ARCHAEOLOGICAL INVESTIGATION OF THE STATE MONUMENT FRANKFORT, KENTUCKY

By M. Jay Stottman and David Pollack

With Contributions by Peter E. Killoran, Sarah E. Miller, Phillip B. Mink, Christina A. Pappas, Eric Schlarb, and Lori Stahlgren

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KAS REPORT NO. 104

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KAS Report No. 104

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ABSTACT

During November and December of 2004, Kentucky Archaeological Survey archaeologists excavated five graves that had been covered by a sidewalk in the late 1980s and attempted to relocate the remains of several individuals who were killed during the 1812 Battle of River Raisin. Analysis of the artifacts (e.g., coffins, coffin hardware, buttons, and textiles) and human remains recovered the State Monument generated new information on mid- to late nineteenth century mortuary patterns and the lives of five Kentuckians (Henry Edwards, Yves J. Thoreau, and W. C. Green who died in 1847 during the Mexican War Battle of Buena Vista, Edward F. Hogg who died in 1863 during the Civil War, and C. W. Gilmore a veteran of both the Mexican and Civil Wars who died in 1880 while a member of the Kentucky State Senate) who served their country. The three individuals who died in Mexico were buried in some of the earliest cast iron coffins used in Kentucky, with Green being packed in wood charcoal. Changes in the manufacture of military uniforms was documented with earlier uniforms being hand made and later uniforms being machine made and exhibiting greater standardization of buttons. Gilmore's association with the Mason's was reflected in his coffin hardware, and his relative high social and economic status was reflected in the quality of the clothing he was interred in and the recovery of a gold-gilded button. Analysis of the human skeletal remains indicated that several of the soldiers had led hard lives that involved a great deal of manual labor. Some were found to have suffered nutritional stress during the course of their lives and they may have joined the military to better their lives. Upon completion of the analysis of the human skeletal remains, they were reinterred at the State Monument on June 24, 2005. Unfortunately KAS archaeologists were not able to relocate the remains of the men who died during the Battle of River Raisin

ACKNOWLEDGMENTS

As with any project, this study could not have been accomplished without the assistance of several individuals. Among them are Myrisa Bryd, Suzanne Witte, Ann Wilkerson, Lori Stahlgreen, Sarah Miller, Eric Schlarb, Bill Sharp, Gwynn Henderson, Brian Molbeltini, Aaron Nusz, Chris Lankford, Chris Chandler, Rebecca Anderson, Roslin Roser, Larry Lose, and Marilyn Lose who helped with the fieldwork. Tyler VonHandorf and Ned Morgan helped process and conserve the metal artifacts, wood, and textiles. George Crothers provided laboratory and storage space within the William S. Webb Museum of Anthropology and Naoko Yokoyama-Crothers provided laboratory oversight and assistance. Alexandra ByBee provided constructive editorial comments on the drafts of the historic artifact chapters. The staff of Facilities Management were a pleasure to work with and greatly assisted us with the removal of the sidewalk, backfilling of the grave shafts, and landscaping. Roger Stapleton, Tom Fugate, and Scott Walters of the Kentucky Heritage Council helped with the retrieving of Hogg's coffin and Tom also assisted with the fieldwork. Paul Ramey and Lori Sahlgren prepared the line drawings and maps, and David McBride took the photographs. John Trowbridge deserves thanks for not only providing oversight of the project, but for assisting in the field and for his willingness to share information with us. As always, Ed Winkle and Barbara Gortman handled all of the administrative details for the project.

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INTRODUCTION

From November 15, 2004 to December 1, 2004, archaeologists from the Kentucky Archaeological survey excavated five graves of individuals (three Mexican War veterans, one Civil War veteran, and one veteran of Mexican and Civil wars) interred at the State Monument within the Frankfort Cemetery (Figures 1 and 2). This work was conducted as a cooperative effort with the Kentucky Heritage Council, Kentucky Historical Society, and Historic Properties. In addition, to excavating five graves, the foundation for a grave marker was discovered in an area where a sixth grave, a veteran of the Mexican War was thought to be located, and an attempt was made to relocate the remains of veterans of the Battle of River Raisin.

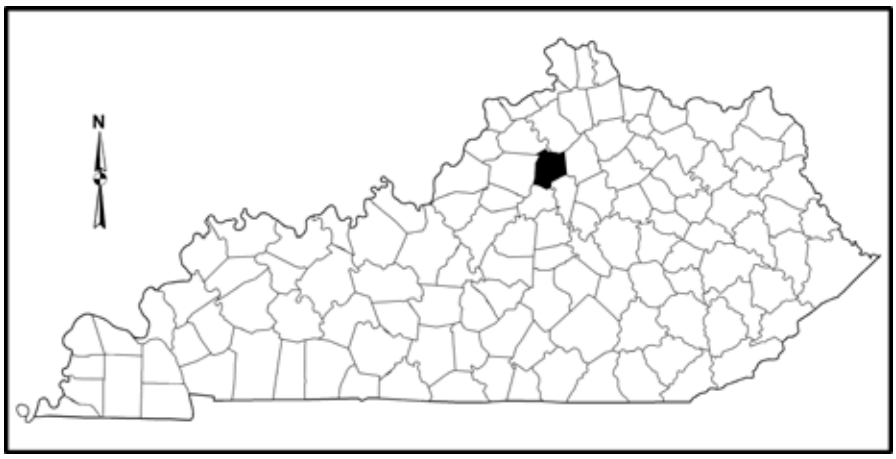


Figure 1. Location of Franklin County.

The decision was made to relocate several graves after it was discovered that in the late 1980s the headstones marking these graves had been relocated to make way for the construction of a sidewalk. In 2004, examination of an old postcard by John Trowbridge indicated that a headstone was once located in the vicinity of the present sidewalk. This discovery was made as part of his ongoing research into the history of the State Monument. On August 8, 2004 Kentucky Archaeological Survey archaeologists ran ground penetrating radar over this area. The results of this work indicated the presence of an anomaly that could be a grave shaft in the area where the headstone had been located. Shortly thereafter a map showing the location of all of the six headstones that had been moved was brought to the attention of representatives from the Kentucky Heritage Council, Kentucky Historical Society, and Historic Properties and a decision was made to relocate the graves that had been covered by the sidewalk.

John Trowbridge's research into the State Monument also led him to identify an area near the monument where the remains of several Kentuckian's who died during the War of 1812 Battle of River Raisin may have been reinterred. Examination of this area

with ground penetrating radar revealed the presence of two anomalies that warranted additional work.

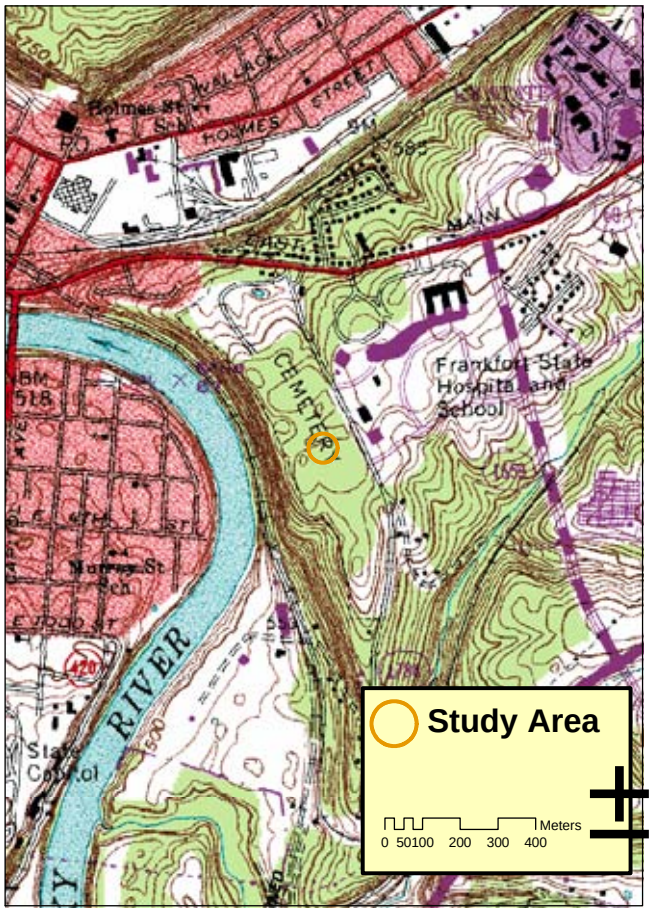


Figure 2. Location of the State Monument, Frankfort Cemetery, Franklin County, Kentucky (Frankfort East 7.5 minute USGS Quadrangle).

Following the removal of the sidewalk from the areas where the six graves were reported to be located each area was examined by KAS archaeologists. These efforts resulted in the relocating of the graves of Henry Edwards, Yves J. Thoreau, and W. C. Green who were killed in 1847 during or shortly after the Battle of Buena Vista in Mexico, C. W. Gilmore a veteran of the battle of Buena Vista and the Civil War who lived until 1880, and Edward F. Hogg a Civil War veteran who died of typhoid in 1863. The grave of William T. Willis who was killed during the Battle of Buena Vista could not be relocated. That a base for a large marker was documented in this area coupled with the absence of a grave shaft suggests that he may have been interred elsewhere on the State Mound.

Efforts to locate the veterans of the Battle of River Raisin's were not as successful, though the presence of the graves of three Civil War veterans was confirmed. Units placed in this area also documented the presence of a prehistoric component that dates to the Middle Archaic period.

Analysis of the artifacts (e.g., coffins, coffin hardware, buttons, and textiles) and human remains recovered during the course of this study generated new information on mid- to late nineteenth century mortuary patterns and the lives of five Kentuckians who served their country. Upon completion of the analysis of the human skeletal remains, they along with coffin fragments were reinterred at the State Monument on June 24, 2005. The remaining artifacts, primarily coffin hardware, buttons, textiles, wood, and prehistoric chipped stone debris were curated at the University of Kentucky William S. Webb Museum of Anthropology. This report describes the results of the field and laboratory investigations conducted during the course of this study.

