent about one and a half graves surveyed per minute. At Ebenezer the scan took five and one half hours. This would average almost three graves scanned per minute. With the LiDAR, however, graves were not surveyed individually because the technology collects a large number of gravestones at once rather than recording gravestones one by one.

Finally, post-processing of the data took place. For the handheld GPS used at both Mont Repose and Ebenezer, downloading the data into Garmin BaseCamp software took fifteen minutes and converting from geographic coordinates to the Corpscon software took thirty minutes. Processing the converted GPS data with ProCogo software in order to produce a cemetery map took fifteen minutes for Mont Repose and four and one half hours for Ebenezer, due to the amount of the data. The total station survey of Mont Repose took about one and one half hour. The original total station survey of eight hundred and thirty-four graves at Ebenezer took four and one half hours to process in ProCogo, which included entering the measurements, which was not necessary in the

GPS processing. The total station update of Ebenezer required fifteen minutes to process the data in ProCogo, including entering measurements. Using Cyclone to post-process the LiDAR scan of Mont Repose took about one and one half hours. To do the same with the LiDAR scan of Ebenezer took about two hours.

The total time required to conduct a survey and to process survey data to produce a map of Mont Repose Cemetery using handheld GPS is approximately eight hours. Using the total station, a survey of Mont Repose took eight hours. The LiDAR scan of Mont Repose took four hours.

The total time required to conduct a survey of Ebenezer Cemetery using handheld GPS is twenty-one hours and fifteen minutes. Using the total station, the initial survey of Ebenezer took thirty-four hours, with the update requiring four hours and fifteen minutes. The LiDAR scan of Ebenezer took a total of seven and one half hours.

Mont Repose Cemetery			
Technology	**GPS**	**Total Station**	**LiDAR**
Gravestones Surveyed	93	93	93
Collect and Record Gravestone Data (hours)	5 hours	5 hours	N/A
Collect Data with Technology (hours)	2 hours	2.5 hours	2.5 hours
Process/Download Data (hours)	1hour	0.5 hour	1.5 hours
Total Amount of Time Required (hours)	8 hours	8 hours	4 hours

Table 11: Time Comparison of Survey Methods for Mont Repose Cemetery

Ebenezer Cemetery			
Technology	**GPS**	**Total Station**	**LiDAR**
Gravestones Surveyed	874	874	874
Collect and Record Gravestone Data (hours)	11.5 hours	11.5 hours	N/A
Collect Data with Technology (hours)	4.5 hours	22 hours	5.5 hours
Process/Download Data (hours)	5.25 hour	4.75 hours	2 hours
Total Amount of Time Required (hours)	21.25 hours	38.25 hours	7.5 hours

Table 12: Time Comparison of Survey Methods for Ebenezer Cemetery

Cost Effectiveness

Another aspect of this cemetery survey that was taken into account was the cost effectiveness of each method used. A cost comparison of the three methods for man hours, rental cost, purchase cost, processing software cost and training cost was made. The total number of man hours for the handheld GPS technology was eight for Mont Repose and twenty-one and one qaurter hours for Ebenezer. Because of purchasing availability, rental is not included. To purchase this technology it costs from $350 to $600 depending on the make and model. For this project, BaseCamp and Corpscon software were used to retrieve the data from the handheld GPS and convert it to a file format that could be used be used in ProCogo. Both BaseCamp and Corpscon can be downloaded for free, while ProCogo costs approximately $200. Handheld GPS is now a fairly standard technology that most people can use with little to no training beyond using the operation manual.

The total number of man hours for the total station technology was eight for Mont Repose and thirty eight and one quarter hours for Ebenezer. Rental of a total station costs $100 to $300 per day. Purchas of this technology costs from $3,000 to $7,500 depending on the make and model. For this project, only ProCogo, which costs approximately $200, was needed to process the data and create a map. Because a total station is a surveying technology, knowledge of basic surveying issues is required. Total station technology and the ProCogo software used to process the data is also specialized. However, the results provide sufficient merits to support the learning of the technology.

The total number of man hours for the LiDAR technology was four for Mont Repose and seven and one half hours for Ebenezer. Rental of a LiDAR costs approximately $5,000 to $9,000 per day. To purchase this equipment costs range from $70,000 to $150,000. For this project, only Cyclone and Cyclone II computer programs were needed to process the data. These programs cost $4,000 to $5,000. LiDAR is a newer type of technology that requires extensive training and specialized knowledge to scan and process the data to its full potential. Because of this, not only is basic surveying knowledge necessary, but product-sponsored training is needed to use the equipment and is approximately $3,500 for one week of training.

Cost Comparison of Survey Techniques				
Technology		**GPS**	**Total Station**	**LiDAR**
Man Hours	*Mont Repose*	8 hours	8 hours	4 hours
	Ebenezer	21.25 hours	38.25 hours	7.5 hours
Technology Rental		n/a	$100-300/day	$5,000-$9,000
Technology Purchase		$350-650	$3,000-7,500	$70,000-150,000
Software Purchase		• *ProCogo* - $200 • *BaseCamp/Corpscon* - Free Download	• *ProCogo* - $200	• *Cyclone or Cyclone II* - $4,000-5,000
Training Cost		• n/a	• Basic Surveying Knowledge Required	• Basic Surveying Knowledge Required • 1 Week Company Sponsored Training - $3,500

Table 13: Cost Comparison of Survey Techniques

The handheld GPS, total station and LiDAR can all be conducted with one person, but it is much easier to conduct them with two or three people. For the handheld GPS it is better if one person can collect the point while the other person associates the number with the recorded information. With the total station, two people can also get the job done if the gravestones already have corresponding numbers, but if not, three is the best number

of people for this project. One person can operate and record the information from the total station, one person can hold the prism and the third can match and check data from the headstones. With the LiDAR, having two people makes the transport and set-up of the machine and targets easier. The need for addition man power may add to an additional cost.

Finally, to operate the LiDAR to its full potential, one has to have a great deal of technological knowledge. To integrate this scan with handheld GPS coordinates, it is

necessary to have a Real Time Kinematic (RTK) unit, to not only get the handheld GPS points for the site using LiDAR, but also to get specific points for each headstone.

Discussion

Much data can be gleaned about a cemetery without excavation. Solely based on the gravestone data and groupings one can determine demographic data, for a given period of time, the rate of burial, the organizational pattern of the cemetery, and inferences about family relationships that can often be corroborated with additional research. As seen in Tables 4-13 such things as a sex comparison of those buried in cemeteries, the rate of burials in a cemetery over time, and the age at time of death of those buried in the cemetery are all aspects that can lead to a larger picture of the lives of the people who are buried in the cemetery as well as the life of the cemetery itself.

The most obvious difference about the two cemeteries is that they are of different sizes and styles. As a churchyard cemetery, Ebenezer is just under nine and one half times the size of the rural cemetery at Mont Repose. In addition, Ebenezer does not show the effects of harsh weather conditions as does Mont Repose and is regularly maintained by a caretaker employed by the church. There are few trees within the grounds at Ebenezer, and those are live and sturdy, whereas there are many dead trees at Mont Repose, both on the outskirts and inside the grounds. Mont Repose Cemetery extends to the very edge of a swamp area and though there is a fence, it does not serve to keep the animals out. Many of the slab gravestones were missing name plates, two of which were present in September are now missing.

With Mont Repose so highly susceptible to damage, it has almost double the percentage of undetermined sexes (n=25%) than Ebenezer (n=13%). The ratio of male to

female is close, but Mont Repose contains more females (n= 39%) than males (n=36%). Ebenezer has only three percent more males (n=45%) than females (n=42%). It does seem logical that the sex ratio would be close to equal in cemeteries as husbands and wives would generally be buried at the same location.

It is difficult to compare the number of burials per decade because it can be documented that Ebenezer has been in use fifty years prior to the first burial at Mont Repose (Table 5 and Table 8). One trend that can be documented is that the burials at Ebenezer have stayed consistent over time. Mont Repose on the other hand, had few burials prior to the 1970s when a steep increase in burials begins. This could be due in part to the damage to the cemetery by natural forces and those gravestones that have been placed in the last forty years have not suffered any damage. Another reason could be due to lack of access of the family to the cemetery by the owner of Mont Repose plantation at the time.

In analyzing the age ranges of those buried in the cemeteries, Mont Repose appears to be more of a bell curve shape, rather while Ebenezer has a bell curve skewed right. Those that were buried at Mont Repose tend to have had a shorter life span with the peak age range being 50-59 years old (n=12). At Ebenezer, however, the peak age is 70-79 years old (n=158), with 80-89 year old falling close behind (n=141). It is likely that this age at death discrepancy between the two cemeteries has something to do with the population that is buried in each cemetery and/or the geographic location where these populations lived.

As a tool for analyzing the field data from the surveys, ProCogo as a mapping software is extremely useful as it has capabilities for a quick and easy applications and

updates. The technology is not the key factor, but rather the presentation of the data as a comprehensive whole. It allows for an easy connection between the Microsoft Excel spreadsheets by using the same identification numbers in the mapping.

The best evidence for the use of the total station over a handheld GPS is represented by the two maps of Ebenezer. Where the total station map has straight lines and rows that are highly similar to the actual layout of the cemetery, the handheld GPS map appears to have very little evidence of such accurate lines or spacing. The open areas where trees are located are much larger and are not representative of the actual area. The map below has the total station map (red dots) laid over the handheld GPS map in order to demonstrate this lack of accuracy.

Figure 33: Ebenezer Total Station ProCogo Map Overlaid on GPS ProCogo Map

In the ProCogo map of Mont Repose shown below, the total station map has been laid over the handheld GPS map to show the differences in the accuracy of the survey techniques. Point 92 was aligned as the focal point, because this was the known location of the total station which was not moved.

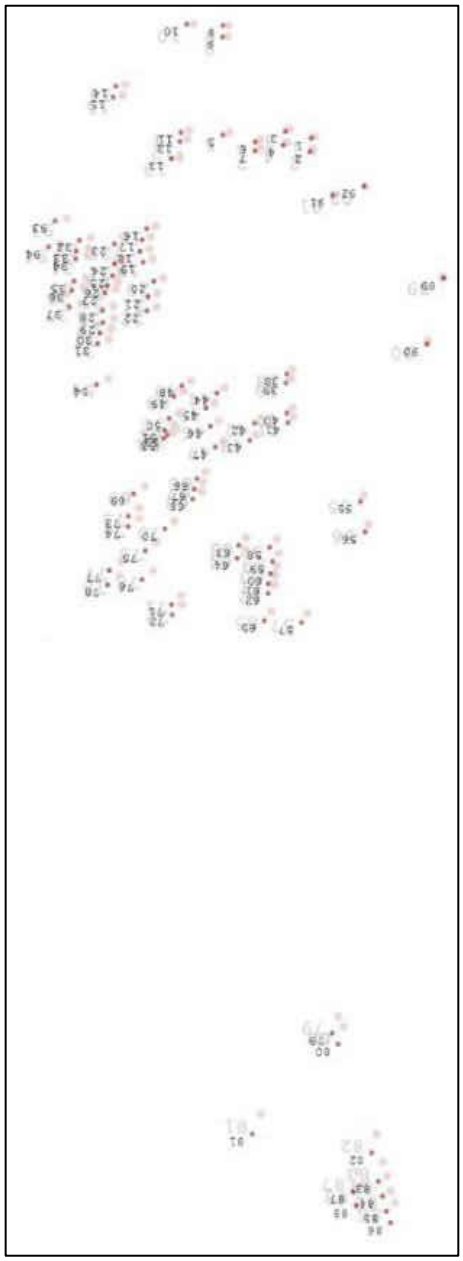

Figure 34: Mont Repose Total Station ProCogo Map Overlaid on GPS ProCogo Map

The largest amount of mapping data was recorded with the LiDAR, but this method, overall, had the least amount of total comprehensive data. This is due in part to the inability of the LiDAR to pick up the writing on the gravestones. The image data, however, is beneficial because it can allow for the interpretation of other information about a particular cemetery, perhaps where other graves may be located due to depressions in the ground as indicated by graduations of color on the image. However, this is also indicative of the limitations of LiDAR. The LiDAR image of Mont Repose is evidence of the need for a well kept cemetery to see the topography of the land. Because of the presence of uncut and overgrown grass, the actual surface of the ground could not be recorded by the scanner. So, despite the fact that a walking survey indicates that there would be changes in elevation on the LiDAR image, it does not show up. Further evidence of this occurs at Ebenezer, where the cemetery had little overgrowth as compared to Mont Repose and clearly illustrates observable changes in elevation on the LiDAR image (Figure 32).

In conjunction with the recorded information in the Microsoft Excel spreadsheets, the total station and handheld GPS yielded the largest amount of statistical data and mapping information. The easiest combination of data and maps to process and read were those recorded with the total station.

The benefits of using LiDAR were that it was the fastest amongst the three methods, it was able to get a large range of gravestones per scan, it has a good field of view and the ability to use it to study topography is good. It also has a very small margin of error and can be integrated with handheld GPS coordinates. Utilizing the data obtained

by the total station survey and ProCogo map, the 3D image produced by the LiDAR was much easier to interpret.

The negative aspects of LiDAR are that is it extremely expensive when compared to the other equipment about ten to twenty times more expensive than a total station and about one hundred to two hundred and thirty times more expensive than a handheld GPS. It may be fast to scan, but it takes a long time to physically move from scan position to scan position and there is a lot involved in processing the data, as well as the knowledge of additional software to do the post-processing. It works very well on large scale objects, like the shape of the larger gravestones or the fence in Ebenezer Cemetery, but it cannot record the writing on the gravestones, which was a hypothesized result, and creates additional time needed due to having to record the gravestone data. The main difficulty with using LiDAR for this project is that it is not designed work on both a macro and micro scale. It can pick up small details when it is close to an object, but this will cause the scan to miss out on the larger picture. When scanning for the larger picture, however, the opposite happens and the small details, like the writing on gravestones, are missed.