BACKGROUND

ENVIRONMENTAL BACKGROUND

Both prehistoric and historic peoples have influenced and been influenced by their environment, which sets the boundaries for, but does not determine the kinds of lifestyle they will pursue. The natural environment, which consists of a number of interrelated factors (i.e.; physiography, geology, climate, soils, flora, and fauna), is discussed below as it relates to Franklin County. Portions of this section were modified from Sharp (1989).

Franklin County is located in north-central Kentucky. It is bordered by Anderson, Scott, Woodford, Shelby, Henry, and Owen counties and lies within two physiographic regions. The eastern half is included in the Inner Bluegrass, while the western half is located within the Outer Bluegrass (McGrain and Currens 1978). The gently rolling topography of the Inner Bluegrass is distinctive from the narrow winding ridges and valleys that characterize the Outer Bluegrass. Frankfort is located in the central portion of the county, near the boundary between these two physiographic regions.

Since Franklin County is located in two physiographic regions, the underlying geology differs between the eastern and western portions. The eastern half of the county is underlain by middle Ordovician age limestone strata, while the western half of the county is underlain by upper Ordovician age, thin-bedded limestone and shale, which are less resistant to weathering (McFarlan 1943; Pomeroy 1968).

Kentucky's current climate is classified as humid continental, exhibiting a significant temperature range between seasons and a moderate amount of rainfall (Sharp 1989). Warm summers and cool winters are the norm, and when extremes in temperature occur, they are usually not prolonged. The growing season is fairly long, averaging 181 days. Annual precipitation in the county is about 44 inches. The climate is favorable to growing a wide variety of crops (McDonald 1985).

While the climate of Kentucky has been relatively stable since the Altithermal period, roughly 4000-5000 years ago when the climate was slightly warmer and dryer than at present, earlier climactic differences of interest to archaeologists revolve around periods of glaciation during the Late Pleistocene (11,000-9,000 B.C.). This resulted in coniferous rather than deciduous forests and a more park-like or tundra environment. The retreat of this glaciation made possible the establishment of the deciduous forest environment (Sharp 1989).

The soils in the project area are classified as Elk, McAfee, or Otwell Series (McDonald 1985). The Elk Series consists of deep, well-drained and moderately well-drained soils that have a loamy subsoil found on nearly level to strongly sloping stream terraces. This series also includes moderately deep, well-drained soils that have clayey subsoil on gently sloping to strongly sloping low uplands (McDonald 1985). The

McAfee Series consists of moderately deep, well-drained soils that have moderately slow permeability, and the Otwell Series consists of deep, well-drained soils that have a very slowly permeable fragipan (McDonald 1985).

The flora and fauna in Kentucky has changed much over time. During the Pleistocene, big game (megafauna) included mammoth, mastodon, bison, ground sloth, horse, musk ox, stag-moose, and peccary. All of these animals were native to Kentucky during the Ice Age, and became extinct or moved north as the glacial ice retreated (Braun 1950; Tankersley 1996).

When Euro-American settlers entered Franklin County in the mid-eighteenth century, they encountered a wide variety of fauna. Historic records suggest the common occurrence of species, such as bison, elk, panther, bear, and wolf, but these had largely disappeared by the nineteenth century (Sharp 1990, 1996). Opossums, raccoons, squirrels, striped skunks, muskrats, minks, red foxes, eastern chipmunks, woodchucks, white-tailed deer, cottontail rabbit, mice, and other species also were present and still exist today. In addition, the area is home to large numbers of avian species, fish, mollusk, reptiles, and amphibians.

Prior to extensive clearing for agriculture, the Frankfort area was part of the larger Western Mesophytic forest, with walnut, oak-hickory, sugar maple, ash, and beach being the dominant climax species, and with elm, hackberry, Kentucky coffeetree, basswood, sycamore, willow, and cedar also been present. Understory species included sumac, blackberry, poison ivy, red bud, wild grape, dogwood, and spicebush (Braun 1950).

PREHISTORIC BACKGROUND

The following section is a general overview of the prehistory of central Kentucky, which is viewed within the larger framework of the culture history of Kentucky. This overview has been compiled from several sources (French 1996; Jefferies 1990, 1996; Kleber 1992; Lewis 1990, 1996; McBride and McBride 1996; Muller 1986; Pollack 1990; Railey 1990; Sharp 1990, 1996; Tankersley 1990, 1996). For the purpose of this report the cultural sequence below has been divided into broad periods, Paleoindian (10,000 - 8,000 B.C.), Archaic (8,000 - 1,000 B.C.), Woodland (1,000 B.C. - A.D. 1000), Late Prehistoric (A.D. 1000 - 1700), Contact Period (A.D. 1540 – 1795), and Historic (A.D. 1750 - present).

Paleoindian Period (10,000 – 8,000 B.C.)

The earliest recognized cultural period in Kentucky is the Paleoindian. Based on radiocarbon dates the Paleoindian period, in the eastern United States, ranges from approximately 9,500 to 8,000 B.C. (Tankersley 1996). People were probably living in Kentucky prior to 10,000 B.C. but archaeological evidence of their occupation has yet to be documented (Pollack 1990:3). Based on projectile point styles, Tankersley (1996) divides the Paleoindian occupation of Kentucky into three subperiods: Early, Middle, and

Late Paleoindian. Kentucky's climate at 9,500 B.C. was much cooler and more moist than today. However a warming trend had begun at this time. This warming caused drastic changes in Kentucky's vegetation, which led the megafauna, that had previously roamed Kentucky, to either follow the retreating glaciers or to become extinct (Tankersley 1996:21).

The Early Paleoindian subperiod in Kentucky ranges from 9,500 to 9,000 B.C. and is associated with Clovis projectile points. These early inhabitants of Kentucky had a distinctive toolkit adapted to hunting and processing big game. The primary tools used by Paleoindian groups, included fluted projectile points, prismatic blades, flaked stone knives and scrapers, and bone, ivory or antler implements, such as awls and sewing needles (Tankersley 1996:24). This toolkit originated in Eurasia and changed little as the ancestors of the Paleoindian hunters moved into North America (Tankersley 1996:24). Living in small, highly mobile hunter-gather groups, Paleoindian subsistence strategies focused on the exploitation of Pleistocene megafauna (Tankersley 1990:80). Mastodon, mammoth, bison, horse, tarpir, camel, and peccary are just a few of the big game mammals that Paleoindian groups hunted. The Paleoindians did not, however, depend solely on megafauna resources but instead employed a mixed foraging strategy, exploiting small game, marine, and plant food resources in addition to megafauna (Tankersley 1990:80).

The Middle Paleoindian subperiod (9,000-8,500 B.C.) is marked by stylistic diversity of toolkits compared to Early Paleoindian toolkits. Middle Paleoindian tool kits are different in that the Clovis point was replaced with point types, such as Gainey and Cumberland, and the core and blade technology was replaced by a technique called bipolar lithic reduction (Tankersley 1996:31). These technological changes most likely occurred in response to the use of poorer quality lithic resources (Tankersley 1996:31). Changes in vegetation coupled with substantially reduced populations of megafauna forced a change in the subsistence practices of the Paleoindians. A mixed foraging strategy began to emphasize the hunting of both large and small game.

The Late Paleoindian subperiod (8,500-8,000 B.C.) is once again marked by changes in Paleoindian toolkits. The fluted points of the Early and Middle periods were replaced by unfluted point types, such as Lanceolate Plano points and Dalton Cluster points (Tankersley 1996:33). The toolkit became more diverse including tools, such as backed bifaces, proximal end and side scrapers, asymmetrical end scrapers, narrow end scrapers, and hafted perforators. As in earlier periods, a changing environment was the driving force behind the addition of new tool types. Tusk-bearing megafauna had become extinct and in response Paleoindian peoples had to manufacture tools once made from ivory, from lithic resources (Tankersley 1996:35). The ice age was over, megafauna were extinct, and the environmental changes during the Late Paleoindian period were the most drastic since that time. As subsistence resources became dispersed throughout the state the Paleoindians became generalized foragers, not needing to move as often or as far (Tankersley 1996:35). Game such as white-tail deer, bear, and turkey became important sources of food.

Archaic Period (8,000 – 1,000 B.C.)

Retreating Pleistocene glaciers and the onset of the Hypsithremal climatic interval marked a shift in the climate of Kentucky and also in the lifeways of its inhabitants. The climatic changes that forced the northern migration/extinction of megafauna also changed the nature of Kentucky's forests. The once circumglacial coniferous forests were replaced by mixed deciduous forests, thus allowing modern species of flora and fauna to thrive (Jefferies 1990:150). The Archaic period begins around 8,000 B.C. with a slow shift from the exploitation of megafauna to a more varied subsistence strategy. Archaic groups began to exploit forest game like the white-tail deer as well as plant foods, especially nuts (Jefferies 1990). Marine resources, such as freshwater mussels, also became important sources of food.

The Early Archaic subperiod (8,000-6,000 B.C.) is defined by major technological and social changes that occurred after the retreat of the glaciers at the end of the Pleistocene Epoch (Jefferies 1996:40). The appearance of basal notched projectile points, such as the Kirk and LeCroy types, is the only major change to the Archaic tool kit. Early Archaic assemblages contain few tools related to collecting or processing plant food, which suggests that like earlier Late Paleoindian groups, they relied more on game animals than plants as a source of food (Jefferies 1996:40). The absence of middens, features, and burials in the Early Archaic archaeological record suggests that Early Archaic sites were only used for short periods of time (Jefferies 1996:40).

The Hypsithermal climatic interval, which began around 7,000 B.C., caused the midcontinent to gradually become warmer and dryer than today (Jefferies 1996:47). This shift in climate affected the plants, animals, and people of Kentucky. The Middle Archaic subperiod (6,000-3,000 B.C.) in Kentucky is primarily known from large shell middens sites situated along the Green River. By 6,000 B.C. regionally distinct archaeological cultures, in part caused by regional populations adapting to local environments, had developed throughout the eastern United States (Jefferies 1996:47). The projectile points of the Middle Archaic toolkit of eastern and central Kentucky are typically defined as Morrow Mountain, Matanzas, and Big Sandy II, while projectile points most often found in Middle Archaic contexts in western Kentucky are types, such as Eva, Cypress Creek, and Big Sandy (Jefferies 1996:47). Other additions to the toolkit, include groundstone implements, such as axes, pitted anvils, grinding stones, and pestles, that were used to process a wide range of plant foods (Jefferies 1996:48). One important device, that appears during this period is the atlatl, which extended the range to which a spear could be thrown (Jefferies 1996:48). Habitation sites during the majority of the Middle Archaic are primarily small and appear to have been used for a short period of time. There are, however, a few known large sites which contain deep middens and a high diversity of tool types that date to this subperiod. These sites appear to represent long-term or perhaps even year-round base camps (Jefferies 1990:151).

The climate in the eastern United States began to moderate around 3,000 B.C. and Late Archaic (3,000-1,000 B.C.) groups remained largely mobile as represented by the numerous small sites dating to this subperiod found throughout the state (Jefferies

1996:57). The staples of the Late Archaic diet included white-tail deer and hickory nuts, supplemented by smaller mammals, birds, fish, seeds, fruits, and other nuts (Jefferies 1996:56). The presence of native and tropical cultigens at some Late Archaic sites suggests that groups were beginning to experiment with horticulture/gardening (Jefferies 1990:153, 1996:57). A wide range of flaked stone, groundstone, bone, and wood tools included in the Late Archaic toolkit reflects this shift in subsistence (Jefferies 1996:55). As shown by Late Archaic assemblages, typical projectile points have large straight, expanding, and contracting stems, but smaller stemmed and side-notched types also are common (Jefferies 1996:55). Social complexity is also apparent during this time as reflected in the appearance of exotic goods, such as Great Lakes copper and nonlocal chert types, in burial contexts (Jefferies 1996:54).

Woodland Period (1,000 B.C. – A.D. 1000)

The subsistence patterns of Early (1000 – 200 B.C.) and Middle Woodland (200 B.C. – A.D. 500) groups changed little from that of their predecessors. They continued to utilize hunting and gathering strategies. Deer, turtle, fish, small mammals, and birds were the main sources of protein for Woodland groups and they continued to gather and store nuts (Railey 1990:250). A trend towards sedentism during the Woodland period and an increase in horticultural practices led to a less mobile lifestyle. The size and number of individuals that lived in a settlement together seems to vary from place to place. One technological advance which occurred during the Woodland period was the appearance of ceramics. Ceramics appear in eastern Kentucky around 1000 B.C. but it is not until 500 B.C. that they appear in the western part of the state (Railey 1990:249).

Some plants domesticated during this time, include maygrass, sumpweed, and knotweed (Railey 1990:250). Woodland groups also cultivated sunflower but its domestication had begun during the Late Archaic subperiod (Railey 1990:250). These varied subsistence practices were seasonal. Planting, tending gardens, and fishing were spring and summer activities, while harvesting wild and domesticated plant species as well as gathering and storing mast products were autumn activities (Railey 1990:248). Hunting deer and other game was a late autumn and winter activity.

The Adena and Hopewell concepts, which emerged in the early part of the twentieth century, were constructed from research that focused on the burial practices of Woodland peoples. These two concepts are the synthesis of the excavation of several small burial mounds in southern Ohio (Railey 1990:252). Adena in Kentucky is thought to date from 500 B.C. to A.D. 200 (Railey 1990:254). Adena burial mounds seldom represent a single event but instead contain several individual tombs, each tomb being covered with earth at the conclusion of the mortuary event (Railey 1990:253). Ceramic vessels are rarely found in association with individuals, instead Adena mortuary items, include projectile points, stone gorgets, pipes, celts, simple and engraved tablets, galena, bone and shell tools, and beads (Railey 1990:253). Hopewell sites date from A.D. 1 - 500 and tend to be concentrated in southern Ohio. However, there are a few recorded Hopewell sites in Kentucky. Hopewell mounds differ from Adena mounds in that they tend to cover a single tomb (Railey 1990:254). Additional interments are distributed

horizontally in Hopewell contexts instead of vertically, as in Adena contexts (Railey 1990:254). Whole ceramic vessels, mica cut-outs, obsidian artifacts, platform pipes, terra-cotta figurines, and copper celts are items that appear in Hopewell contexts and are absent or rare at Adena ones (Railey 1990:254).

The increasing trend toward sedentism throughout the Woodland period appears to have been accomplished without economic reliance on intensive horticulture (Railey 1990:256). However, during the Late Woodland subperiod (A.D. 500–1000) there is an increased reliance on native cultigens and during the later part of this subperiod maize becomes a significant component of regional diets (Railey 1990:257). The most important technological change appearing during this subperiod was the replacement of notched and stemmed projectile points with smaller, finely knapped triangular points (Railey 1990:248). The appearance of triangular points around A.D. 800 marks the introduction of the bow and arrow into Kentucky.

Late Prehistoric Period (A.D. 1000-A.D. 1700)

The Late Prehistoric period in Kentucky is defined by two different cultural traditions: Mississippian and Fort Ancient. Mississippian peoples occupied western Kentucky, as well as the extreme southern and southeastern portions of the state. The Fort Ancient tradition flourished in central, northern, and eastern Kentucky, as well as southwestern Indiana, southeastern Ohio, and western West Virginia.

The Mississippian tradition continued many cultural trends, such as the establishment of regional settlement hierarchy, that were present in the Mississippi River Valley towards the end of the Late Woodland subperiod (Lewis 1996:128). Maize agriculture coupled with the hunting of animals, such as white-tail deer, fishing, the cultivation of starch-oily seed plants, such as chenopod, maygrass, and sunflower, and the gathering of plant foods, such as hickory nuts, pigweed, and knotweed represented the main subsistence base of Mississippian groups (Lewis 1996:129). The intensification of food production that occurred around A.D. 1000 permitted settlements along the floodplains of major rivers to become larger and support a greater number of households. Building on the growing sociopolitical complexity of this period, Mississippian settlements patterns can be distinguished from the previous Late Woodland subperiod by a settlement hierarchy that had a greater number of settlement types. In comparison to the hierarchy present among Late Woodland period communities, which consisted of villages and farmsteads, the Mississippian settlement hierarchy also included towns and hamlets. Towns, which were situated at the top of the Mississippian settlement hierarchy, contained a central plaza, multiple mounds, and supported sizable populations. The platform mounds constructed at these sites were home to elite members of society. Hamlets were larger than farmstead, but smaller than villages.

Large hoes, adzes, abraders, gravers, and picks joined the bow and arrow as the main components of the Mississippian toolkit. Nonlocal materials, such as marine shell and copper, also have been recovered from Mississippian sites. Muller (1986:251) notes that the appearance of these artifacts probably represents hand-to-hand exchange rather

than the long-distance movements of traders. Ceramic vessel types became more varied and the use of shell temper increased as the Mississippian period progressed. Most of the ceramics from lower Ohio Valley sites are plain wares, either fine or coarsely tempered (Muller 1986:238). Finely tempered ceramics were used primarily for activities, such as eating, while coarsely tempered wares were used for food storage and/or food preparation.

The Fort Ancient tradition is generally believed to be a response by local populations to increased reliance on agriculture, increasing sedentism, and an accompanying rise in sociopolitical complexity (Sharp 1990:469). The subsistence practices of Fort Ancient peoples relied on the cultivation of corn and beans, which were introduced towards the end of the Woodland period. The agricultural practices of Fort Ancient groups were supplemented by wild game, fishing, and the collection of wild plants (Sharp 1990:469). Fort Ancient villages were often organized into circular or semi-circular patterns surrounding a central plaza (Sharp 1990:469). Between 100 and 300 individuals lived in these villages. Although Middle Fort Ancient peoples built burial mounds (A.D. 1200-1400) they lacked the settlement system hierarchy and social stratification of their Mississippian counterparts (Sharp 1996:161).

Ceramics produced by Fort Ancient peoples serve to distinguish the Fort Ancient tradition not only from other Late Prehistoric groups but also attributes of these ceramic vessels have been used to help define divisions within the Fort Ancient tradition itself (Sharp 1990:469). Prior to A.D. 1400 cordmarked jars dominate Fort Ancient ceramic assemblages. After A.D. 1400 ceramic vessel types, such as bowls and saltpans, become common. The lithic toolkit of Fort Ancient people included small triangular arrow points as well as a variety of cutting, scraping, and drilling tools manufactured not only from stone but also animal bone.

Contact Period (A.D. 1540-1795)

The most striking change in the Late Prehistoric period occurred with the first contacts between Native Americans of the interior and the Europeans who founded the colonies along the Atlantic coast. The European contact drastically and permanently altered the cultural patterns of Native Americans (Harrison and Klotter 1997:8). By 1750, the Indian population had declined sharply, partly because of deadly epidemics and warfare. The Shawnee, who struggled with the early Kentucky settlers more than any other tribe, probably numbered no more than three or four thousand by 1750. The Shawnee and other indigenous groups, possibly Cherokee, had left Kentucky by the end of the 1700s.

FRANKFORT HISTORY

The city of Frankfort is physically dominated by the Kentucky River, which flows through the city, dividing it. The river has played a significant role in the history of

Frankfort. Providing transportation and sustenance: initially for Native Americans groups and later Euro-Americans who resided in Frankfort.