There is no single method that is more expedient in all facets than the others, as each method is the same speed or faster than another technology as specific tasks. For instance, at Mont Repose, though gravestone data collection takes the same amount of time for both the total station and handheld GPS, the handheld GPS took the least amount of time to conduct a survey and the total station took the least amount of time to process. At Ebenezer, though the handheld GPS and total station took the same amount of time for data collection, the handheld GPS conducted the survey the quickest, while the LiDAR data processed the quickest.

Several factors should be considered when selecting a method for surveying and mapping a cemetery: availability and cost of equipment and software, knowledge and technical expertise of the equipment and software, personnel required, project purpose and outcome, size and type of cemetery and available time

CHAPTER 6

CONCLUSION

The purpose of this study was to determine the most comprehensive method of gathering gravestone data and mapping cemeteries with consideration to cost effectiveness, time efficiency, data accuracy and quantity of data. Three research questions were posed:

1. What is the best method of surveying different styles of cemeteries that is both time and cost efficient, while collecting the maximum amount of accurate data?
2. What is the best method for gathering data that is applicable to both small cemeteries, such as family cemeteries, and large cemeteries, as represented by municipal and church cemeteries?
3. Can one technology, such as Light Detection and Ranging (LiDAR) technology, effectively streamline the process, from gathering all headstone data to mapping the cemetery?

In this study much data was collected from the gravestones in both the Mont Repose and Ebenezer cemeteries providing a large amount of information for analysis and interpretation about the cemetery and those buried within it. The importance of obtaining and preserving the information that is written on gravestones and mapping locations of graves before they are worn away or the gravestone is destroyed became evident as this study progressed. In looking for the best method of surveying different styles of cemeteries that is both time and cost efficient, while collecting the maximum amount of accurate data, it was determined that although LiDAR is the fastest method of conducting a cemetery survey to create a map, it is unable to make the information from

the gravestones legible in the computer generated scan. This requires additional time to record the gravestone data. As a result, this survey method is not cost efficient or time effective for the amount of the data that was collected. The handheld Global Positioning System (GPS) survey collected more readily usable data than the LiDAR scan, but accuracy of the survey was an issue. The total station scan was not as easy to conduct as the handheld GPS, but it was significantly more accurate, and was easier to operate than the LiDAR.

Many smaller cemeteries are not kept up like larger ones that are cared for by a church, city or private owner. Often times there are fallen trees and uncared for grass and care is on a volunteer basis, whereas there are outside funds to hire caretakers to tend larger cemeteries. This upkeep affected the LiDAR scans, but neither the handheld GPS or total station. In response to the second research question pertaining to the best method for gathering data that is applicable to both small cemeteries, like family cemeteries, and large cemeteries, like municipal and church cemeteries, LiDAR was not very efficient on the smaller cemeteries, but was very easy to use in larger, well kept cemeteries like Ebenezer. Both the total station and handheld GPS worked as well in the larger cemeteries as they did in the smaller.

The LiDAR scan did better at Ebenezer as opposed to Mont Repose because the grounds were tended better and had fewer obstructions. The LiDAR scan did poorly at Mont Repose because those grounds were not as well tended and had more trees and bushes that obscured the survey. Since the total station survey maps rely only on measurements, the state of the cemetery grounds is not an issue.

In regards to the third research question of whether one technology effectively streamline the process, from gathering all headstone data to mapping the cemetery, the easiest combination of data and maps to interpret were those recorded with the total station survey. The maximum amount of data was collected during the process of the total station survey from the start, knowing that the gravestone data would have to be recorded prior to the surveying process. The maps from the total station survey were much more accurate than those developed from the GPS survey. The total station survey equipment is not the easiest to use, the most time efficient, or the most cost effective overall, however, with the amount of accurate data that is collected, the time and cost appear to be justified.

Future expansion of this project would be to tie photographic documentation of the gravestones in with the Microsoft Excel spreadsheets containing gravestone information through embedded links. This would allow the user to link the photographs of gravestones and gravestone data to the ProCogo map via the Microsoft Excel spreadsheets.

Another area for future study would be the evaluation of other survey equipment that would produce more accurate surveys and allow for combining note-taking, survey and photography such as highly accurate handheld GPS units (cost greater than $5,000 per unit) or backpack GPS units (cost greater than $10,000 per unit).

In conclusion, cemeteries are not only important facets of our lives and history that need to be preserved, but they are also important in the study of anthropology. Surveying cemeteries to create maps and record the data from the gravestones is one way to preserve these non-replaceable cultural resources for future generations.

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APPENDIX A

SCANNING AND POST PROCESSING PROCEDURES
GPS Processing Data

Importing Points from Garmin Oregon 450 Handheld GPS and Saving Data File

Open Garmin BaseCamp
Under **File**, go to **Import Points**
Search under Computer for Garmin Handheld location and open
Under Garmin Handheld go to Garmin directory
Under Garmin Directory go to GPX folder and select specific GPS data file
After selecting specific GPS data file, data will be loaded into BaseCamp
In BaseCamp, under **Library/My Collection**, select waypoint file (or when given option, search locations for waypoint files).
Under **File**, go to **Export Points**
Select File Save location
Under File Name, select file name to save to
Under Save as Type, choose Comma-delimited text (*.csv)

Preparing Input File, Importing, Exporting and Saving Points in Corpscon Software

Open previously saved Comma-delimited text (*.csv) file with Excel
Delete all information with exception of Point ID, latitude and longitude columns (retain elevation column if applicable).
Under Save as Type, Save modified file under new file name as a Comma-delimited text (*.csv)
Open Corpscon software
Click on **Convert**/**Setup**
Verify Input System – Horizontal System as Geographic and Datum as 1983 NAD83(86)
Verify Output System as State Plane – 1983 – NAD 83(86), also check/verify correct Zone and Units. Also verify Vertical information if it has been included.
Under **Convert**, select User Defined Data File
Verify Input File Name and Output File Name
Verify Geocoordinate Format (Deg.DecMinutes) and Delimiter type (csv)
Locate and load previously modified file.
In displayed window, select **Convert**.
Under **Save**, save modified file under new file name as a Comma-delimited text (*.csv)
Print output information for points if required.

Importing, Printing and Saving Points in ProCogo Software

Under **File**, select **Import Points from Ascii**
From **List Files**, **All Types**, select file to file to import
At **Import Ascii** window, select csv as field delimeter, applicable file contents, define Null Field Values (Default). If desired, select Rename Imported Points with parameters or Don't Rename Points. Select **OK** to Import Points

Under View, select **Both Text and Graphics**
Select **Cogo**, **Points Management** , **List Points Used**
Under **Points Used or Range**, enter point numbers or range of numbers to be displayed
Under **Graphics**, select **Zoom All** to display all point numbers in the View Graphics window
Under File, Print Setup, choose
Choose **File**, **Print Graphics** to Print selected data at scale desired
Enter Scale of drawing
Choose point name, elevation and /or description as choices that can be displayed on printed graphic
Choose **Print**
Choose whether to print North Arrow and Scale on drawing
Choose **File, Save As** and select file name to save file as

LiDAR General Scan Procedures

(Instructions taken from: Leica Geosystems. (2011). *Leica ScanStation C10/C5 User Manual.* Leica Geosystems AG:Heerbrugg, Switzerland.)

The first step to conducting a scan, after developing a scan plan, is to mount the scanner onto the tripod. This will require having a tripod, the scanner and a tribrach.

1. Extend the tripod legs to allow for a comfortable working posture. Tighten the screws at the bottom of the legs.
2. Place the tribrach on the tripod and secure it with the central fixing screw.
3. Set up the tripod so that the tripod plate is as horizontal as possible.
4. Push the tripod legs firmly into the ground.
5. Place the instrument on the tribrach and secure it with the tribrach's locking knob.
6. Level up the instrument using the instrument's circular level. Turn two of the foot screws together in opposite directions. The index finger of your right hand indicates the direction in which the bubble should move. Now use the third foot screw to centre the bubble.

After the scanner has been mounted on the tripod, the next step is to turn the power on. Set up the instrument as desired. Refer to chapter "2 Setting Up the Instrument" for more information.

1. Press and hold the ON/OFF button until a beep is audible.
2. The instrument's fan starts.
3. The Leica Geosystems welcome screen starts.
4. Wait until the Main Menu appears on the display and the Idle State message is shown in the message bar.
5. Once in Idle State the scanner is ready for operation.

After the power has been turned on, it is time to start a new project. This is done by the following steps.

1. Press Main Menu
2. Press Scan
3. Input Project Name
    a. Mont Repose: Trip 1 – mrcem
    b. Mont Repose: Trip 2 – mrcemetery
    c. Ebenezer – ebcemetery
4. Press Continue
5. Scan Parameter Menu Screen
6. Field of View Drop Down Menu
    a. Mont Repose: Trip 2 – Panorama 360 x 270
    b. Ebenezer – Panorama 360 x 270
7. Resolution Drop Down Menu
    a. Mont Repose: Trip 2 – High
    b. Ebenezer – Low
8. Distance Drop Down Menu
    a. Mont Repose: Trip 2 – 100m

    b. Ebenezer – 100m
9. Press Scan
10. Scan Begins
11. Scan Finishes

After the scan completes, it is time to identify the targets. The targets must be facing the scanner.

1. Press PickT (Pick Target)
    a. Mont Repose: Trip 2 – top/ext, btm/ext
    b. Ebenezer – top/ext, btm/ext, HDS B/W Tgt, HDS Tgt 6 inch
2. Name Target
    a. Twin targets labeled #u for top/ext, #l for btm/ext
    b. HDS B/W Tgt, HDS Tgt 6 inch labeled 1, 2, 3, etc.
    c. The twin target height is pre-recorded in the machine
3. Press PickT (Pick Target)
4. Repeat Until All Targets Selected
5. Click Continue to Start Target Acquisition
6. Press Store
7. Exit to main menu

After the targets have been identified and stored, the machine must be powered off before it is moved.

1. From the current menu return to the Main Menu.
2. In the Main Menu press the button.
3. In the popup window confirm the question Do you really want to power down the scanner? with Yes.
4. Wait for the scanner to shut down.

After the scanner has been shut down, it can now be moved to the next scan position. When the machine has been powered on again, it is time to continue with the project.

1. From the Main Menu Press Manage Projects
2. Select the Current Project Name if name does not pop up
    a. Mont Repose: Trip 2 – mrcemetery
    b. Ebenezer – ebcemetery
3. Press New Station
4. Press Scan
5. Scan Finishes
6. Identify Targets Again
7. Press Continue to Start Target Acquisition
8. Press Store
9. Exit to Main Menu
10. Power Down
11. Repeat until Project is Complete

LiDAR Post Processing

(Taken from: Leica Cyclone Processing Software. (2012). Perform Target Registration. *Cyclone Computer Program Help Manual v.7.*)

Perform Target Registration

Registration is the process of combining a project's ScanWorlds into a single coordinate system as a registered ScanWorld. This integration is derived by a system of constraints which are pairs of equivalent tie-points, or overlapping point clouds that exist in two ScanWorlds. The registration process computes optimal overall alignment transformations for each ScanWorld in the registration.

Note: With the compensator off, or without a compensator, a minimum of 3 common targets is needed to fix X, Y, Z coordinates.

The eight basic steps for performing Registration are:

1. Create Registration
2. Add ScanWorlds
3. Add Constraints
4. Register
5. Error Check
6. Create ScanWorld Freeze Registration
7. Create ModelSpace
8. Create ModelSpace View

Step 1. Create Registration

1. Open the Cyclone Navigator.
2. Click on the + sign next to the Servers folder.
3. Click on the + sign next to the Unshared folder (unless you are running Cyclone over a network, in which case, click on the + sign next to Shared folder).
4. Click on the + sign next to the Database Name.
5. Highlight the Projects folder, then right click.
6. Click on Create.
7. Click on Registration. This creates a new Registration.
8. Double click on the newly created Registration.
9. The Registration: Registration 1 window opens.

Step 2. Add ScanWorlds

The next step in the registration process is to add the ScanWorlds that will be registered.

1. Select the ScanWorld from the menu bar, and click Add ScanWorld.
2. Double click on the Project folder.

3. Highlight the ScanWorlds to be registered.
4. Click on the (>>) button to add these ScanWorlds into the registration.

Step 3. Add Constraints

1. Select Constraint | Auto-Add Constraints. (During the Constraints process Cyclone searches all ScanWorlds' ControlSpaces for objects with same registration labels. Auto-Add Constraints automatically creates pairs of constraints.)
2. To view these constraints, select the Constraints tab. (The Constraints List tab lists each constraint in the registration and displays current information about each constraint. Constraint information is organized into columns. Each column can be sorted.)

Step 4. Register

After constraints have been added, the next step is to Register ScanWorlds. This computes the optimal alignment transformations for each ScanWorld.

1. Select Registration, click on Register.

Notice that before registration, the Error column had "n/a" under it. After registration, the Error column is filled in. To sort by error size, click on the Error column.

If the errors are large try disabling the largest one. In the Target ID Column highlight a target, then right click and select Disable. Do not forget to re-register (this is mandatory).

Create Scan World

Disable certain targets in order to decrease margin of error. Error in targets because they were moved when rotating the targets to face the scanner or shifting.

Step 5. Error Check

The listed errors are the distances between constraints (or control points), and each is listed in the ScanWorld after registration. The next column to the right contains the X, Y, and Z Error Vectors.