One of the first to help open Kentucky to Euro-American settlement was the famed Daniel Boone, originally of North Carolina. Boone and a few others explore Kentucky eventually leading to a full-scale migration into the area. By 1773 a number of surveying parties were headed to Kentucky to find their fortunes by turning land warrants granted for service in the French and Indian War into actual claims on surveyed land (Kramer 1986:10). Settlements began to emerge at places like Harrodsburg, Danville, Lexington, Logan's Fort, Boonesboro, McClelland's Fort, Houston's Station, and Squire Boone's Station.

The McAfee brothers formed one of these surveying groups. Eventually coming upon the bottom land near the present location of Frankfort. The brothers were impressed by what they saw and Robert McAfee proceeded to lay out 600 acres in two tracts, one of 200 acres and one of 400 acres (Kramer 1986:10). They also surveyed a number of tracts in what is now Mercer County, where they eventually settled. Robert McAfee allowed his first claim at the Kentucky River to lapse. At the time the McAfee brothers were making their land claims, others were surveying and settling nearby. A number of claims were made for the land upon which Frankfort now sits, when attorney Humphrey Marshall realized that Robert McAfee had allowed his claim to lapse. In 1784, Marshall entered a claim to the tract and by 1786 Virginia governor Patrick Henry signed Marshall's claim (Kramer 1986:17) (Figure 3). Marshall is one of the most colorful figures in Kentucky history. Some of his questionable land dealings ended up in court, including his claims to property in Frankfort. Marshall was eventually awarded the Frankfort property and sold it immediately to James Wilkinson (Tachau 1992:610).

Frankfort is rumored to have acquired its name through Stephen Frank, a young settler from Lexington. It seems that Frank and a number of others were on their way to Mann's Lick in Jefferson County to obtain salt. While camping at a ford in the Kentucky River, Frank's group was attacked by Native Americans. Frank was immediately killed and a few others were wounded while the rest of the party escaped. Soon the crossing point in the Kentucky River became known as "Frank's ford" and eventually Frankfort (Kramer 1986:18).

The first to envision a bustling river town where Stephen Frank had fallen was General James Wilkinson. Wilkinson fought in the Revolutionary War with great success. Arriving in Kentucky in 1784, he built residences and businesses in Louisville and near Lexington. In 1786, Wilkinson purchased the land along the Kentucky River from Marshall. Wilkinson then petitioned and obtained a bill from the Virginia legislature designating his new property as the town of Frankfort (Kramer 1986:21). Even though Wilkinson had great plans for Frankfort as a center of trade for Kentucky, he never resided in the town.

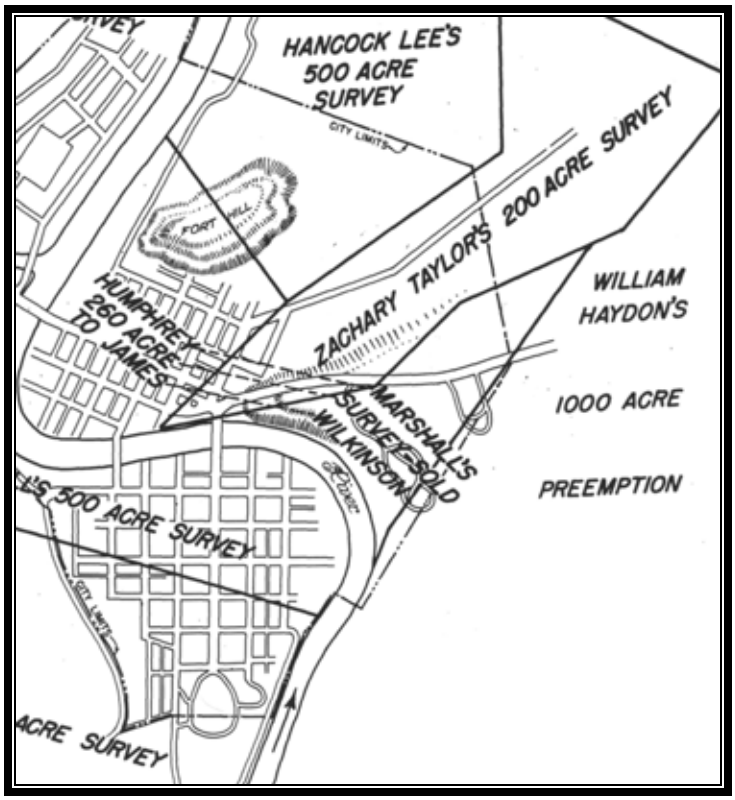


Figure 3. Map Showing Original Land Grants in Frankfort (Jillson 1945).

A number of prominent Kentuckians, particularly James Wilkinson, advocated that Kentucky become an independent republic, completely separate from the United States, so as to facilitate trade with the Spanish along the Mississippi. Wilkinson envisioned Frankfort as a key city in this new republic, in which he conveniently owned a great deal of land (Kramer 1986:34-37). When Wilkinson's co-conspirators had a change of heart, the "Spanish Conspiracy" was dead.

In early 1792, with the city growing slowly, Wilkinson sold his property to Andrew Holmes, an area businessman. Later that year when Kentucky became the fifteenth state, Governor Isaac Shelby selected Frankfort as the capitol of Kentucky, largely due to Holmes' persuading. Once named the capital, Frankfort began to grow quickly. By 1800 the population stood at 628, making the town the second largest in the state after Lexington (Kramer 1986:41). As the population of Frankfort and Kentucky grew, so did crime. In 1794, the Legislature approved expenditure of $1,500 to erect a public jail (Acts of the Legislature 1794). In 1798, Judge Harry Innes sold his property at Holmes Street in Frankfort for the purpose of building a penitentiary. By 1810, the population of Frankfort had grown to 1,099. This number included at least 407 slaves (1810 U.S. Census).

English traveler Fortescue Cuming visited Frankfort in the first decade of the nineteenth century and described the town as having ninety houses, "[m]ost of them well

built with brick, and some with rough but good marble of a dusty colour… the old wooden houses are rapidly disappearing to give place to brick…" (Kramer 1986:42).

Local Frankfort historian Willard R. Jillson describes early Frankfort in his self published book *Early Frankfort and Franklin County Kentucky* as follows:

> There were then no sidewalks in this rough and, in many respects, straggling village. The streets were without substantial covering of any kind, and were difficult of passage at all times of the year…Here, in an elemental society, where hunters in deerskin breeches and coonskin caps met, mingled, and bartered – for hard money was scarce – with aristocrats from the eastern tidewater dressed in broad cloth and silk tops… In these stoutly built, well chinked structures… there foregathered the best spirits of the old town (Jillson 1936:67).

Ermina Jett Darnell also provides a description of early Frankfort in her compiled history, *Filling in the Chinks;*

> The site of Frankfort was most unprepossessing. South Frankfort was a mass of wild grapevines and sinkholes and North Frankfort was a mud flat fenced in by three large beaver dams: one just east of where the penitentiary afterward stood, one in a slough of the river opposite the western point of Fort Hill, and another between the site of the Old Statehouse and the hill to its north. The lowest point of this area became known as "Crawfish Bottom," later shortened to "Craw" (Darnell 1966: 15).

In C.E. James' Fourth of July speech given in 1876, the author relates a description of 1810 Frankfort;

> Containing about 140 houses, three printing offices, one bookstore, a circulating library and book bindery, 18 mercantile stores and a State bank established in 1806. The State Legislature meets here annually, and sits during the winter months. The town is improving fast in buildings, manufactories and c____ (James 1881:4).

While the roads were unpaved, they also must have been filled with trash and garbage as hogs were permitted to roam the streets and eat up the garbage. A motion to prevent one from allowing one's hogs to run loose in the city was defeated by the City Council in 1838 (Darnell 1966:53). As late as 1877, a Frankfort grocer complained of being attacked by city hogs in his grocery (Darnell 1966 53).

Sanford Goins, in a letter titled "Recollections of Frankfort" that was part of a compilation for the town's centennial celebration, states that Wilkinson had numerous drainage ditches dug when he acquired the land for Frankfort from Marshall (Glenn 1986:92). Unfortunately, there is no information about how it was done or who did the

actual work. Goins also stated that the first true sewer in Frankfort, which was in place by 1827-28, ran from Broadway to the Kentucky River. These accounts suggest that the conditions in much of Frankfort were swampy.

The 1830s and 1840s were a time when many German and Irish immigrants settled in Frankfort (Glenn 1986:229). At that time larger cities along the Ohio River, like Louisville and Cincinnati were the main destinations for immigrants. Once they arrived, they would settle in smaller cities and towns in the region. Initially, the immigrants worked as laborers building streets and railroads. However, many brought skills with them from their homelands, such as brewing, baking, and masonry. Some were able to start their own businesses. They often owned bakeshops and ran taverns (Glenn 1986:229).

Although Frankfort had a favorable position on the Kentucky River for trade, it was still not located along the main trade corridor of the Ohio River. In order to improve access to the Ohio River from the Bluegrass, the Lexington & Ohio Railroad Company sought to construct a railroad in the 1830s. The line began in Lexington and went through Frankfort on its way to the Ohio and was one of the first railroads in the United States (Hockensmith 1997). The depot in Frankfort is thought to be the first depot west of the Alleghenies (Kramer 1986:103). Unfortunately, railroad technology had not advanced much at the time and the limestone sills used to support the rails became problematic and the railroad failed (Hockensmith 1997). However, Frankfort became entangled in a feud between Louisville and Lexington during the 1840s and 1850s over the construction of a railroad and access to the Ohio River. Both Lexington and Frankfort sought connections to Louisville's port on the Ohio via the railroad. However Louisville constructed the railroad only as far as Frankfort and continually blocked attempts by Lexington to connect to it in Frankfort (Yater 1987).