1. Inspect the Z Vector to find heights that were incorrectly recorded.
2. Other checks are overall fit (Mean Absolute Error), Horizontal and Vertical Errors. To view these, select Registration from the menu bar, and click Show Diagnostics.
3. A final check is to view all registered scans in one combined ModelSpace.
4. Select the ModelSpaces tab. (The ModelSpaces tab displays each component ScanWorld's ModelSpaces and ControlSpace. The main applications of the

ModelSpaces tab are viewing ModelSpaces, viewing ControlSpaces, and adding constraints).
5. Highlight all ScanWorlds to be viewed together.
6. Right click and select View Interim Results.
7. Graphically check to see that scans "look right" and are aligned.

Step 6. Create ScanWorld Freeze Registration

After a successful registration, a single ScanWorld is created that includes the combined ScanWorlds in one coordinate system. Freezing a registration prevents any further manipulation of registered ScanWorlds.

1. Select Registration | Create ScanWorld/Freeze Registration.

Step 7. Create ModelSpace

After freezing, a new ModelSpace and a ModelSpace View need to be created.

1. Select Registration | Create ModelSpace.
2. Close the Registration window.

Step 8. Create ModelSpace View

1. Find the newly created ModelSpace
2. Click on Create and Open ModelSpace View

APPPENDIX B

MONT REPOSE CEMETERY MICROSOFT EXCEL SPREADSHEET –

NUMERICAL LISTING

TABLE 14

#	First Name	Middle Name	Last Name	Suffix	Birth Month	Birth Day	Birth Year	Death Month	Death Day	Death Year	Epigraph
1	Eula	Mae	Busby				1944			1996	
2	Unknown										
3	Oliver		Hamilton				1900			1979	
4	Joseph		Graham				1918			1977	
5	Bessie		Graham				1923			2005	
6	Leonard	O	Graham				2000			2003	
7	Donna	J	Graham				1960			1999	
8	Ether		Rhett								
9	Frank		Rhett				1916			1996	
10	Patricia	Ann	Rhett				1952			2000	
11	Unknown										
12	Lewis	Joe	Busby				1937			2007	
13	Ella		Russ				1853	March	2	1885	Aged 32 years
14	Ethar	Gordon	Wiggins				1923			2007	
15	Dianne	Debra	White				1962			2007	
16	Lee	Bertha D	Jenkins				1928			1980	
17	Rebecca		McCray				1911			1984	
18	Keicha		Graham				1966			1994	
19	Gloria	Ann	Ferguson				1954			2008	In Loving Memory
20	William		Mike		July	4	1897	January	18	1962	South Carolina, Pvt
21	Paul		Mike		July	15	1954	January	20	1985	
22	Wallace		Mike		August	17	1954	September	2	1990	
23	Unknown										
24	Rosa	T	Mike				1910			1993	
25	Hampton		Mike		October	12	1905	February	8	1952	Our Loved One

26	Louis		Johnson								
27	Unknown	(Mama Johnson)								2011	
28	Annie	Mae	Simmons				1906			2000	
29	Alonza		Simons								
30	Unknown										
31	Unknown										
32	Terry		Eddings	Jr.			1988			2008	
33	Sam		Osgood				1950			1979	
34	Elizabeth		Osgood				1924			2007	Pringles Angels Vault
35	Wilson		Rhett	Jr.			1928			2007	Pringles Angels Vault
36	Unknown										
37	James		Johnson				1926			2011	
38	Harry		Fields				1916			1998	
39	Unknown										
40	Unknown										
41	Earl	H	Wade				1926			1993	
42	Latson	Benjamin	King		February	14	1891	August	24	1960	S.C. CPL Co. K 371 Infantry
43	Rachel	Pearl Wade	King		November	8	1893	July	6	1963	My loving aunt by: devoted niece Sadie Pearl
44	Dr. Kitt	Wade	Marvel		September	26	1855	November	5	1938	
45	Fannie		Wade		June	18	1858	July	8	1933	
46	Unknown										
47	Kenneth	N	Friday				1947			1997	
48	Nancy		Pollings		December	17	1878	April	22	1886	Born at Coosahachie, SC.
49	Margaret		Pollings				1835	May	27		Age 65 yrs.
50	E.	R.	Polsins		May	15	1880	December	27		
51	Clarah		Pollens				1871	Febuary	15	1923	
52	Rev E	R.	Poullens					July	4	1914	54 years old

53	Sarah		Chisholm				1867	August	12	1921	
54	Evelena		Roberson		December	6	1892	November	20	1947	
55	Jane		Singleton				1877			1977	
56	Unknown										
57	James		Deloach				1929			1982	
58	John		Deloach	Jr.			1968			1996	
59	Unknown										
60	Susie	M	DeLoach				1910			1974	
61	Wlesey		DeLoach				1960			1984	
62	Johnny	L	Deloach	Sr			1966			2010	
63	Andrew		Mickell				1970			2005	
64	Henry		Wright	Sr			1958			2011	
65	Unknown										
66	Alfreda		Wade				1911			1962	
67	Vaudell	Bud	Bass				1933			1993	
68	Vicki	Kay	Bass				1961			1995	
69	Martha		Wade		December	1	1883	July			
70	James	Allen	Wade				unk	March	9	1938	South Carolina Mess Attendant 2CL US Navy
71	_ara	F	B_____				1891			1981	
72	Curly		Frazier				1923			1990	
73	Allen		Wade		September	26	1878	September	13	1922	
74	Unknown										
75	Mae	Fraizer	Hopson				1916			2007	Drake Burial Vault Co.
76	Joe		Fraisur		January	8	2005	July	18	1922	Age 89 years; rest sweetly rest.
77	Dafnie		Frazier				1841	May	29	1912	Wife of Joe Frazier; 71 years
78	Alsey		Polite				1874	October	5	1915	41 years

79	Joseph	A	Perguson				1940			1993	
80	Willie		Ferguson				1900			1981	
81	Sarah	Tillie	Glenn				1903			1980	Gone But Not Forgotten
82	Unknown										
83	Lottie		Newton				1928			1972	
84	Oliver		Mitchell				1906			1972	
85	Clara	Bell	Mitchell				1911			1975	
86	Emily		Ready				1912			1985	
87	Ronald		Newton				1948			2008	
88	J	Edward	Mitchell				1943			1989	
89	Samuel		Rhett	Sr			1910			1981	
90	Georgia	Mae	Graham				1954			2001	
91	Ella		Williams				1909			1980	
92	Transit Station Point										
93	Bettie		Bird		January	17	1864	May	27	1866	
94	Geneva	Osgood	Benson				1945			2010	

	Names recorded in 2011 but not located in March 2012 survey										
	Harry		Piells				1916			1998	
	Esther	Lee	Rhett				1921			1975	
	Ida	Rhett	Tulley				1908			2004	

APPPENDIX C

EBENEZER CEMETERY MICROSOFT EXCEL SPREADSHEET –

NUMERICAL LISTING

TABLE 15

#	First Name	Middle Name	Last Name	Birth Month	Birth Day	Birth Year	Death Month	Death Day	Death Year	Epigraph
1	Naomi		Weitman	October	27	1795	January	25	1879	
2	John	Lewis	Weitman				December	8	1859	Age: 29 yrs
3	Elbert		Gnann	March	13	1821	October	30	1892	
4	Salome		Gnann			1822			1909	wife of Elbert Gnann
5	B	D	Morgan	March	14	1841	August	13	1878	
6	Sarah	O	Morgan	July	31	1843	October	31	1892	
7	Lorena	G	Gnann	October	2	1866	October	17	1926	
8	Florence	F	Gnann	September	20	1845	March	21	1934	
9	William	R	Gnann	December	6	1856	November	23	1936	
10	Julia	A	Gnann	December	29	1860	September	19	1956	
11	Mary	A	Dasher	July	11	1868	July	23	1878	
12	John	B	Dasher	August	4	1870	July	29	1878	
13	Julia	R	Dasher	April	4	1878	July	29	1878	
14	Annie	S	Dasher	November	26	1875	August	2	1878	
15	Thomas	M	Dasher	January	17	1830	July	30	1903	
16	Agatha	F	Dasher	September	3	1841	April	19	1919	
17	Jesse	M	Dasher	September	5	1881	March	21	1934	
18	Infant	son	Powell	November	3	1884	November	3	1884	infant son of M.C & I.A Powell
19	Infant	son	McNeill	September	15	1878	September	15	1878	of MD and ME McNeill
20	J	M	Zittrouer	April	2	1847	January	8	1882	
21	Richard	E	Zittrouer	March	16	1816	October	21	1884	
22	Louisa	O	Zittrauer	September	13	1827	January	27	1909	wife of RE Zittrauer
23	W	J	Zeigler	November	28	1881	May	4	1884	Little Willie
24	Little	Ada	Zeigler	January	22	1872	February	5	1879	dau of CW and S Zeigler
25	George	W	Zeigler	August	28	1837	December	2	1915	

26	Sarah	J	Zeigler	November	1	1849	December	24	1925	
27	John	J	Gnann	January	12	1857	August	14	1932	
28	Little	Leon	Lowe?	September	8	1886	May	8	1887	not sure last name is correct
29	Infant		Unknown						1865	
30	William	H	Helmly	December	25	1842	October	6	1880	
31	Sarah	Helmly	Mattox	April	14	1850	April	3	1930	M
32	Jackson	L	Mattox	November	13	1850	January	12	1922	
33	Daniel		Defield				October	31	1881	
34	Josephine		Defield				May	23	1891	
35	Walter	D	Helmly	October	31	1875	October	1	1878	
36	William	H	Helmly	February	1	1885	October	2	1886	
37	Francis	M	Helmly			1841			1910	
38	Caroline	D	Helmly	November	22	1851	June	27	1934	
39	John	F	Helmly	February	11	1812	December	11	1879	
40	Mary	A	Helmly	August	25	1816	December	30	1873	
41	Anna	S	Helmly	October	8	1834	February	29	1920	
42	J	F	Helmly	February	7	1840	April	3	1924	
43	Frances	F	Helmly	April	3	1841	April	26	1933	
44	Homer	P	Helmly	November	9	1878	November	15	1941	
45	Mary	E	Helmly	October	15	1883	April	2	1963	
47	Julian	C	Helmly	November	6	1895	September	8	1956	
48	Elizabeth		Helmly	October	18	1919	October	20	1920	
49	Salome	Cynthia	Fetzer	November	5	1821	February	17	1907	
50	Richard	I	Fetzer	October	3	1813	July	11	1895	
51	John	C	Fetzer				October	14	1864	Age: 79 years
52	Elizabeth		Fetzer				March	7	1854	Age: 72 years
53	Ida	S	Dasher	August	8	1858	September	11	1927	

54	Emma	K	Dasher				September	20	1859	Age: 20 yrs 1 mo 1 day Husband: AF Dasher
55	Alice	V	Fetzer				July	11	1855	Age: 2 yrs 21 days
56	Richard	E	Fetzer				July	3	1853	Age: 4 yrs 5 mos 21 days
57	Edwin	P	Fetzer				September	25	1851	Age: 4 yrs 6 mos 10 days
58	Susan	J	Fetzer				October	25	1848	Age: 6 yrs 20 days
59	Margaret		Gnann	November	22	1814	November	9	1905	
60	Wooden	Marker	Unknown						0	
61	Wooden	Marker	Unknown						0	
62	Wooden	Marker	Unknown						0	
63	Wooden	Marker	Unknown						0	
64	Herbert		Keiffer				October	18	1870	Age: 1 yr 6 mos 6 days
65	Eph	M	Keiffer	July	5	1791	Decmber	18	1850	Rev Age: 59 yrs 5 mos 13 days
66	Catherine		Keiffer				September	3	1866	Age: 75 yrs
67	Joesph	M	Weitman	November	14	1825	March	3	1857	Age: 31 yrs 3 mos 9 days
68	Israel		Weitman	May	1	1792	December	23	1848	Age: 55 yrs 7 mos 23 days
69	Sophia		Weitman				January	30	1864	Age: 71 yrs 21 days
70	Lavinia		Weitman	May	5	1823	February	28	1885	
71	Shadrack		Grovenstein	May	29	1821	December	18	1884	
72	Susan	Catherine	Grovenstein				August	2	1883	Age: 59 yrs
73	Jane	L	Wilson				September	22	1852	Age: 25 years
74	Gideon		Dasher	May	5	1805	April	9	1850	
75	Sarah	Dasher	Armstrong	November	19	1819	November	30	1849	Middle initial : C,Dau./ Martin and Lydia Dasher; w/Benjamin R Armstrong
76	Alice		Armstrong	September	29	1849	March	29	1853	Age: 3 yrs 6 mos
77	Willey		Page				July	8	1856	son of John R and Mary I Page Age: 9 mos 20 days
78	Infant	son	Gnann	September	18	1872	September	18	1872	of Cletus and Mary Gnann
79	Joseph	Elbert	Gnann				October	20	1859	Age: 8 mos Son of Cletus and

										Mary Gnann
80	Mary	G	Gnann	June	5	1830	October	16	1913	
81	Cletus		Gnann	February	27	1819	July	15	1897	Age: 78 yrs 4 mos 18 days
82	Jane	Eliza	Stanton	March	29	1827	December	1	1865	wife of Patrick Stanton
83	Walter	Curran	Stanton	December	8	1857	July	8	1859	
84	Our	Infant	Stanton						0	
85	Patrick	H	Stanton	September	13	1820	July	4	1867	
86	Mary	Ella	Stanton	November	2	1855	October	26	1860	
87	George	Haltiwanger	Stanton	August	5	1862	April	2	1868	
88	Henry	Kollock	Stanton	December	30	1860	May	12	1877	
89	Solomon	H	Dasher	May	18	1832	July	1	1862	Age: 30yrs 1 mo 14 days
90	Georgia	A.R.	Keiffer	February	8	1832	April	15	1863	Wife of AN Keiffer
91	Samuel	Napoleon	Keiffer	July	26	1857	September	4	1884	Age: 27 yrs 1 mo 9 days
92	Block	Marker	Unknown						0	
93	Albert	F	Dasher	March	27	1835	November	24	1865	
94	Amos		Rahn				January	20	1883	Age: 73 yrs 7 mos 19 days
95	Ann	Elizabeth	Rahn				November	6	1866	wife of Amos Rahn Age: 50 yrs 4 mos
96	Lydia	Weitman	Dasher	Febuary	15	1797	June	14	1881	wife of Martian Dasher
97	Martin		Dasher	June	16	1789	January	18	1865	
98	Burcman	B	Dasher	May	22	1834	September	4	1864	
99	Benjamin		Dasher	February	8	1762	November	11	1841	
100	Elizabeth		Dasher	March	25	1769	November	11	1834	
101	Anna	Salome	Weitman	June	5	1830	September	2	1835	
102	Ann	B	Liessel				October	13	1830	Age: 69 yrs
103	Mary		Cramer	September	6	1783	September	27	1874	Age: 91 yrs 21 days
104	Solomon		Cramer	August	28	1777	February	18	1839	Age: 61 yrs 5 mos 21 days
105	Elizabeth		Cramer	October	2	1820	December	31	1893	Age: 73 yrs 2 mos 29 days

106	Sarah		Cramer	January	19	1818	April	19	1902	
107	Infant	Pauline	Gaylord						0	
109	Milton		Gaylord	March	14	1905	July	27	1907	
110	Robert		Gaylord	September	9	1864	May	14	1928	
111	Florrie	Gnann	Gaylord	September	15	1867	January	22	1953	
112	Felisher	Gnann	Kessler	June	6	1878	September	9	1954	
113	William	Samuel	Kessler	March	26	1881	November	2	1942	
114	Sidney	Ralph	Kessler	February	17	1901	August	29	1901	
115	Georgia	Kessler	Jones	July	24	1903	April	8	1959	
116	Caroline	Elizabeth	Gnann	March	4	1845	August	17	1925	
117	J	A	Gnann	March	12	1833	March	5	1894	
118	I	M	G						0	
119	J	A	G						0	
120	I	A	G						0	
121	Jacob	Bittle	Gnann	January	21	1873	September	20	1942	
122	Wooden	Marker	Unknown						0	
123	Wooden	Marker	Unknown						0	
124	Wooden	Marker	Unknown						0	
125	Sophia	C	Martin				September	16	1882	Age: 36 yrs 1 mo 20 days
126	Agatha	Gnann	Exley				October	28	1884	
127	Jacob		Exley			1800			1863	Age: 63 yrs 2 mos 3 days
128	Wooden	Marker	Unknown						0	
129	Wooden	Marker	Unknown						0	
130	Wooden	Marker	Unknown						0	
131	Wooden	Marker	Unknown						0	
132	Andrew		Gnann	September	9	1778	August	3	1846	Age: 67 yrs 11 mos
133	Agatha		Gnann	September	2	1784	August	2	1846	Age: 61 yrs 11 mos

134	James	G	Ernest	February	24	1862	March	1	1862	
135	Wooden	Marker	Unknown						0	
136	Mary	F	Biddenback				April	12	1837	Age: 72 yrs 9 mos 1 day
138	George	M	Wilson	April	8	1928	January	20	1972	in memory; buried in Springfield
139	Paul	Newton	Wilson	October	21	1900	October	2	1964	in memory; buried in Springfield
140	Susan	Reiser	Keiffer	August	11	1842	August	6	1927	
141	Allen	Newton	Keiffer	April	21	1829	November	5	1911	
142	Columbus	B	Keiffer	April	7	1874	April	22	1938	
143	Claude	Reginald	Wilson	January	11	1905	September	13	1986	
144	William	George	Wilson	January	22	1867	March	11	1956	
145	Octavia	Kieffer	Wilson	September	26	1876	November	12	1957	
146	Susie	Wyburg	Wilson	July	17	1915	Hykt	23	1979	
147	Willie	Octavia	Wilson	May	17	1903	June	29	1994	
148	Edward		Zetrouer				July	7	1837	Age: 29 yrs 6 mos 19 days
149	David		Zeigler				February	3	1874	Age: 73 yrs 16 days
150	Eveline		Zeigler				April	5	1891	Age: 84 yrs 1 mo 14 days
151	Harriet	N	Zeigler	November	7	1840	November	7	1895	
152	John	Ulrich	Neidlinger						1734	in memory
153	John	B	Berry	July	9	1800	April	17	1872	Age: 71 yrs 9 mos 8 days
154	Sarah		Exley			1792	June	25	1871	Age: 79 yrs 6 mos 10 days
155	Annie	G	Berry				April	2	1864	Age: 42 yrs
156	Jno	D	Berry				June	23	1861	Age: 33 yrs
157	Mary	A	Berry				May	29	1858	Age: 50 yrs
158	Reuben	R	Berry				July	4	1848	Age: 17 yrs
159	Obadiah		Berry				November	28	1842	Age: 39 yrs
160	Maria		Berry				November	22	1820	Age: 59 yrs Husband: John Berry
161	John		Berry				August	18	1817	Age: 60 yrs

162	Ollie	M	Exley	April	19	1877	July	13	1878	
163	Bercman		Exley	May	7	1848	December	20	1887	
164	Laura	W Exley	Montgomery			1860	December	2	1930	
165	Jacob	Christopher	Exley	May	16	1879	August	30	1943	
166	Wooden	Marker	Unknown						0	
167	Mary	Thomas	Strickland	November	7	1912	January	17	1995	
168	Augusta	D	Thomas	February	1	1874	April	13	1946	
169	Samuel	F	Thomas	May	29	1871	March	18	1914	
170	William	Austin, Sr	Lowe	January	27	1897	August	31	1934	GA Pvt GA Inf N.G.
171	Katie	Kessler	Lowe	September	26	1899	November	5	1968	
172	William	Austin, Jr	Lowe	August	15	1919	July	27	2000	
173	Jean		Lowe	March	27	1929	November	21	1946	
174	Gilbert	Warren	Lowe				January	6	1935	
175	Jack	Samuel	Lowe	July	3	1931	October	8	1931	
176	Leona	Gertrude	Lowe	December	17	1924	February	5	1926	
177	Victoria	Gnann	Davis	January	27	1881	November	27	1950	
178	Jackson	Jerry	Davis	April	13	1882	June	26	1936	
179	Joseph	Samuel	Davis	November	19	1908	December	9	1988	
180	Blanche	E	Waldhour	August	11	1903	February	20	1977	
181	George	L	Waldhour	July	19	1894	March	25	1969	
182	Mary	Louisa Kessler	Waldour	April	7	1866	June	10	1933	
183	Thomas	Beuregard	Waldhour	January	26	1862	January	8	1944	
184	Matilda	Victoria	Reiser	January	6	1857	November	13	1943	Wife of J.B. Gnann and William Cletus Rahn
185	John	Benjamin	Gnann				July	1	1881	Age: 24 yrs 7 mos 27 days
186	Infant		Gnann			1880			1880	of JB and MV Gnann
187	Sallie	Reiser	Dasher	March	30	1885	June	29	1951	
188	Bertie	Mallette	Dasher	October	22	1879	April	8	1948	

189	Nellie	Reiser	Helmly	September	9	1886	June	17	1948	
190	Eddie	Rawls	Helmly	May	5	1881	October	11	1964	
191	John	Edward	Helmly	June	26	1915	May	23	1917	
192	John	Walter	Reiser	May	30	1855	June	7	1951	
193	Mary	Gnann	Reiser	June	17	1854	September	26	1916	
194	Alice	Reiser	Gnann	March	24	1863	December	10	1952	
195	Charles	Frederick	Gnann	July	23	1859	April	25	1908	
196	Susie	Wingard	Gnann	February	28	1890	August	31	1960	
197	Jane	E	Waldhour			1828			1912	
198	Thomas		Waldhour			1812			1885	
199	George	H	Waldhour	October	7	1868	September	25	1878	
200	W	D	Strobhart	May	6	1817	July	1	1854	
201	Frederick		Gnann	January	19	1817	October	18	1875	Age: 56 yrs 8 mos 29 days
202	Christina		Gnann	February	22	1787	November	23	1844	Age: 57 yrs 9 mo 1 day
203	Jacob		Gnann	March	13	1791	August	14	1840	Age: 49 yrs 5 mo 1 day
204	Gayborne		Gnann	July	24	1823	November	15	1823	
205	William		Gnann	October	13	1813	November	12	1813	
206	James	W	Wilson	November	18	1864	March	27	1936	
207	Mary	J	Wilson	April	26	1866	August	21	1954	
208	Mary	Margaret	Kessler	September	19	1957	September	20	1957	
209	Mary	Jane	Kessler	May	11	1922	April	9	1924	daughter of SI and RE Kessler
210	Lillian	G	Gnann	February	12	1870	September	14	1941	
211	Frederick		Gnann			1822	December	9	1896	Age: 74 yrs 10 mos 6 days
212	Mary	Ann	Gnann			1828	September	30	1888	Husband: Frederick Gnann
213	Margaret	Susannah	Gnann	January	20	1852	July	21	1859	Age: 7 yr 6 mo 1 day; daughter of F and MA
214	Ann	F	Gnann	April	1	1819	October	21	1858	Age: 33 yrs 6 mos 21 days
215	Hannah		Gnann	October	23	1791	September	19	1846	Wife of Benjamin Gnann

216	Marker		Unknown						0	
217	Salome		Gnann			1817	October	27	1830	Age: 27 yrs
218	Benjamin		Gnann	December	26	1791	May	19	1860	Age: 68 yrs 5 mos 24 days
219	Ann	Margaret	Gnann			1791	February	21	1825	Age: 34 yrs
220	Verona	Exley	Grovenstein	January	19	1902	December	18	1999	
221	Paul	Lewis	Grovenstein	February	18	1900	October	1	1975	
222	Infant	son	Grovenstein	October	13	1922	October	13	1922	of PL and VE Grovenstein
223	Sophie	Rahn	Grovenstein	March	18	1874	March	20	1940	husband: Lewis Frank Grovenstein
224	Lewis	Frank	Grovenstein	February	6	1851	May	30	1939	wifes: Sophie Rahn and Emma J Grovenstein
225	Ramah	E	Grovenstein	May	1	1910	February	1	1924	
226	George	J	Grovenstein	January	20	1891	March	26	1909	son of LF and EJ
227	Preston	W	Grovenstein	July	19	1905	September	5	1906	son of LF and SS Grovenstein
228	Ward	Raymond	Grovenstein	November	29	1901	June	17	1902	son of LF and SS Grovenstein
229	Emma	J	Grovenstein	December	4	1854	October	16	1896	wife of Lewis F Grovenstein
230	Infant	son	Grovenstein	July	1	1894	July	1	1894	of Lewis F and Emma J Grovenstein
231	Theresa		Haller	January	15	1817	September	15	1884	Born in Lexington Co, SC
232	Sidney	H	Grovenstein				September	1	1882	age: 1 yr 5 mos 5 days son of LF and EJ
233	Nina	Gertrude	Exley	June	3	1871			1872	Age: 10 mos 22 days Daughter of ML and EN Exley
234	George	W	Grovenstein				July	12	1879	age: 50 yrs 4 mos 7 days
235	Cornelia	N	Grovenstein			1831	April	5	1879	age: 48 yrs
236	Benjamin		Grovenstein	December	16	1815	July	5	1875	Age: 59 yrs 6 mos 20 days
237	Emma	J	Grovenstein	February	12	1835	September	17	1876	age: 41 yrs 7 mos 5 days
238	William	A	McKenzie	April	28	1842	January	1	1857	Age: 14 years, 8 months, 3 days
239	Benjamin	B	Grovenstein			1850	August	20	1867	Age: 19 yrs, 6 mos, 13 dys
240	George	Walter	Grovenstein			1846	October	24	1866	Age: 17 yrs, 3 mos 12, days
241	Homer		Grovenstein	September		1859	October	30	1860	Age: 13 mos

242	Hannah	E	Grovenstein						0	Age: 72 yrs 4 mos 15 days
243	Hubert	A	Grovenstein				October	12	1856	Age: 7 yrs, 8 dys
244	Infant	son	Grovenstein						0	of E and Emma J Grovenstein; 19 days
245	Little	Willie	Grovenstein						0	Age: 3 yrs 9 mos Daughter of B & Mary E Grovenstein
246	Solomon		Arnsdorf			1790	April	12	1873	Age: 83 yrs
247	Wooden	Marker	Unknown						0	
248	Wooden	Marker	Unknown						0	
249	W	R	Secklinger	May	30	1822	October	2	1904	
250	Sarah	Ann	Secklinger	November	19	1822	December	23	1892	Age: 70 yrs 1mo 4 days
251	Brick	Coping	Unknown						0	
252	Brick	Coping	Unknown						0	
253	Brick	Coping	Unknown						0	
254	Brick	Coping	Unknown						0	
255	Wooden	Marker	Unknown						0	
256	Wooden	Marker	Unknown						0	
257	Wooden	Marker	Unknown						0	
258	I	N	Helmly	August	20	1817	January	23	1899	
259	Sallie		Helmly			1791	April	8	1858	Aged: 67 yrs.
260	Joshua		Helmly	November		1788	November		1873	Age: 85 years
261	Lawrence	I	Helmly	August	6	1858	September	17	1860	
262	Infant	daughter	Helmly	May	13	1867	September		1867	of SE and EM Helmly
263	Mary	V	Helmly	August	7	1862	November		1867	
264	Julian	A	Helmly	April	5	1877	June	26	1887	
265	Emma	Matilda	Helmly	March	6	1840	November	23	1905	wife of SE Helmly
266	Shadrack	E	Helmly	August	20	1831	February	5	1918	
267	Andrew	Whitfield	Kessler	November	23	1879	July	4	1941	
268	Amie	Helmly	Kessler	September	26	1885	December	27	1968	