With the arrival of the railroad and continued steamboat commerce, Frankfort began to develop a commercial district with businesses, warehouses, stores, taverns and markets. As a stopping point on the way to the Ohio River and places farther south, Frankfort developed a warehousing industry to store and ship the manufactured products and agricultural goods and produce moving through the capital (Kramer 1986:89). The main retail area in Frankfort was located between Broadway, Ann and Lewis streets, and expanded to St. Clair and Montgomery between Washington and Ann streets. Some of the businesses included apothecary shops, clothing and other cloth goods stores, bookstores, jewelry, bakeries, and grocery stores. One of the more famous businesses was the Franklin Mining and Smelting Company that specialized in the Milam fishing reel, which won international acclaim at the Chicago World's Fair (Kramer 1986:93).

In the early nineteenth century, Franklin County was largely agrarian and hemp cultivation was one of the most important crops. While Fayette County was the leader in hemp production, surrounding counties including Franklin also raised large amounts of hemp and the manufacture of hemp became an important industry in and around Frankfort. Hemp was also closely tied to slavery. James Hopkins argues that without the hemp industry slavery might not have flourished in Kentucky. Kentucky farmers

generally practiced a diverse agriculture plan but hemp was an exception, requiring high input of hard labor (Hopkins 1951:4). Hemp also provided an economic connection with the cotton producing South. Hemp cordage and bags were needed to transport the cotton for manufacture, thus when the cotton industry boomed, hemp did as well. Tobacco also became important in Franklin County and in the Frankfort warehousing business. Corn and liquor production also were big business in early Frankfort (Kramer 1986:56).

With its position on the Kentucky River and in between Lexington and Louisville, Frankfort was a main shipping stop in Kentucky (Kramer 1986:55). This in turn brought more and more people to the capital for trade, as well as politics. By 1820, Frankfort had a population of 1,679.

By 1840, Frankfort had a total of 1,917 inhabitants, of which over 600 were enslaved African-Americans. By mid-century, Frankfort was well on its way to becoming a major city in the Commonwealth. The influx of so many government officials created a boom in urbanization and in less then 100 years the city had outgrown its original borders. During the mid-1800s, a number of enhancements, including the construction of public institutions, public works buildings, and a standing fire department, had greatly enhanced the city as an urban center, culminating with the development of a manufacturing plant for artificial gas.

During the Civil War, the divided politics of Kentucky took main stage in Frankfort, as Kentucky remained a slave state but stayed in the Union. Political factions and troops wrestled for control of the capital in hopes of taking Kentucky. The Confederate incursion into Kentucky during 1862 alarmed many Kentucky cities, as troops briefly captured several towns in Kentucky, including Frankfort (Harrison 1975). This action prompted a massive effort by the Union army to fortify Kentucky's cities. Thus, a fort was constructed on the high hill in north Frankfort, known as Blanton's Hill. The fort never saw military action, as the battle at Perryville drove the Confederates out of Kentucky. However, the hill has since forth been known as Fort Hill. In the years after the Civil War, Frankfort's large African-American population settled in the more marginal areas of the city. One such area was the "Craw."

During the late nineteenth century, Frankfort's status as a government center coupled with the development of local industries led to it becoming a major Kentucky city. As local industries continued to be established and expand, the city's population increased. However, racial and political unrest challenged this growth, culminating in the assassination of newly elected Democratic Governor William Gobel in 1900 (Kleber 1992:353). Despite this incident, Frankfort continued to prosper during the early part of the twentieth century. New technologies, such as electricity, the telephone, and upgraded water and gas service were available to many of Frankfort's citizens and the L&N railroad built a new Classical style depot on Broadway, as streetcars and automobiles appeared on the city's streets (Kramer 1986).

Industry associated with tobacco and distilling continued to fuel the economy throughout the early decades of the twentieth century. However, the Night Rider Wars in

the Black Patch of Western Kentucky in 1908 and the enactment of Prohibition in 1920 weakened these industries considerably. Devastating floods in the 1930s and 1940s tested the will of both industry and Frankfort's residents (Kramer 1986). Despite these disasters, Frankfort continued to be a regional industrial center, but its political and legislative functions took on greater importance throughout the early to mid-twentieth century. The importance of these functions and the commitment to Frankfort as the capital was illustrated in 1910, when a new state capitol building was opened just outside of downtown (Kleber 1992; Kramer 1986). Considerable expansion of the state government occurred into the late twentieth century; as new government buildings were built and the massive Capitol Center was develop in 1971. As Frankfort entered the twenty-first century, there was little doubt about the city's role as Kentucky's capitol.

FRANKFORT CEMETERY HISTORY

Early Cemeteries of Frankfort

From the late 1700s to early 1800s, there were several cemeteries that served the residents of Frankfort. There also were countless family cemeteries throughout the surrounding Franklin County. The general population, governors, and other prominent people were buried in these cemeteries prior to the establishment of the Frankfort Cemetery in 1844.

Perhaps, the earliest cemetery used by the City of Frankfort was located at the base of Fort Hill at the end of Ann Street. This cemetery was rediscovered in 2002 during the construction of a new office building for the Kentucky Transportation Cabinet (Kentucky Archaeological Survey 2003). Although there are few archival references to this cemetery, archaeological evidence indicates that was used from ca. 1800 to the 1850s. Among the more notable individuals interred in this cemetery was Gen. John Caldwell, a Lieutenant Governor who died in 1804. His remains were moved to the new Frankfort Cemetery in 1848. The cemetery may have been used as a potter's field by the 1840s.

Bellevue was another early cemetery located at the base of Fort Hill (Glenn 1986:159-170; Kramer 1986:134). According to Glenn (1986:169-170), it was situated on a wooded hill northeast of Leestown overlooking the river and Kramer's (1986:134).noted that it was located "on the back side of Fort Hill, which then bordered Frankfort on the north." Bellevue was a part of the tract of land know as Thorn Hill Heights, now called Henry Park. In 1842 the city trustees issued a statement prohibiting its use as a cemetery. It also has been referred to as "Mrs. Hayes graveyard" and may have served as the state government burial ground (Glenn 1986:49). As with John Caldwell graves, many of the remains of the more prominent individuals, such as Kentucky governors Christopher Greenup, who died in 1818, and Christopher Greenup, who died in 1818, interred within this cemetery were reinterred in the new Frankfort Cemetery.

Another early Frankfort cemetery may have been located at Bridge and Second in South Frankfort. Glenn (1986:169) makes brief mention of a cemetery that may have been impacted by construction of the Louisville Turnpike in the nineteenth century (Glenn 1986:169). There is little to no other information about this cemetery, but it could have been a family cemetery or a very early city cemetery.

The Frankfort Cemetery

The Frankfort Cemetery was incorporated in 1844 by an act of the Kentucky Legislature and is located on top of East Main Street Hill (Figure 4). It was the second cemetery incorporated in the United States, the first being, Mount Auburn in Boston in 1832 (Cemeteries – Kentucky Historical Society Files). In 1843, Judge Mason Brown, Orlando Brown, E.H. Taylor, A.G. Hodges, Henry Wingate, Jacob Swigert, A.P. Cox, Phillip Swigert, and M.R. Stealy organized the Frankfort Cemetery Company. The Kentucky Legislature issued a charter to incorporate the Frankfort Cemetery Company to facilitate the construction of the new cemetery. The company hired Scottish landscape designer Robert Carmichael to design the cemetery grounds (Figure 4) (Kramer 1986:134). The land for the cemetery originally consisted of a 32-acre tract known as Hunter's Gardens overlooking the Kentucky River that the city of Frankfort purchased from Ambrose W. and Eliza G. Dudley. Additional land acquisitions were made in 1858 and 1911 to enlarge it to its current size of just over 100 acres (Johnson 1921:10; Kleber 1992). Carmichael's design called for circular and curving drives, and plantings similar to Mount Auburn, with the two main features consisting of a central mound for the burial of notables and a special gravesite for Daniel Boone.

The Frankfort Cemetery Company negotiated permission from Missouri officials and Daniel Boone's descendants to exhume and transfer Boone's remains to the new Frankfort Cemetery. Boone's Kentucky funeral occurred on September 13, 1845 (Johnson 1921). With the opening of the new cemetery in 1844 many of Frankfort's and Kentucky's more well to do citizens moved their deceased relatives to the new cemetery.

The State Mound and Monument

The central feature of Carmichael's 1844 design for the Frankfort Cemetery was the central mound, which was designated for the burial of notable people and was to include a prominent monument (Figures 5 and 6). On February 1, 1847, the Frankfort Cemetery Company deeded the .52-acre central mound area to the Commonwealth of Kentucky.

> This indenture made & executed by and between the Frankfort Cemetery Company of the first part, & the Commonwealth of the State of Kentucky of the second part witness: That this company for and in consideration of the respect which they bear to their State & to those who have died in her service, have granted & by these presents do grant unto the said party of the second part all that part of the cemetery ground in the county of Franklin & State of Kentucky, known as the Central Mound, as the same

Figure 4. 1854 Map of Frankfort Showing the New Frankfort Cemetery (Hart and Mopather 1854).