269	Annie	Gertrude	Kessler	October	22	1910	August	7	1911	daughter of AW and AM Kessler
270	Maria	E	Gnann	September	2	1812	January	31	1866	Husband: Jonathan Gnann
271	Eddie		Gnann	October	26	1871	July	17	1873	son of WW and ME Gnann
272	Anna	M	Gnann	October	8	1883	June	26	1884	daughter of WW & ME Gnann
273	Lydia		Exley				November	30	1881	Age: 74 yrs 3 mos 7 days
274	Naomi		Grovenstein(e)				May	24	1885	Miss Age: 72 yrs, 4mos, 3 ds
275	Mary	E	Gnann	February	4	1839	March	10	1886	Wife of W.W. Gnann
276	Karl	R	Helmly	June	27	1922	April	26	1924	
277	Mary	E	Helmly	November	28	1932	October	27	1933	
278	Carl	Rufus	Helmly	February	5	1896	August	14	1971	Private Company K, 1st Infantry, Replacement Regiment, WWI
279	Minnie		Kessler	February	16	1899	March	15	1982	
280	Grady	C	Helmly	February	18	1935	November	17	1999	
281	Alan	A	Hinely	June	7	1922	September	23	1951	
282	Laura	A	Dasher	September	22	1843	December	10	1886	
283	David	H	Dasher	October	30	1829	January	7	1906	
284	Lawton	Lafayitte	Dasher	March	18	1868	October	27	1939	
285	Ward	Ethell	Dasher	November	13	1869	August	21	1955	
286	Hattie	Denorah	Dasher	December	11	1884	May	6	1959	
287	J	J	Backley			1842			1892	
288	Sarah	Ann	Reiser	Febuary	29	1840	September	9	1917	
289	E	Ellen	Backley	April	11	1842	March	3	1875	Age: 32Yrs 10 mos 20 days
290	William	Elton	Backley				May	5	1875	Age: 10 mos 20 days
291	Daisy		Backley				June	9	1873	Age: 5 days
292	Jno	Henry	Backley				March	14	1872	Age: 25 days
293	Rosannah	C	Sealy			1820	December	23	1852	Age: 32 yrs 8 mos 14 days
294	Lydia		Metzger	September	5	1793	October	2	1851	Age: 58 yrs 27 days
295	Amelia	E	Metzger			1833	September	8	1851	Age: 18 yrs 25 days

296	John	B.W.	Metzger			1815	June	25	1851	Age: 35 yrs 3 mos 7 days
297	Louisa	N.K.	Metzger	October	31	1813	October	28	1883	Relich of RJ Backley, Wife of Wm McCormick
298	Frederick		Backley				September	5	1846	Age: 42 yrs 5 mos 6 days
299	John	J	Metzger			1790	April	12	1845	Age: 55 yrs
300	David	A	Metzger				September	20	1863	3rd son of John and Lydia Metzger
301	Georgia	O	Helmly	November	25	1860	December	17	1948	
302	Shadrach	E	Helmly	April	4	1860	November	6	1933	
303	Virgie	T	Helmly	November	23	1905	May		1906	dau of SE and GO Helmly
304	Ellis	Benjamin	Helmly	July	1	1899	July		1903	son of SE and GO Helmly
305	Infant	son	Helmly				July		1903	of SE and GO Helmly
306	Infant	daughter	Helmly				August	23	1896	of SE and GO Helmly
307	Mary	Ida	Helmly	April	20	1870	March	5	1929	
308	Joshua	Alex	Helmly	July	27	1864	February	22	1943	
309	Anna	C	Helmly	January	25	1867	November	18	1889	
310	Ruby	C	Helmly	October	28	1889	September	30	1892	dau of JA and AC Helmly
311	Infant	son	Helmly						0	son of SS and MA Helmly
312	John	Gotlip	Gnann	September	14	1812	April	26	1859	
313	Julian		Gnann	August	1	1819	January	28	1896	
314	Mary	Etoile	Wilson	August	2	1857	May	9	1859	Age: 1 yr 9 mos 8 days Dau of John W & Mary M
315	James	Henry	Wilson	October	4	1851	September		1859	Age: 7 yrs son of John W & Mary M
316	Sarah	Ann	Wilson	October	7	1855	August	21	1866	Age: 10 yrs 9 mos 11 days
317	Rebecca	Talulah	Wilson	November	15	1853	September	29	1859	Age: 15 yrs 10 mos 4 days J. W. & Mary M
318	C	C	Wilson	April	13	1868	February	5	1870	Age: 1 yr 8 mos 23 days JW & Mary M
319	Mary	Massie-Ryall	Wilson	July	10	1826	July	11	1870	Age 44 yrs 1 day Wife of J.W. Wilson
320	John	Winbern	Wilson	November	10	1825	January	13	1881	Age: 55 yrs 2 mos 3 days

321	Memorial	Marker							0	(see below)
	Salzburgers and Rev. John Martin Bolzius & Rev Israel Christian Gronau who settled in Effingham Co in 1734 and successors Rev Herman H Lembke and Rev Christian Rabenhorst									
322	John	E	Bergman			1758	February	25	1824	Age: 66 yrs Native of Peritisch in Saxony; Reverand
323	Mary	G	Bergman	February	25	1811	February	16	1848	Age: 37 yrs 11 mos 19 days
324	Christopher	F	Bergman	January	7	1793	March	26	1832	Reverand
325	Martha	Elizabeth	Austin				November	14	1890	Age: 55 yrs 7 mos 18 days
326	Mrs A	R	Solomons	November	8	1806	September	23	1879	Wife of E.W. Died at Salem, Alabama
327	Susan		Bevill	August	15	1784	July	4	1844	wife of Claibourn Bevill
328	Gideon	C	Bevill	January	16	1820	June	30	1850	Son of Claibourn and Susan
329	Claibourn		Bevill	November	4	1781	September	18	1852	
330	James	A	Ernest				June	21	1865	Age: 49 yrs 8 mos 9 days
331	Mary		Ernest				July	10	1868	Age: 46 yrs 8 mos 9 days
332	Salome		Colson				March	28	1875	Age: 70 yrs 3 mos 15 days
333	Saphronia	A	Clark				February	13	1879	Age: 32 yrs 7 mos 18days
334	Hattie	Leona	Ernest				June	20	1886	Age: 10 mos 20 days
335	Elizabeth	C	Wilson				June	18	1891	Age: 69 yrs 10 mos 18 days
336	Susannah		Wilson				September	22	1863	Age: 64 yrs 11 mos 14 days
337	John		Wilson				September	16	1855	Age: 56 yrs 5 mos 9 days
338	Susannah	Marcare	Wilson				October	23	1850	Age: 15 yrs 7 mos 9 days
339	William	Henry	Wilson				July	24	1863	Age: 24 yrs 3 mos 24 days
340	George	William	Rahn			1822	January	7	1858	Age: 36 yrs 4 mos
341	Wooden	Marker	Unknown						0	
342	Jonathan		Rahn			1762	July	18	1840	Age: 78 yrs 3 mos 22 days Revoluntionary Soldier
343	Christina		Rahn			1763	April	18	1824	Age: 61 yrs Mrs.
344	Lt.	Matthew	Rahn	October	7	1754	November	4	1822	2nd Batt'n 1st Ga Regt Bethany Militia, Centotaph
345	Joathan		Rahn			1794	September		1816	Age: 22 yrs 13 days Jonathan?

346	Jacob	Nickolas	Helmly	September	8	1871	February	19	1946	
347	Emma	Rahn	Helmly	February	22	1869	October	24	1945	
348	Clyde		Helmly	August		1898	October	16	1899	Age: 1 yr 8 mos dau of JN and EF Helmly
349	Annie		Groover				January	31	1867	Age: 1 yr 2 mos dau of Frither & Margaret
350	Wooden	Marker	Unknown						0	
351	Wooden	Marker	Unknown						0	
352	Wooden	Marker	Unknown						0	
353	Wooden	Marker	Unknown						0	
354	Wooden	Marker	Unknown						0	
355	Wooden	Marker	Unknown						0	
356	Wooden	Marker	Unknown						0	
357	Wooden	Marker	Unknown						0	
358	Ella	V	Reiser	September	22	1865	June	21	1941	
359	Jane	Reiser	Morgan	December	23	1848	June	8	1940	
360	Charlotte	C	Reiser				May	9	1899	Age: 78 yrs 10 mos 25 days
361	Christopher	F	Reiser				April	25	1884	Age: 71 years
362	Bartow	B	Reiser				October	10	1884	Age: 23 yrs 2 mos 14 days
363	Sarah	Ann	Reiser	February	29	1840	September	9	1917	
364	Robert	Albert	Waldhour	November	29	1920	August	17	1928	
365	Herman	A	Waldhour	May	26	1896	May	4	1942	Pvt in US Army
366	Emily	K Exley	Waldhour	August	23	1903	June	24	1989	
367	Jacob	Radley	Waldhour	January	7	1865	February	15	1937	
368	Frances	Aldine	Waldhour	April	24	1869	January	17	1944	
369	Infant	son	Exley	June	13	1942	August	17	1942	son of Mr and Mrs Harold Exley
370	James	Singleton	Kessler	March	28	1921	January	22	1985	
371	Joseph	Woodrow	Kessler	September	25	1919	November	24	1922	
372	Alma	Lynch	Kessler	May	16	1898	April	18	1979	

373	Paul	Herman	Kessler	June	1	1888	January	22	1965	
374	Milton	G	Jeffcoat	February	23	1904	August	14	1906	son of WG & JM
375	Mary	Margaret	Coursey	September	30	1843	February	5	1924	
376	Absalon	S	Coursey	August	22	1846	August	4	1897	
377	Infant		Unknown	June	12	1896	November	12	1896	
378	Daisy		Zittrouer	July	23	1889	April	23	1890	daughter of WH and ML Zittrouer 9 mos
379	A		Cosey						0	
380	Jeremah	H	Arnsdorf	April	6	1826	October		1864	
381	C	W	C						0	
382	B	C	C						0	
383	G	A	C						0	
384	Christopher		Gnann	December	25	1806	April	7	1881	
385	Elizabeth	M	Gnann	October	1	1815	January	8	1894	
386	Bessie	G	Gnann	February	7	1881	June	27	1881	
387	Infant	son	Gnann						0	son of AA and AE
388	Unknown		Gnann						0	
389	Daisie	B	Gnann	December	20	1894	May	11	1895	
390	Ann	Eliza	Gnann	October	15	1851	August	17	1912	Age: 60 yrs 10 mos 4 days
391	Andrew	A	Gnann	September	9	1847	October	9	1914	Age: 67 yrs 1 mo
392	Infant	son	Helmly			1911	December	11	1911	of BF and ER Helmly
393	Infant	daughter	Helmly	April	13	1919	April	14	1919	of BF and ER Helmly
394	Infant	son	Exley				April	8	1905	Infant son of SC and IO Exley
395	Solomon	Cramer	Exley	August	3	1850	August	12	1916	
396	Isabell	Waldhour	Exley	August	4	1858	December	18	1929	
397	Sarah	M	Rahn	November	1	1840	October	19	1915	
398	Eliza	H	Rahn	April	28	1811	June	14	1893	wife of Cletus Rahn
399	Cletus		Rahn				January	15	1856	Age: 54 yrs 10 mos 10 days

400	Eugene		Rahn						0	infant
401	Wooden	Marker	Unknown						0	
402	Wooden	Marker	Unknown						0	
403	David	A	Morgan	December	7	1809	November	18	1858	husband of Ann Cristie
404	Ann	Cristie	Morgan	October	16	1814	October	8	1889	wife of David A
405	Sue								0	
406	James	M	Morgan	March	11	1837	August	31	1861	
407	Susan	C	Defield				November	29	1868	Age: 49 yrs 4 mos 4 days
408	Sarah	H	Tabeau	July	5	1848	February	23	1875	Age: 26 yrs 7 mos 28 days
409	Stephen	W	Tabeau	January	25	1847	January	26	1878	
410	W	H	Tabeau	February	22	1875	April	22	1898	
411	Gottlieb		Ernst				February	15	1829	Age: 54 yrs 9 mos 10 days
412	Catherine	C	Ernest	August	15	1790	October	15	1836	Age: 46 yrs 2 mos
413	John	A	Zeigler	February	22	1834	June	15	1910	
414	Ann		Zeigler	March	21	1824	June	27	1896	Wife of J. A.
415	Catherine		Gnann	March	21	1814	March	12	1898	Age: 83 yrs 11 mos 21 days
416	Robert	Jonathan	Christie	December	14	1814	July	7	1871	
417	Julia	Weitman	Christie	June	11	1819	April	25	1887	
418	Lewis	Robert	Christie	December	29	1851	December	6	1872	
419	Victoria	E	Morgan	January	24	1842	April	20	1923	Wife of A.C. Morgan
420	Albert	C	Morgan						0	Age: 61 yrs 3 mos 20 Days
421	Edwin	B	Rahn	August	26	1843	October	29	1877	Age: 34 yrs 2 mos 3 days
422	Julia	C	Ellis	December	11	1886	January	12	1952	
423	Adeline	A	Cleveland	September	29	1876	December	8	1951	
424	Henry	D	Cleveland	February	14	1844	October	10	1905	
425	Julia	Exley	Cleveland	May	3	1844	January	3	1918	
426	Charlotte	Catherine	Cleveland	September	10	1878	July	31	1969	

427	Benjamin	Franklin	Helmly	April	24	1869	July	20	1928	
428	Edith	Roberta Lucas	Helmly	February	29	1876	June	19	1934	
429	James	David	Gnann	November	18	1853	November	2	1921	
430	Laura	Hinely	Gnann	February	3	1863	October	27	1943	
431	Harold	L	Gnann	December	22	1894	November	2	1895	
432	Infant	daughter	Gnann				November	19	1890	Age: 18 mos 5 days Dau of JD and LO Gnann
433	Joshua		Gnann	November	27	1826	November	13	1914	Confederate War Veteran
434	Susan	M	Gnann	November	30	1824	March	4	1862	
435	A	A	Gnann	October	9	1854	February	17	1855	
436	W	L	Gnann	August	13	1853	October	1	1853	
437	Daisy	Alberter	Kessler	April	25	1881	November	18	1883	dau of AA & JA Helmly
438	Amos	A	Kessler	August	10	1848	June	24	1904	
439	Josephine	Gnann	Kessler	October	10	1845	August	27	1921	
440	Mamie	Eliza	Kessler	April	21	1883	April	30	1963	
441	J	Andrew	Gnann	April	9	1852	February	29	1932	
442	Ann	E	Gnann	February	3	1857	August	29	1939	
443	David	M	Zeigler	November	2	1847	June	20	1909	
444	Catherine	A	Zeigler	November	14	1849	February	5	1905	Wife of D.M. Age 55 yrs
445	Robert	F	Zeigler	October	13	1885	August	1	1896	Age 10 yrs 9 mos 18 dys
446	Elizabeth	E	Zeigler				August	17	1894	Age: 16 yrs 7 mos 26 days
447	J	A	Zeigler						0	age: 2 yr 10 mos. 18 days
448	Eva	G	Zeigler	August	15	1883	January	2	1942	
449	Loreen		Zeigler	June	27	1922	October	1	1923	Child of A.A & C.E Zeigler
450	Austin	Augustus	Zeigler	September	17	1890	April	21	1959	
451	Cora	Eliza	Zeigler	May	7	1894	August	15	1972	
452	Nora	M	Zeigler	May	29	1874	August	29	1945	wife of John D
453	John	David	Zeigler, Sr	June	1	1880	August	25	1948	

454	Benjamin	F	Owens	August	3	1890	April	3	1982	
455	Alice	K Kessler	Owens	August	13	1887	November	2	1931	
456	Infant	daughter	Owens						0	infant daughter of B.F & A.K owens
457	Sara	A Hinely	Waldhour	April	7	1857	March	15	1938	
458	William	Henry	Waldhour	May	22	1856	December	29	1935	
459	Jane	L	Waldhour	March	6	1831	March	31	1893	Age: 62 yrs 25 days
460	Josiah	J	Waldhour	March	23	1820	February	7	1873	Age: 52 yrs 10 mos 11 dys
461	Alfred	C	Zipperer	September	27	1847	February	17	1877	Age: 29 years 4 mos 20 days
462	Alfred	J	Zipperer	March	13	1876	July	13	1877	
463	Charles	B	Hinely	June	27	1885	March	10	1913	
464	Laura	O	Hinely	January	11	1849	November	2	1889	wife of TH
465	Thomas	H	Hinely ?	September	25	1842	December	1	1912	
466	James	F	Gnann	January	19	1918	April	12	1918	Son of VB and BE
467	Fredric	B	Gnann	August	4	1921	August	10	1921	Son of VB and BE
468	Verdie	Bowers	Gnann	November	16	1892	January	31	1991	
469	Byron	E	Gnann	March	12	1884	September	30	1946	
470	Amanda	Helmly	Exley	June	8	1884	April	5	1957	
471	Charles	Benjamin	Exley	June	15	1881	May	6	1964	
472	Infant	son	Exley						0	son of CB Exley
473	Infant	son	Exley						0	
474	Kelly	Thomas	Exley	November	16	1918	December	11	1918	
475	Lonnie	Clary	Exley	October	23	1915	November	25	1915	
476	Nona		Kessler	October	31	1887	July	11	1913	
477	Seth	Jacob	Cleveland	January	23	1881	July	8	1954	
478	William	Cleotus	Rahn	March	8	1848	November	16	1935	
479	Anna	Cleopatra	Rahn	December	21	1847	January	23	1892	Husband: W C Rahn
480	Hugh	Axton	Rahn						0	Age: 10 mos 11 days

481	Berthram	L	Rahn	September	10	1891	April	28	1955	
482	Sheppard	Seneca	Rahn	February	2	1883	May	22	1959	
483	Wooden	Marker	Unknown						0	
484	Joshua	Bunyan	Kessler			1870			1949	
485	Sarah	Beebe	Kessler			1875			1936	
486	Susie		Kessler						0	
487	Leo		Kessler						0	
488	Hannah		Kessler						0	
489	Albert		Kessler						0	
490	Infant		Kessler						0	
491	Maggie	May	Kessler	June	19	1892	September	19	1938	
492	Joshua	Ward	Kessler	January	17	1892	July	8	1958	
493	Muda		Kessler	August	26	1902	March	8	1903	
494	Infant	son	Kessler						1896	of CW and AC Kessler
495	Aggie	C	Kessler	April	25	1859	May	17	1925	
496	Charles	W	Kessler	March	12	1854	January	16	1924	
497	Sheddie	Lamar	Kessler	February	16	1890	February	11	1965	
498	Infant	daughter	Seckinger				January	10	1899	infant daughter of E.M & Annie Seckinger
499	Luther		Seckinger	October	8	1895	March	24	1896	father E.M seckinger
500	Lila		Seckinger	January	10	1907	August	4	1910	father E.M seckinger
501	Annie (Sophie)Zettler		Seckinger	February	13	1878	February	4	1966	
502	Elmo	M	Seckinger	April	4	1866	September	13	1947	
503	Georgia	Francis	Helmly	February	8	1848	July	20	1931	wife of DA Helmly
504	Daniel	Albian	Helmly	November	7	1840	October	18	1907	
505	Louisa	E	Kessler	July	7	1831	December	3	1910	Age: 79 yrs
506	Joshua		Kessler	November	17	1827	March	5	1903	Age: 75 yrs
507	Brick	Coping	Unknown						0	

508	Brick	Coping	Unknown						0	with Wooden Marker
509	Brick	Coping	Unknown						0	
510	Brick	Coping	Unknown						0	(Wooden Marker) Child
511	Brick	Coping	Unknown						0	Child size
512	Brick	Coping	Unknown						0	Child size
513	Cliffton	E	Hutto	September	14	1891	May	16	1970	
514	Charlotte	Rahn	Hutto	February	18	1894	January	13	1938	wife of Cliffton E. Hutto
515	C	W	Beebe			1815	January	18	1889	Wife: Mary Beebe
516	Mary		Beebe			1814	April	4	1892	Husband: CW Beebe Age: 78 yrs
517	Ethel	Secklinger	Exley	March	17	1886	May	2	1931	
518	Wesley	Alexander	Exley	May	30	1883	August	28	1956	
519	Alexander	David	Exley	March	30	1913	January	16	1935	
520	Alton	Wesley	Exley	September	9	1909	December	17	1977	
521	Susan	Dasher	Exley	February	14	1904	November	22	1998	
522	Annie	L	Wendelken	March	9	1895	November	23	1895	
523	Ida		Wendelken						0	
524	Thomas	Rupert	Wendeken	November	14	1902	October	30	1905	
525	Charles	C	Beebe	June	20	1843	May	19	1925	Age: 81 yrs 10 mos 30 days
526	Hannah	S	Beebe	November	7	1850	December	29	1889	Age: 39 yrs 1 mo 22 days wife of CC
527	Little	Ollie	Beebe	July	5	1876	November	1	1877	
528	C	Ward	Beebe	April	4	1880	June	9	1898	Age: 18 yrs 2 mo 5 days
529	John	Josiah	Waldhour	October	31	1852	October	11	1925	
530	F	Lavicy	Waldhour	November	9	1859	August	6	1933	
531	Susie		Waldhour						0	Child
532	Alice		Waldhour						0	Child
533	Twins		Waldhour						0	Child
534	Elise		Waldhour						0	Child

535	Elton	V	Waldhour	Febuary	1	1884	April	18	1930	
536	Mamie	W	Nease	April	7	1884	June	24	1972	
537	Gordon	J	Waldhour	March	7	1906	September	13	1966	
538	Julia	Zeigler	Seckinger	May	3	1876	March	24	1932	
539	Harvey	Lee	Seckinger	March	19	1885	July	9	1959	
540	Laura	Dasher	Seckinger	January	5	1899	May	26	1966	
541	David	Haltwanger	Seckinger	July	17	1858	March	23	1940	
542	Cora	Waldhour	Seckinger	April	13	1863	February	3	1919	
543	Salome	E	Waldhour	November	18	1844	March	10	1923	
544	Ephrain	Robert	Waldhour	January	24	1827	October	19	1899	Age: 72 yrs 8 mos 25 daqys
545	Julia	C	Waldhour	October	13	1831	January	19	1880	Age: 48 yrs 3 mos 6 days
546	Almira	A	Waldhour	March	2	1860	April	26	1931	
547	Mary	E	Seckinger	January	9	1858	January	4	1933	
548	Lawrence	E	Seckinger	March	3	1854	February	23	1936	
549	Hubert	J	Zipperer	April	28	1888	September	16	1894	Age: 6 yrs 4 mos 3 days
550	John	T	Zipperer	December	5	1858	December	21	1909	
551	Salome	M	Zipperer	April	22	1860	February	28	1931	
552	Ellen	N Zipperer	Hinely	April	20	1876	April	21	1940	
553	Thomas	N	Hinely	February	28	1871	March	30	1928	
554	Hurbert	Lee	Hinely						0	1 yr old son of TN and Ellen
555	Ernest	N	Hinely	July	10	1908	February	15	1926	
556	Ben	W	Beebe	March	15	1851	October	14	1888	
557	George		Nease	October	13	1800	September	15	1884	
558	F	L	Nease	May	26	1833	September	3	1881	Age: 48 yrs 13 mos 7 days
559	Mary	Elizabeth	Nease	June	29	1835	June	5	1919	Dau of Benjamin and Elizabeth Dasher, wife of FL
560	Havilla	I	Nease				January	1	1885	dau of MC and FL Age: 17 yrs 1 mo 23 days
561	George	B	Nease	August	20	1859	November	1	1889	Married october 24 1889

562	Muller	Alen	Seckinger	April	5	1921	May	11	1940	
563	Gideon	W	Seckinger	December	4	1882	December	22	1937	
564	Effie	Waldhour	Seckinger	October	25	1890	July	19	1977	
565	Madge	Rosalyn	Seckinger	February	19	1912	September	20	1986	
566	Mattie	E	Waldhour	October	29	1890	May	5	1906	
567	E	Henrietta	Waldhour	July	4	1858	February	23	1920	
568	Marion	A	Waldhour	February	25	1854	January	27	1923	
569	Edgar	Roscoe	Waldhour	June	8	1884	July	30	1953	
570	Infant	son	Arnsdorf				August	18	1931	Infant son of WR and GP Arnsdorff
571	Florrie	Zeigler	Seckinger	January	7	1912	April	23	1965	
572	Charles	Augustus	Seckinger	March	12	1916	April	23	1965	
573	Kent	Charles	Secklinger	June	6	1949	March	17	1968	
574	Nora	Cannon	Zeigler	September	28	1929	September	12	1970	
575	Allen	Lewis	Zeigler	November	22	1922	December	12	1922	
576	Robert	Andrew	Zeigler	December	3	1914	January	7	1920	son of B.C & N.T Zeigler
577	Infant	son	Zeigler	August	2	1917	August	2	1917	infant son of B.C & N.T Zeigler
578	Infant	son	Zeigler						0	infant son of B.C & M.C Zeigler
579	Madge	Catherine	Zeigler	April	15	1881	November	19	1907	
580	Blois	Christopher	Zeigler	March	17	1879	June	30	1946	
581	Nina	Theresa	Zeigler	March	29	1889	December	22	1974	
582	Anna	Lucas	Gnann	September	14	1866	November	4	1947	
583	Charles	W	Gnann	March	25	1856	June	12	1915	
584	J	Agustus	Gnann	July	5	1889	July	12	1913	
585	Lula	C	Thompson	November	18	1852	February	10	1895	Husband: BS Thompson
586	Addie	Exley	Kessler	May	7	1897	July	5	1993	
587	Zannie	Lee	Kessler	April	25	1897	August	12	1962	Ga Cook Co A1 Dev Bn WWI
588	Alma	Exley	Kessler	January	8	1904	August	18	1998	