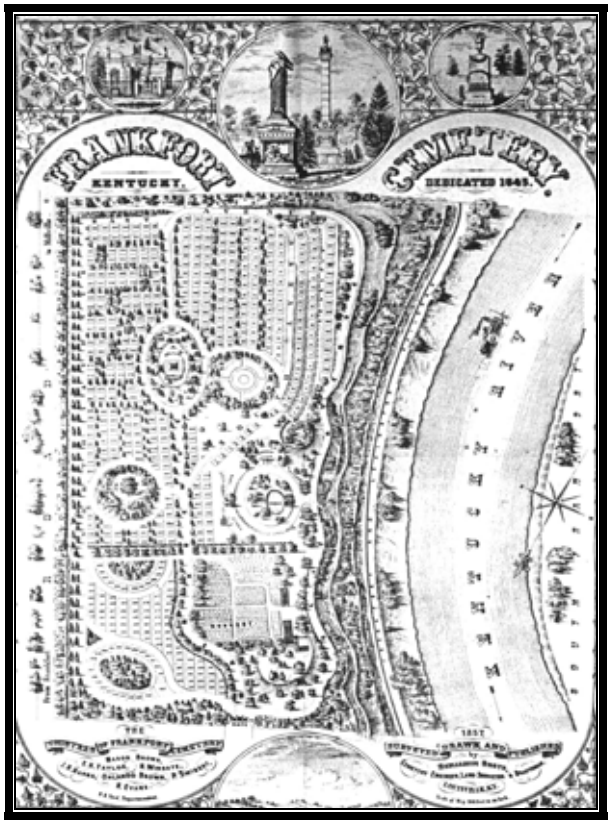


Figure 5. 1857 Site Plan for the New Frankfort Cemetery Constructed in 1844 (Grove 1857).

Figure 6. State Monument.

> is now laid off & bounded—To have & to hold unto the party of the second part forever…. (as cited in Trowbridge 2004:18).

Simultaneously, the State Legislature appointed a committee to inquire into the establishment of a monument to honor Kentucky's fallen military soldiers. They also were tasked to find a suitable place in which to bury these soldiers. Just five days prior to the loss of many Kentucky soldiers at the Battle of Buena Vista, The Senate resolved:

> …That a committee of five be appointed to enquire into the policy and expediency of causing a suitable monument to be erected at the most eligible point in Kentucky, in honor of the officers and soldiers who have heretofore, and who may hereafter fall in defense of their country, and to mark the resting place of her illustrious statesmen; and that said committee also report the most suitable place to be selected in which Kentucky may deposit the ashes of her illustrious dead (as cited in Trowbridge 2004:19).

The committee recommended the recently acquired central mound of the Frankfort Cemetery as a suitable place to honor Kentucky's fallen military soldiers as a burial ground and monument location. In June, July, and September of 1847, the Kentucky soldiers killed at the Battle of Buena Vista were recovered and interred on the State Mound in Frankfort Cemetery. Momentum to erect a monument followed the burial of the Buena Vista dead. In February of 1848, the monument committee recommended the erection of a single monument to honor all of Kentucky's soldiers at the State mound:

> Your committee would, therefore, recommend, that to preserve and perpetuate the names of those who have fallen in defense of their country, and to testify to the world the high regard the Kentucky cherishes for her

> patriotic and noble dead, and to stimulate those who may come after us, to emulate the deeds of their ancestors, a Military Monument, worthy of the State, should be erected in the centre of the State mound of the Frankfort Cemetery (as cited in Trowbridge 2004:19).

The recommendation was approved by the State Legislature and by April of 1848, they advertised for proposals to design and erect the monument. Robert Launitz of New York City was awarded the contract to erect the monument. Launitz was an immigrant from Russia, who became one of America's first sculptures. He made a name for himself with the creation of several public monuments in New York's Greenwood Cemetery. However, his most ambitious and notable project was the Kentucky War Monument. The monument was completed on July 1, 1850. It is 62 feet high and made of Connecticut granite and Italian marble. The monument features a sculpture of Victory standing atop a high column that bears the inscribed names of Kentucky's fallen soldiers from all military action up to 1850 (Figure 6) (Johnson 1921:13).

With the erection of the monument, the state burial mound and the military monument had been established, as directed by the State Legislature in 1847. The State Mound, as the area is now called, consisted of the central large monument surrounded by a wrought iron fence, large grave markers for the officers killed in the Battle of Buena Vista, markers for other soldiers killed at the battle, and cannons (Johnson 1921:18). Since then the State Mound has changed considerably. Monuments honoring Theodore O'Hara and Vice President Richard M. Johnson were added. Numerous other soldiers have been interred at the mound, representing the other armed conflicts that Kentuckians have participated in since the monument's construction. The wrought iron fence has been removed and cannons were added and completely removed. In 1986, the State Mound and military monument were refurbished, walkways added, and special plaques listing the names of all the soldiers from Kentucky killed in armed conflict were created.

The State Mound is not the only state-owned plot in the Frankfort Cemetery. In 1851, the state purchased lots 131, 132, 143, 144, 154, and 155 in the cemetery for $600.00 "in which to bury the remains of Kentucky's illustrious dead" (Johnson 1921). This area is located "some distance south of the State Monument" and became known as the "State Lot" (Johnson 1921). It is the resting place for many of Kentucky's Revolutionary War veterans, Governors, and other notable people connected to the state.

THE BATTLE OF BUENA VISTA

At the time that the State Legislature gave serious thought to the creation of a military monument and state burial ground, many of Kentucky's soldiers were killed at the Battle of Buena Vista, Mexico during the Mexican-American War in 1847. Thus, the loss of so many Kentuckians generated a substantial amount of momentum for the project and these brave soldiers became the first to be interred at the State Mound.

On February 22, 1847, 4,759 American troops under the command of General Zachary Taylor met Mexican General Antonio Santa Anna and 20,000 of his troops at the small Buena Vista hacienda near Saltillo, Mexico (Taylor 1847) (Figure 7). Prior to the battle, Taylor had been ordered to dispatch the majority of his command to Major General Winfield Scott who would make a push into the Mexican heartland and Taylor was to fall back to Monterrey, Mexico. However, an American courier with the plan had been captured and Santa Anna intended to use the information to his advantage by using his superior numbers to defeat Taylor's reduced forces then later take on the larger American force (Salisbury 1987). Taylor chose to set up a defensive position to defend Saltillo, near the hacienda of Buena Vista a few miles to the south. Thus, the stage was set for the Battle of Buena Vista.

Figure 7. Battle of Buena Vista.

In addition to Taylor, the Kentucky soldiers involved in the battle consisted of the First Kentucky Cavalry and the Second Kentucky Infantry. During the battle, Santa Anna attempted to turn the American's left flank held by the dismounted First Kentucky Cavalry and portions of the Second Illinois Infantry. They took heavy losses, but eventually held on to successfully defend the hacienda. The Second Kentucky Infantry along with the First Illinois played an important role in the American center by charging the advancing Mexicans in support of the Third Indiana (Salisbury 1987). Kentuckians encountered some of the heaviest fighting of the battle and paid the price. By the time that the battle had ended in the late afternoon of February 23, the Americans had suffered 267 killed, 456 wounded, and 23 missing (Taylor 1847). The Second Kentucky Infantry was hit particularly hard with 44 killed and 57 wounded (Salisbury 1987). The First Kentucky Mounted had 29 killed and 34 wounded. The losses for the Mexicans were

much worse and were estimated by Taylor (1847) to be around 1,500 and could have been as high as 2,000.

Kentuckians played a significant role during the Battle of Buena Vista. The First Kentucky Cavalry's stand at the hacienda stalled the Mexican advance and the Second Kentucky's charge on the plateau helped the American army withstand Santa Anna's forces (Salisbury 1987). Technically, the Battle of Buena Vista was a draw. However, with far superior numbers, a draw for the Mexicans was not sufficient and disrupted Santa Anna's grand plans to destroy the American forces in stunning fashion. The bravery and courage shown by the Kentuckians at the Battle of Buena Vista served as an appropriate backdrop for the creation of the State Mound and military monument. Of the 73 Kentuckians killed killed at the Battle of Buena Vista the remains of 25 later recovered from Mexico and reinterred in a place of honor on the State Mound. These included, four of the 28 officers killed in the battle, consisting of Col. William R. McKee, Lieut. Col. Henry Clay, Capt. William T. Willis, and Adjutant E.P. Vaughn.

THE BATTLE OF RIVER RAISIN

As those killed in the Battle of Buena Vista became the first soldiers interred on the newly designated State Mound in 1847, a great deal of interest was generated for recovering the bodies of brave Kentuckians killed at another well known battle that took place several decades earlier during the War of 1812 with Britain. Some of the remains were returned to Kentucky sometime between 1848 and 1870 (Trowbridge 2004). While the location of the remains of the recovered bodies within the Frankfort Cemetery is not known, the State Mound, according to many sources, was the intended burial site for these soldiers (Trowbridge 2004).

The Battle of River Raisin began on January 18, 1813 when 1,300 Kentuckians under the command of General James Winchester arrived in Northern Ohio to await other American troops prior to an attack on British controlled Detroit. Of these men, 650 under the command of Lt. Cols. William Lewis and John Allen quickly took the small town of Frenchtown, Michigan (now Monroe, Michigan) located along the River Raisin and occupied it (Kleber 1992). On January 20, 1813, the small force at Frenchtown was reinforced with another 250 Kentuckians. They set up camp in and just outside of the small town, in vulnerable positions. A force of 1,200-1,400 British and Indians supported by artillery counter attacked on January 22, 1813 and quickly routed the Kentuckians. More than 400 Kentuckians were killed during the battle, which became one of the deadliest for the Americans during the War (Kleber 1992). After the battle, most of the American dead were left on the battlefield, as the British pulled back and the Indians took to burning the town. The area was abandoned and remained that way for eight months, until Col. Richard M. Johnson's Kentucky Mounted Regiment, again took Frenchtown for the Americans in September of 1813.

Those who died in the battle laid for months on the battlefield without burial, as Indians burned some of the bodies and scalped most them. Wild animals and hogs

devoured some of the remains. Throughout the 1800s, the remains of soldiers killed at the Battle of River Raisin were occasionally dug up during construction projects in Monroe, Michigan (formerly Frenchtown). It was reported that remains of the Kentuckians killed at the battle were found on several occasions and the town of Monroe return at least some of them to Kentucky for proper burial (Johnson 1921; Sower 1994:33; Trowbridge 2004). The whereabouts of these remains are unknown. However, most references suggest that they were buried in the "State Lot" within the Frankfort Cemetery, which could be the State Mound and monument area (Trowbridge 2004).