589	Curtis	Bartow	Kessler	January	21	1902	December	26	1951	
590	Irene	Rahn	Kessler	January	4	1868	February	18	1945	
591	Angus	B	Kessler	December	16	1859	December	20	1924	
592	Maggie	O	Kessler	November	19	1907	November	9	1942	
593	Ralph	W	Kessler	June	4	1905	January	26	1906	
594	Viola	G	Kessler	March	18	1896	April	30	1898	
595	Ellis		Kessler	December	22	1898	December	4	1899	
596	Trudie	A	Seckinger	October	13	1883	November	13	1967	
597	Robert	Franklin	Seckinger	April	18	1856	June	25	1943	Age: 87 yrs
598	America		Seckinger	March	10	1856	November	13	1908	
599	Infant	daughter	Seckinger	November	4	1897	November	10	1897	infant Daughter of Mr & Mrs R.F Seckinger
600	Ann	Elisa	Hinely						0	Age: 63 yrs 2 mos 22 days
601	Auther	Lee	Seckinger	April	12	1887	May	16	1890	death year ?
602	James	J	Helmly	December	31	1849	November	5	1934	
603	Susan	E	Helmly	February	10	1847	March	17	1920	
604	James	Girden	Helmly	November	1	1872	March	15	1961	
605	Wooden	Marker	Unknown						0	
606	Margaret	G	Biddenback	March	20	1845	February	13	1863	
607	Julia	F	Bidenback				May	8	1861	Age: 24 yrs 2 mos 14 days
608	Maud	Coon	Zeigler	June	24	1914	October	26	1994	
609	George	Augustus	Zeigler	July	30	1913	January	18	1991	
610	Herman	J	Exley	October	26	1923	February	6	2001	
611	Delores	S	Exley				December	4	1935	
612	Bergman	F	Exley	June	17	1881	January	11	1955	
613	Minnie	S	Exley	October	14	1887	August	8	1943	
614	Sarah	A	Gooding	March	17	1835	September	12	1913	
615	George	S	Exley			1880			1937	

616	Lilah	G	Exley			1892			1977	
617	Arthur	E	Zipperer	February	26	1914	June	28	1916	
618	Ella	Lynch	Zipperer	May	17	1890	May	29	1979	
619	Barney	A	Zipperer	March	12	1880	August	25	1968	
620	Norward	William	Zipperer	March	19	1909	December	4	1982	
621	Samuel		Biddenback	February	8	1804	June	29	1890	
622	Elizabeth		Biddenback				July	12	1869	Age: 62 yrs 2 mos 7 days
623	Martha	E	Hinely	January	21	1898	June	12	1912	
624	James	W	Hinely	January	14	1834	August	23	1896	
625	Ann	C	Hinely	January	14	1826	July	15	1894	Age: 68 yrs 5 mos 1 day
626	William	W	Hinely				November	9	1877	Age: 22 yrs 8 mos 7 days
627	Ida	F	Hinely				December	23	1871	Age: 2 yrs 1 mo 21 days
628	Georgia	May	Hinely	September	21	1898	May	21	1890	dau of James and Tallulah
629	Clinton	Staley	Hinely	May	5	1884	November	21	1903	son of James and Tallulah
630	Addie	Rahn	Kessler	September	17	1870	June	13	1956	
631	George	Lee	Kessler	January	27	1872	November	21	1952	
632	Bowman	Lewis	Kessler	May	9	1895	May	14	1898	son of G.I & A.L Kessler
633	Infant	son	Kessler						0	son of Mr and Mrs GL
634	William	Brown	Watkins	November	27	1852	January	23	1907	
635	Marie	Ophelia	Watkins	July	25	1851	January	24	1936	
636	Richard	Henry	Zittrouer				September	20	1934	son of Richard Ernest and Louisa Seckinger Zittrouer
637	Izabel		Powell	April	5	1854	March	1	1907	husband MC Powell
638	Mary	Elizabeth	McNeill	October	6	1850	March	27	1917	wife of M.D McNeill
639	J	Bartow	Kessler	October	8	1905	April	17	1990	
640	Lila	Mae	Kessler	August	3	1901	January	29	1990	
641	Silla	K	Hair	October	18	1913	June	9	1961	
642	David		Zittrouer	May	10	1833	July	12	1907	son of Corley and Ruth Zittrouer

643	Israel	E	Hinely	December	2	1853	July	23	1915	
644	Valilia	A	Hinely	October	3	1856	October	10	1897	
645	Julia	A	Hinely	September	1	1895	August	6	1914	
646	Heneth	E	Hinely	November	29	1890	July	20	1892	
647	Florence	V	Hinely	July	12	1910			1911	Age: 9 mos dau of Mr and Mrs FA
648	Gordon		Hinely	March	10	1919			1919	Age: 10 days son of Mr and Mrs FA
649	James	Solomon	Hinely	March	11	1931			1931	Age: 20 mos son of Mr and Mrs FA
650	Corley		Zittrouer	November	30	1911	August	1	1912	son of Corley and Ruth
651	Arthur		Zittrouer	February	22	1915	July	11	1916	son of Corley and Ruth Zittrouer
652	Maria	L	Zittrouer	October	17	1857	March	31	1935	L
653	William	H	Zittrouer	December	28	1851	September	13	1923	
654	Carrie	Viola	Hinely	December	4	1886	March	8	1983	
655	Carrie	C	Hinely	October	3	1897	September	8	1980	
656	Henry	W	Hinely	December	11	1895	September	13	1954	
657	Henry	W	Hinely	March	7	1931	March	23	1931	Jr.
658	Clyde	Exley	Bridgon	November	17	1907	September	13	1980	
659	David	Clifford	Bridgon	January	15	1905	March	13	1969	
660	Infant	son	Martin				July	25	1932	son of HB and Sallie
661	Emma	Lucile	Martin	May	11	1901	December	28	1917	
662	Lottie	R	Martin	April	25	1900	July	31	1977	
663	Jacob		Martin	September	25	1874	December	11	1935	
664	Nella	G	Martin	August	30	1882	March	28	1971	
665	Frederick	Reiser	Helmly				August	23	1908	
666	Gracie	Rahn	Helmly				February	13	1913	
667	Marian	Ann	Sherrod	March	16	1948	August	11	1951	dau of M and MCG
668	Marian	B	Sherrod	August	11	1925	September	19	1960	

669	Clarence	G	Sherrod	September	23	1918	September	19	1960	
670	Bernice	A	Exley	January	27	1886	February	15	1955	
671	Walton	E	Sharpe			1912			1996	
672	Herbert	P	Sharpe			1925			1966	
673	Meldrim	Clark	Exley	October	15	1889	October	13	1972	
674	Hattie	Helmly	Exley	March	14	1887	December	17	1971	
675	John	Samuel	Carigg	October	15	1925	February	8	2000	S1 US Navy WWII
676	Debbie	H	Exley			1954			2001	
677	Loyd	Eldred	Ferrell	February	15	1910	January	1	1990	84th Inf Div(Railsplitors)
678	Charles	Frederick	Gnann	August	11	1918	November	10	1996	
679	Cora	Loninack	Gnann	April	19	1897	February	14	1981	
680	Frederick	Bartow	Gnann	January	11	1895	June	30	1976	
681	Howard	W	Kessler	September	5	1905	May	21	1984	
682	Edwin	H	Seckinger	December	31	1886	September	11	1955	Rev.
683	Georgia		Reiser	June	17	1891	May	8	1973	
684	Harry	Cramer	Exley	August	8	1867	December	5	1962	
685	Gussie	Seckinger	Exley	December	30	1887	March	3	1954	
686	Blance	Exley	Kessler	June	26	1912	December	20	1993	
687	Alton	Anderson	Kessler	December	31	1910	January	12	1983	
688	Lillie	S	Exley	August	27	1916	December	23	1998	
689	Willis	H	Exley	June	16	1912	August	28	1969	TEC5 1337 SVC COMD Unit WWII
690	Barbara	Exley	Spergon			1938			2001	
691	Daniel	Lamont	Seckinger	December	29	1893	February	22	1973	M.D. American Legion
692	June	Worley	Seckinger	October	4	1897	November	8	1993	
693	Roscoe	G	Altman	September	10	1929	July	26	1993	US Navy Korea
694	Mary	Ellen	Hinely	December	14	1913	January	10	1961	
695	Mary	Lynch	Hinely	March	27	1889	March	12	1970	

696	Freddie	Austin	Hinely	June	6	1885	June	18	1966	
697	Bryan	Austin	Hinely	February	10	1926	January	4	1957	
698	David	Wertz	Seckinger	February	8	1918	October	30	1997	Sgt UsS Army Air Forces WWII
699	Mirian	Mallard	Seckinger	August	14	1924	April	26	1992	
700	Norma	Jean	Gnann	September	20	1930	June	2	1958	
701	Ava	Sheilds	Gnann	January	28	1893	January	25	1966	
702	Andrew	David	Gnann	May	11	1888	May	29	1972	DDS
703	Rupert	Macon	Waldhour	September	8	1913	February	17	1975	TECH5 US Army WWII
704	Lottie	M	Waldhour	December	31	1887	December	14	1967	
705	Charles	W	Waldhour	August	10	1886	March	4	1963	
706	Jesse	Rudolph	Fail	July	20	1928	March	15	1984	S2 US Navy WWII
707	Infant	son	Hart				September	22	1939	son of Otto and Mary D
708	Mary	Duggar	Hart	February	10	1914	February	10	2000	
709	Otto	Larry	Hart	May	27	1908	October	18	1996	
710	Laura	W	Fail	January	20	1892	September	20	1972	
711	John	G	Fail	April	2	1889	November	24	1966	
712	Thomas	Fulton	Seckinger	September	6	1901	September	25	1971	
713	Emma		Waldhour	April	6	1907	February	15	1952	
714	Nellie	Waldhour	Owens	November	10	1900	February	14	1975	
715	Robert	A	Owens	May	24	1894	December	22	1955	PFC BTRYB 118 Field WWI
716	Charlie	Bowers	Gnann	November	24	1892	December	30	1967	
717	Althea	Exley	Gnann	August	9	1894	February	23	1967	
718	George	A	Seckinger	October	25	1926	January	25	1985	PHM3 US Navy WWII
719	Maude	Rahn	Grovenstein	December	19	1892	July	25	1976	
720	Bernard	Hiller	Grovenstein	November	13	1883	November	2	1963	
721	Benjamin	J	Waldhour	August	6	1903	April	10	1961	
722	Claudine	B	Waldhour	January	4	1905	August	29	1968	

723	Hugh	D	Seckinger	April	11	1894	October	12	1960	
724	Ola	W	Seckinger	May	11	1898	January	28	1974	
725	Morris	Roof	Kessler	August	26	1922	October	16	1969	
726	Bessie	F	Waldhour	September	24	1898	October	28	1979	
727	Sydney	L	Waldhour	November	8	1893	June	27	1967	South Carolina PFC US Army WWI
728	Raymond	Nelson	Kessler	September	23	1906	January	21	1961	
729	Ola	M Gnann	Kessler	May	12	1904	January	6	1990	
730	Vaden	Edward	Kessler	May	15	1908	February	5	1973	
731	Rubye	Brown	Kessler	January	12	1911	June	13	2001	
732	Rosa	Mae Kessler	Wilde	July	4	1912	August	26	1991	
733	Infant	son	Zeigler				September	23	1950	son of RG and Ila
734	Ila	Kessler	Zeigler	October	13	1915	July	6	1997	
735	David		Seckinger			1920			2002	
736	Robert	Austin	Seckinger	December	15	1897	October	18	1966	
737	Julia	Exley	Seckinger	June	27	1892	February	29	1964	
738	Carroll	Cramer	Exley	September	8	1921	February	6	1999	
739	Eunice	Seckinger	Exley	June	22	1925	March	21	1984	
740	Elias	H	Hartzog	August	26	1913	May	7	1971	
741	Minnie	Crosby	Fail	April	13	1920	May	29	1989	
742	Walter	Louis	Fail	November	19	1920	February	11	2001	AMMH2 US Navy WWII

743	Fred	Wail	Owens	October	29	1921	January	27	1994	US Army WWII 3438th ORD MAM Co
744	Nora	Gnann	Seckinger	December	16	1893	July	21	1960	
745	Lester	Elmore	Seckinger	April	25	1891	February	7	1965	
746	William	Robert	Waldhour	October	26	1888	May	11	1966	
747	Ernest	Marion	Waldhour	January	30	1896	December	24	1977	WWI Pvt US Army
748	Ruth	Jane Ellis	Waldhour	November	20	1890	September	1	1972	wife of EM married 7/20/1944
749	Olivet	B	Waldhour	January	23	1899	December	14	1975	Pvt US Army WWII
750	James	H	Waldhour	January	5	1892	September	18	1965	
751	Viola	E	Waldhour	May	28	1897	March	14	1971	
752	Randall	Rudolph	Waldhour	January	13	1930	April	1	1999	PFC US Army Korea
753	Gloria	K	Waldhour	April	8	1933	October	7	1988	
754	Ivy	W	Blackwell	February	19	1933	August	19	1988	
755	Louise	Steere	Goodwin	June	8	1896	February	2	1962	
756	Tinzah	Steere	Helmly	November	30	1904	July	17	1967	
757	Israel	Clinton	Helmly	August	19	1904	January	8	1977	Jr.
758	William	Cornelius	Carigg	March	12	1921	October	2	1980	BM2 US Navy WWII
759	Infant	Daughter	Carigg				November	30	1954	dau of MM and WC
760	Evelyn	Seckinger	Baxter	December	20	1914	July	3	2002	
761	Clyde	Stephens	Baxter	January	30	1912	February	15	1992	Sr.
762	African	American	Monument							Sacred to the memory of those African-Am. Whose remains rest in this place.
763	Corner	NE African Am.	Monument							
764	Corner	SE African Am.	Monument							
765	Corner	SW African Am.	Monument							
766	Corner	NW African Am.	Monument							