PREVIOUS ARCHAEOLOGY

No previous archaeological investigations have been conducted in the Frankfort Cemetery. However, excavations have been conducted at the site of one of Frankfort's earliest cemeteries (15Fr154), which was located at the base of Fort Hill along Ann Street. The cemetery was rediscovered during construction of a new office building for the Kentucky Transportation Cabinet in 2002 (Kentucky Archaeological Survey 2003). Over 250 graves dating from ca. 1800 to 1850 were excavated during the project. As previously noted, this area may have served as a burying ground for the residents of Frankfort as early as 1800. By the 1850s this area was no longer being used as a cemetery. In the 1860s and 1870s a brewery, and the City of Frankfort jail and workhouse was constructed over the top of the cemetery. Analysis of the skeletal remains and artifacts recovered indicates that burial population includes men, women, and children of all ages, and that both African-Americans and Euro-Americans were interred in this cemetery. As a group these individuals suffered from a great deal of nutritional stress during their early years and they were engaged in occupations that required a great deal of physical activity (Peter Killoran, personal communication 2005).

Several other archaeological investigations have been conducted in the vicinity of the Old Frankfort Cemetery. At the base of Fort Hill next to the quarry was the Old Frankfort Jail and workhouse (15Fr83) that was also known as the "White Rock Hotel," built ca. 1875. Two test units were excavated adjacent to a wall of the building, which showed that the area had been severely disturbed. Very few artifacts were recovered during the excavations (DiBlasi 1983). The report also contained a history of the workhouse, which included a reference to an early cemetery located in the area. The limited excavations conducted at the workhouse determined that it had very little archaeological potential because this area has been developed and the ground disturbed beginning in the 1860s. No evidence of a cemetery was found during the excavations, though it is now known that this building was constructed over the western portion of the Old Frankfort Cemetery.

In 1999 extensive archaeological excavations were conducted at the Frankfort Craw site (15Fr136) in advance of the construction of a new office building for the Kentucky Transportation Cabinet (Stottman 2005). The Frankfort Craw site was located at the base of Fort Hill along Blanton Street between Ann and St. Clair Streets. These excavations focused on the late nineteenth century neighborhood and the Luscher

mansion that once existed there. Among the many features that were excavated during the course of this project were several privies.

Analysis of the archaeological remains recovered from the Frankfort Craw site yield new information about the health, socioeconomic status, and consumerism of a lower working class neighborhood and a wealthy business owner. In general, the Frankfort Craw was associated with poor sanitary conditions. The presence of shallow unlined privies coupled with the neighborhood being constructed on a poorly drained swampy area likely contributed to the prevalence of lung and other diseases that the residents sought cures for through patent medicines. The residents of the Craw appeared to have had access to a wide range of products from around the country depending on their economic status, though none were able to acquire the same range and types of goods as the Luscher family (Stottman 2005).

In the late 1970s and late 1990s limited archaeological investigations were conducted at Fort Hill (15Fr368), a Civil War fortification that overlooks the Old State Capitol. During the course of these projects very few artifacts were recovered and in general the internal structure of this fort remains poorly documented (Fenwick 1979; Stallings and Ross-Stallings 1999).

Kentucky's Old State Capitol (15Fr140) located on Broadway near Lewis Street also has been the subject of archaeological investigations. In 1984 and 1985, Ronald W. Deiss (1988) conducted archaeological investigations of the Old State Capitol Public Square as part of a project funded by the Kentucky Heritage Council and the Kentucky Historical Society. Utilizing historic documents and photographs to supplement the excavations, Deiss located the 1796 jail and gained an understanding of sewage and refuse disposal on the Public Square. During the course of this study it was discovered that in 1847 the old jail had been converted to a privy, and that a spillway and two limestone conduits connected the capitol building with the jail/privy. Both were determined to be drains for sewage coming from an indoor bathroom at the Old State Capitol. A flagstone walkway and an incinerator also were documented. Over 32,000 artifacts were collected from the Public Square with dates spanning the late-eighteenth century to the present. Deiss's investigation also documented that much of the public square had been disturbed and that fill had been placed over much of the western half of the site. This disturbance resulted from the removal of many of the outbuildings associated with the Old Capitol and an attempt to level the area for better drainage.

In August 2000, the Kentucky Archaeological Survey monitored the installation of electrical and water lines in the Public Square of the Old State Capitol (Hardesty et al. 2000). Examination of 64 utility trenches confirmed many of Deiss's original observations. Extensive filling episodes associated with the demolition and construction of buildings was found to cover much of the Public Square, particularly the western half. However, several features, including the stone foundation of a building, a stone walkway, and features associated with site drainage were documented.

Archaeological excavations also have been conducted at the site of the proposed Kentucky History Center (15Fr115), which is the home to the Kentucky Historical Society. The remains of a late nineteenth century hotel, a nineteenth century boarding house, and a house lot that dates back to the 1790s were investigated. The hotel area contained the most intact archaeological deposits found at the History Center site, including the foundation of a kitchen, a privy, and a cistern. The artifacts recovered from the hotel site have contributed to our understanding of late nineteenth to early twentieth century hotel life in Frankfort (Watts-Roy n.d.). Food portions at the hotel were large and the quality of the cuts of meat tended to expensive, suggesting that the cliental was rather well off. There were a number of domestic items found at the site, which indicates that hotel guest often may have stayed for long periods of time or actually lived there. The hotel probably catered to politicians, who likely stayed for long periods of times during legislative sessions. Artifacts found at the site also suggest that the hotel attempted to maintain the latest styles, occasionally changing dish styles and updating furnishings (Watts-Roy n.d.).

The site of a 1840s redware pottery was excavated to the southeast of the History Center site at 116 East Main Street (Genheimer 1988). The excavations focused on a circular brick kiln. A large number of artifacts related to the pottery making process were recovered from this site. Analysis of these materials indicated that this pottery made redware utilitarian vessels and smoking pipes for the local market.

Archaeological investigations were conducted at Liberty Hall historic home (15Fr1369), built in 1796. This study documented the presence of intact trash deposits and features, including a privy, cistern, and walkways. Analysis of these materials recovered from this site and the features that were documented, contributed to the renovation and interpretation of Liberty Hall (Fay 1986).

Three historic sites (15Fr106, 15Fr107, and 15Fr108) were identified during a survey associated with the construction of a floodwall along the Kentucky River in downtown Frankfort (Esarey 1993). Site 15Fr106 was an early twentieth century city dump. Site 15Fr107 contained the remains of a mid-nineteenth to late twentieth century residence. Site 15Fr108 was an early twentieth century residence. None of these sites were determined to contain significant archaeological remains.

In 2002, a survey of Cove Springs located just outside of Frankfort recorded two historic sites (Prybylski 2003; Prybylski and Wallace 2002). Site 15Fr155 was the location of Frankfort's first water works, which dates to the early 1800s. The remains of the water works consisted of a ca. 1870s stone dam, stone overflow tower, stone encased spring, and a stone foundation. Site 15Fr156 was a late nineteenth century farmstead that consisted of an existing log meat house and a portion of a stone foundation for a house. Both sites exhibited rather low archaeological potential, but are significant sites based largely on their architecture remains.

FIELD METHODS

Among the field methods utilized at the State Monument were ground penetrating radar (GPR), burial excavation, excavation units, and soil cores. GPR surveys were conducted of a portion of the southeastern sidewalk to determine if grave shafts were located under it, along the northwestern side in area where it was thought the remains of the veterans of the Battle of River Raisin were interred, and in the northeastern area to determine if any graves were located in this area. The instrument used to conduct the survey was a Ramac GPR CU II Geo System with a 500 MHz shielded antenna. It is capable of discerning object approximately the size of a softball down to a depth up to 10 m, with an optimal depth range of 2 to 5 m. The GPR unit was wheeled back-and-forth across the grid every 60 cm to ensure adequate subsurface coverage. The data collected was then processed in the laboratory to determine if anomalies could be identified that might represent grave shafts. These anomalies were then investigated.

The burials documented during the course of this project was treated as follows: 1) upon the removal of three layers of sidewalk (brick pavers, asphalt, and concrete) the limits of the grave shaft were defined horizontally; 2) a planview map of the grave shaft was drawn and photographed; 3) the grave shaft fill was removed to expose the top of the coffin; 4) the top of the coffin was removed and the human remains were carefully exposed; 5) the exposed remains and associated artifacts were photographed and mapped; and 6) the human remains and associated artifacts were carefully removed. Sediment from the grave shaft was screened through 6.35 mm mesh. All recovered artifacts were collected, bagged, and assigned a field specimen number. After all of the burials were removed the grave shafts were backfilled and the sidewalk put back in place.

Three units were excavated in an attempt to relocate the remains of individuals who died during the Battle of River Raisin. Units 1 and 2 consisted of 2 x 2 m units, while Unit 3 was 1 x 2 m in size. All three units were excavated in arbitrary 10 cm levels. Units were excavated to sterile subsoil. The soil from each level was screened through 6.35 mm hardware cloth. All materials recovered were bagged by unit and level, and then assigned a field specimen number. The stratigraphy of each unit was documented with profile drawings and photographs. The units were then backfilled.

A three-quarter inch in diameter split spoon soil core also was used in an attempt to relocate the Battle of River Raisin remains. Soil cores were placed systematically and randomly, primarily in the northwest side of the State Monument area. The location of each was recorded as was the soil stratigraphy documented by that probe.