767	Mary Alice	Owens	Zipperer	January	14	1924	June	9	2001	
768	Barry	Wayne	Zipperer	October	8	1948	May	26	1979	
769	Eunice	Graham	Couey	January	11	1925	February	16	1981	
770	Dianne		Couey	March	16	1950	November	6	1982	
771	William	H	Pittman	August	29	1917	November	3	1987	Sr Pvt US Army WWII
772	S	Charlene	Covington			1952			1990	
773	Willis	M	Covington			1928			1984	
774	Doris	E Waldhour	Parrott	September	19	1916	September	26	2000	
775	Hazel	Elizabeth	Helmly	December	15	1927	June	23	2001	
776	Clarence	Rodney	Parrott	July	3	1919	April	13	2000	
777	Effie	Kicklighter	Youmans	February	15	1908	March	9	2000	mother of Eulie T Zipperer
778	Eulie	Thomas	Zipperer	September	24	1932	November	28	1982	son of Effie Sarah K Youmans
779	George	Leon	Helmly	October	29	1924	March	4	1980	
780	Evelyn	Harrison	Owens	October	8	1931	August	23	1984	
781	Pearson	Ashley	Riley	December	20	1929	January	31	1991	
782	Martin	H	Smith			1910			1984	
783	Jackie	L	Smith			1924			1986	
784	Christopher	D	Macke			1982			1982	
785	Hawkins	Daniel	Hinely	February	28	1927	September	29	1995	US Navy WWII
786	Charles	Marvin	Exley	February	22	1909	March	7	1987	Sr.
787	Weldon	Waring	Exley	October	6	1939	October	6	1939	
788	Vergie	Webb	Exley	March	22	1911	April	3	1986	
789	Rupert	Lester	Seckinger	March	1	1914	November	19	1997	Sgt US Army WWII
790	Cora Belle	Exley	Seckinger	July	23	1917	October	21	1986	
791	Emory	Arte	Waldhour	November	14	1921	May	2	1992	PFC US Army WWII
792	James	William	Waldhour	March	5	1919	January	6	1983	Tec 4 US Army WWII
793	Helen	Josey	Waldhour	September	28	1924	May	15	1993	

794	Freda	W	Hodges	November	4	1917	August	21	1998	
795	Terry	Chesley	Bridgon	July	22	1984	February	6	1987	
796	Sheddie	Lee	Zeigler	March	17	1923	February	14	1988	Seaman First Class USN WWII
797	Sidney	Leon	Waldhour	February	25	1924	June	25	1996	T Sgt US Army WWII
798	Joseph	Anthony	Davis	June	15	1914	July	2	1983	
799	Irma	Malone	Davis	November	19	1916	November	18	1990	
800	Katherine		Seckinger	January	26	1976	June	20	1996	
801	Christopher	Emory	Newman	February	15	1997	February	19	1997	
802	Fred	William	Hinely	May	14	1917	March	21	1978	US Army WWII
803	Anna	Zeigler	DeLoach	December	8	1919	September	15	1966	
804	Charlesworth		DeLoach	July	23	1918	June	30	1988	Sgt US Army WWII
805	Callie	Whitfield	Kessler	October	22	1917	August	17	1995	
806	Infant	Son	Kessler				May	30	1943	of Callie and Mildred Kessler
807	John	Owen	Minors	April	5	1923	March	24	1999	Sgt US Army WWII
808	Angel	Pye	Minors	June	21	1979	June	21	1979	
809	Carolyn	Tucker	Perkins	December	7	1937	June	19	1997	
810	Evelyn	Elizabeth	Zeigler	March	21	1912	July	21	1999	Bush
811	John	David	Zeigler	August	18	1913	March	14	1983	Rev Jr
812	Charles		Waldhour	September	15	1921	May	27	1988	Jr.
813	Dallas	L	Waldhour			1926			1986	
814	Frank	Allen	Waldhour	September	1	1911	March	11	1986	CPL US Army WWII
815	John	Rupert	Fail	October	3	1915	February	16	1980	"Boots"
816	Richard	B	Hearn	January	6	1922	July	4	1993	US Navy WWII
817	Helen	Gnann	Hearn	January	24	1919	September	11	1992	
818	Mattie	I Floyd	Neurath	October	22	1898	June	11	1983	
819	William	J	Neurath	October	7	1891	August	30	1941	
820	W	J	Beasley	February	14	1916	July	5	1979	

821	Joseph		Bota			1921			2000	
822	Yolanda	T	Bota			1922			2000	
823	Carl	Allen	Neurath	August	6	1979	April	17	2001	
824	Berny	Lee	Smith	January	29	1922	May	15	1984	
825	Albert	Mallard	Hodge	July	27	1918	August	18	2001	
826	Lillian	Molnar	Toth	March	19	1897	February	13	1986	
827	John		Toth	August	24	1895	January	12	1979	
828	Gideon	Waldhour	Seckinger	December	21	1918	October	24	1964	
829	Calvin	Lee	Seckinger	January	11	1926	January	24	1999	
830	Charles	Bergman	Exley	September	9	1910	March	20	1988	
831	Marie	Morris	Exley	January	28	1918	July	24	1996	
832	Cecil	Glass	Gnann	May	18	1919	February	12	1972	
833	Loy	O	Helmly	June	28	1888	September	27	1921	
834	Rose	Leigh	Hutchins	September	27	1921				
835	Milton	P.	Zeigler	January	4	1927	June	25	2007	PFC, US Army, World War II
836	Matthew	Eldridge	Wilde	July	10	1917	July	18	2005	S/SGT. USAAC
837	Ralph	Gilbert	Zeigler	August	2	1917	March	2	2010	CPL, US Army, World War II
838	Jacob	Fulton	Seckinger	May	16	1923	February	7	2005	I will lift up mine eyes unto the hills, Psalm 121
839	Mallie	Hubert	Zipperer	September	29	1917	April	3	2003	S/SGT, US Army, WW II
840	Murray	H.	Metzger			1946			2009	
841	John	E.	Hodges	June	3	1914	December	19	2005	Our Children - Ann, Jacqueline, Johnny
842	Walter	C.	Perkins	March	27	1938	December	25	2005	Our Children - Walter, Jr., Cynthia, Shari
843	Annie	Laurie Hall	Exley	February	14	1914	February	7	2002	
844	Dora	Alice	Kessler	September	15	1927	February	13	2011	Loving Daughter, Special Sister
845	Ila	Pearl Waldhour	Owens	November	2	1922	March	2	2009	

846	Walton	Claudine Exley	Rowland			1931			2006	
847	Willgenia	Exley	Carrigg	June	5	1928	January	23	2010	
848	Betty	A.	Seckinger	December	14	1926	November	25	2008	
849	Ruth	F.	Hartzog	March	10	1918	September	4	2003	
850	Arthur	Bates	Zeigler	November	23	1922	September	8	2007	PFC, US Army, World War II
851	Janelle	Robinson	Seckinger	February	21	1927	November	14	2004	I am the vine, you are the branches. John 15:5
852	Katherine	Maner	Gnann	March	26	1922	April	11	2010	
853	Mildred	Dickerson	Kessler	March	26	1924	September	24	2004	
854	Derrel	C.	Kessler	June	14	1933	April	4	2007	PFC, US Army, Korea
855	Lorene	Owens	Riley	December	4	1929	February	21	2011	
856	Phillip	Lee	Owens	August	16	1954	March	8	2008	Son, A1C, US Air Force
857	Nicholas	David	Warren	March	2	1987	October	5	2011	
858	Earl	Ray	Owens	February	22	1949	October	13	2008	
859	Bonnie	Mae	Waldhour	June	8	1925	August	14	2007	
860	Ruby	Tillman	Minors	July	21	1925	May	15	2004	
861	Juli	Ann Stone	Gnann	October	23	1974	August	12	2009	
862	Willard	M.	Waldhour			1916			2003	
863	Patrice	Carrigg	Mullis	October	21	1946	June	7	2006	Our Daughter - Amy Mullis Schnobrich
864	Hillie	Jackson	Mullis	June	11	1943	April	24	2007	
865	Lois	H.	Pittman	May	25	1919	January	18	2008	
866	Nadine	A.	Seckinger	October	31	1936	March	20	2011	
867	Charles	Edward	Hinely	July	16	1925	January	11	2008	PFC, US Army, World War II
868	Reginald	Glynn, Jr.	Helmly	July	12	1932	January	2	2007	Married 2/18/1955, SGT, US Army, Korea
869	Carl	Heyward	Mock	July	28	1933	March	3	2004	Marreid Oct 30, 1953, FN, US Navy, Korea, Our Children - Deborah, Michael, Barbara, Bethany

870	William	P., Jr.	Jordan	August	19	1936	March	17	2011	Married 9/23/1961
871	Margret	Annaline Wylie	Murphy	September	15	1926	December	14	2003	
872	Bowman	A.	Kessler	February	5	1925	November	27	2005	
873	Michael	Alfred	Murphy	May	14	1911	December	17	1967	
874	James	Allen, Sr.	Helmly	April	18	1927	November	23	2011	

Names Listed in the Ebenezer Church Records But Not Found in the Cemetery.										
	Nora		Cleveland						0	Mother of Henry DC Cleveland
	Infant		Dasher	March	25	1883	March	25	1883	Infant of LA and DH Dasher 2 infant graves no marker
	Infant	Son	Exley	July	10	1920	July	10	1920	Infant son of Mr & Mrs WA Exley
	George		Gnann			1824	May		1833	
	John	C	Gnann	March	28	1772	May	4	1838	Age: 66 yrs 1 mo 7 days
	Infant		Gnann	September	19	1882	September	19	1882	
	Wyley	A	Gnann	October	10	1888	January	3	1889	
	Infant	Son	Grovenstein						0	of B and Emma Grovenstein Age: 7 days
	Infant	daughter	Windelkin	August	11	1743	August	11	1743	of Ralph and Lona Vindelkin
	Infant		Helmly	October	28	1889	September	30	1892	
	Daughter		Kessler						0	of CW and HC Kessler
	Infant	daughter	Kessler				May	30	1943	of Callis and Mildred Kessler
	Infant	Son	Martin				July	25	1932	infant son of H.B & Sallie Martin
	Johnnah		Sherrous	May	9	1774	February	2	1856	Mrs. Age: 81 yrs 9 mos 25 days
	Kylly	A	Waldhour	September	21	1895	February	13	1936	First name may be incorrect
	Infant		Unknown	December	1	1867	December	1	1867	

APPPENDIX D

PHOTOGRAPHS OF GRAVESTONE DAMAGE

Mont Repose Cemetery

Figure 35: Mont Repose Cemetery Gravestone Damage (a)

Figure 36: Mont Repose Cemetery Gravestone Damage (b)

Figure 37: Mont Repose Cemetery Gravestone Damage (c)

Figure 38: Mont Repose Cemetery Gravestone Damage (d)

Figure 39: Mont Repose Cemetery Gravestone Damage (e)

Ebenezer Cemetery

Figure 40: Ebenezer Cemetery Gravestone Damage (a)

Figure 41: Ebenezer Cemetery Gravestone Damage (b)

Figure 42: Ebenezer Cemetery Gravestone Damage (c)

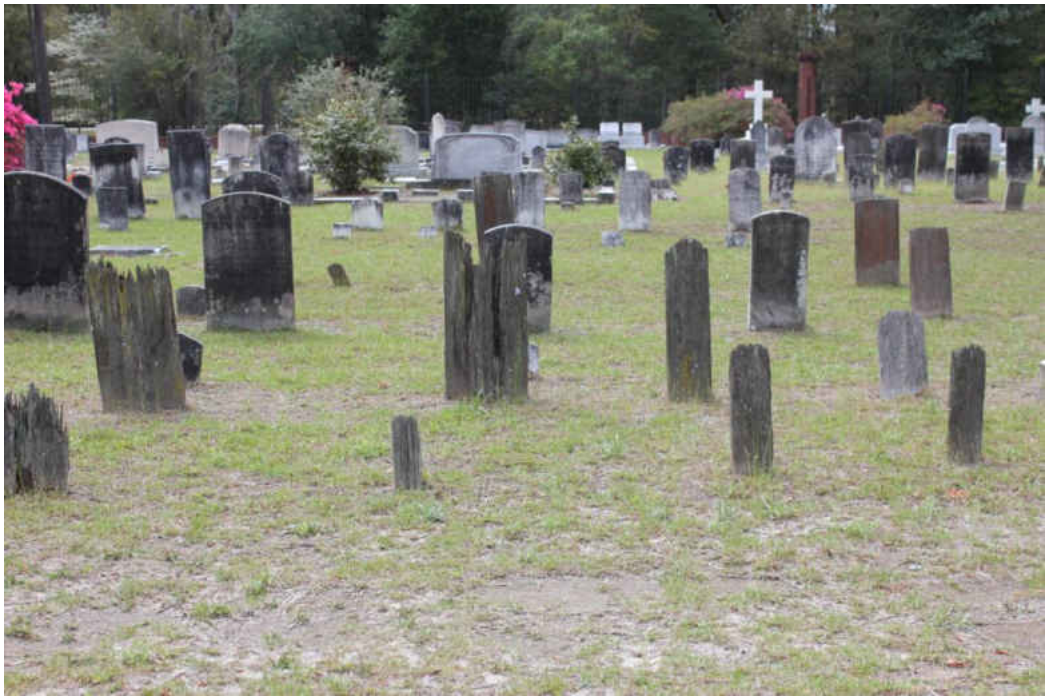

Figure 43: Ebenezer Cemetery Gravestone Damage (d)

Figure 44: Ebenezer Cemetery Gravestone Damage (e)

Figure 45: Ebenezer Cemetery Gravestone Damage (f)

Figure 46: Ebenezer Cemetery Gravestone Damage (g)

Figure 47: Ebenezer Cemetery Gravestone Damage (h)

Figure 48: Ebenezer Cemetery Gravestone Damage (i)