Artifacts recovered from the State Monument were washed, labeled and catalogued at the University of Kentucky Archaeology Laboratory. After research and analysis was completed, the human remains and coffins/casket fragment were reinterred at the State Monument. All of the coffin hardware and other artifacts as well as records documenting these investigations were curated at the University of Kentucky's William S. Webb Museum of Anthropology in Lexington, Kentucky.

GEOPHYSICAL SURVEY

By
Phillip B. Mink

The purpose of the Ground Penetrating Radar (GPR) survey conducted at the State Monument was twofold: (1) to determine whether or not graves from the Mexican American War were located under a late twentieth century sidewalk, on the south side of the monument; and (2) to try and locate the grave of soldiers from the War of 1812 Battle of River Raisin. Since the early 1990s, geophysical survey equipment has increased in quality and quantity of data collected. One of the techniques that has started to gain widespread use in the North America is ground penetrating radar (GPR). GPR is a near surface geophysical method that utilizes radar waves to measure the differential reflection properties of subsurface anomalies (Conyers and Goodman 1997). Radar waves are sent into the ground and reflect off buried discontinuities (e.g., rocks, architecture, graves, pits, etc.). Measuring the rate of reflection in a study area allows a GPR user to search for anomalies within the area of interest (Conyers 2004). KAS has used this technology on several cemeteries in the Commonwealth to determine whether or not historic graves were located within an area of potential impact (Mink 2004; Mink and Miller 2004).

METHODOLOGY

The GPR equipment used was a Ramac GPR CU II Geo System with a 500 MHz shielded antenna and measuring wheel. It can detect a softball-sized object and has an approximate depth range of one to five meters, and approximate maximum penetration depth of three to ten meters depending upon local geologic conditions. Generally, GPR is most useful in drier sandy or loam soils and performs poorly in wet clayey soils, as wet soils are very electrically conductive and attenuate (degrade) most of the radar energy (Conyers 2004). However, not all clay is as conductive and GPR has produced favorable results at some clayey soil sites in the Midwest and Southeast.

The GPR methodology on this project followed standard procedures outlined by Conyers and Cameron (1998). Placing fiberglass tape measures along the ground over areas of interest created a grid. The GPR unit was wheeled back-and-forth across the grid every 60 cm to ensure adequate subsurface coverage (Conyers and Goodman 1997). These data were then processed using the GPR Program Suite, principally the GPR_View and GPR_Process applications that were jointly created by Larry Conyers of the University of Denver and Jeff Lucius of the United States Geological Survey (USGS). These processed GPR data were then placed into the Surfer mapping program to create amplitude slice maps of various depths below the surface. An amplitude slice map is a plan map that represents one layer of data at a specified depth below the grounds surface. Anomalies, such as archaeological features like graves appear and disappear in the maps depending on the depth of a particular amplitude map. They appear as green, yellow, or red locations on the map. As further discussed below the maps produced from data from this project did show anomalies within all of the grids

RESULTS

Grid One (Figure 8) was located on the southeast side of the State Monument. It was placed in this area to determine whether or not Mexican American war veteran graves were located under a twentieth century brick walkway. The walkway intersects a ring of graves of soldiers who died during the Mexican American War and examination of an old postcard pointed to the presence of a headstone where the sidewalk is now located (John Trowbridge, personal communication 2004). At the time of the geophysical survey it was not known whether or not graves were located under the sidewalk. Following the geophysical survey, however, a map was found that showed the location of several headstones (C. W. Gilmore, Yves J. Thoreau, W.C. Green, Henry Edwards, Edward F. Hogg, and William T. Willis) that had been moved in the late 1980s prior to the construction of the sidewalk. The results of the GPR survey (shown below) suggested the presence of three graves that were indicated by rectangular anomalies. The more northern anomaly was thought to be the location of William T. Willis's grave, while the southern two anomalies were thought to be W. C. Greens grave. Based on the results of the GPR survey and examination of the 1980s map, the decision was made to excavate the six graves that were covered by the sidewalk and following analysis of the remains to reinter these individuals in another part of the State Monument.

Grid Two (Figure 9) is located on the northeastern side of the State Monument. This area was surveyed with the GPR for two principal reasons. First, the southern portion of this grid included known graves of Mexican American war veterans. It was hoped that the GPR results from these known graves would provide baseline data that could be used to interpret the results from Grid One. The second reason for the GPR survey of Grid Two was to determine if there was area near the monument where any excavated remains could be reinterred.

Grid Three (Figure 10) was placed along the northwestern side of the State Monument in an attempt to located the remains of the veterans of the War of 1812 Battle of River Raisin. Examination of an early postcard of the State Monument indicated that a marker to those veterans might be located in this area (John Trowbridge, personal communication 2004). The GPR data showed very distinct anomalies to the north of three Civil War grave markers (Albert G. Bacon, Robert H. King, and John G. Keenon). It also showed another anomaly to the east of these markers. All of these anomalies were investigated (Units 1-3) to determine if they represented the location of the reinterred War of 1812 remains. These investigations confirmed that the anomalies near the Civil War grave markers represented grave shafts associated with these markers. A grave shaft was not documented in association with the easternmost anomaly and it most likely represents natural soil difference that caused the radar waves to reflect differently.

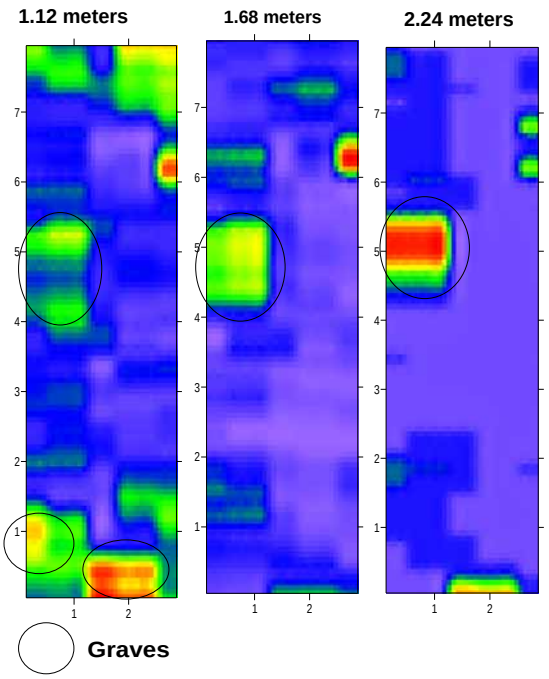


Figure 8. Grid One.

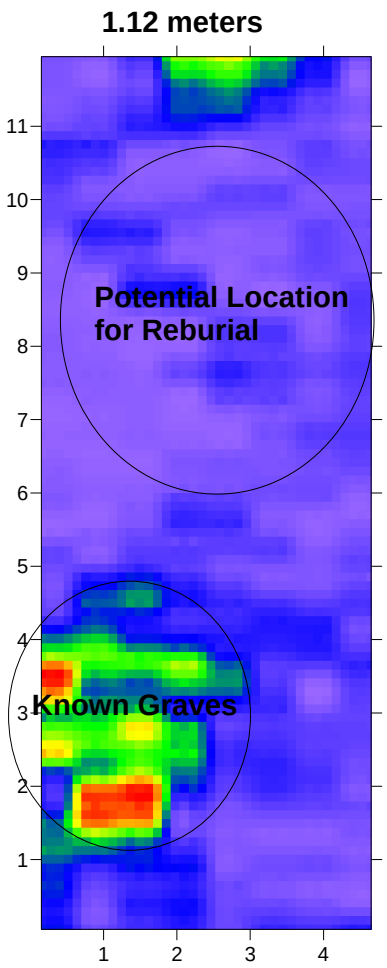


Figure 9. Grid Two.

Grid Four (Figure 11) was designed to gather baseline data from modern graves located along the southwestern side of the State Monument. As can be seen below the GPR was able to easily discern the modern era (World War II and Vietnam War) veterans graves.

Grids Five and Six, which were located to the northwest of Grid Three, also were examined as part of the effort to locate the graves of the veterans of the Battle of River Raisin. While some anomalies were identified, no evidence of a grave shaft was documented in these two areas

CONCLUSION

In conclusion, the GPR survey at the State Monument was a success. While the River Rasin veterans were not located during this project, the graves of Mexican American war soldiers were located. The project also allowed for the collection of baseline data to be used on other potential cemetery sites throughout the Commonwealth.

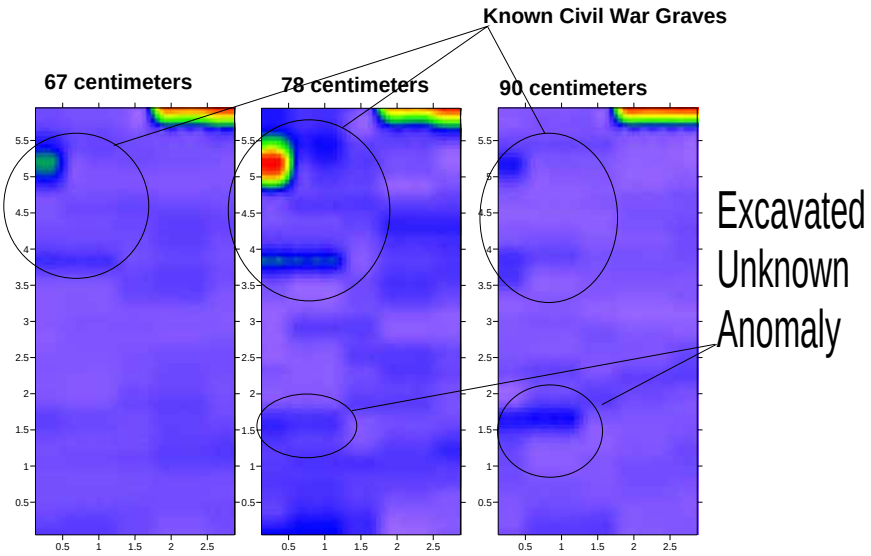


Figure 10. Grid Three.

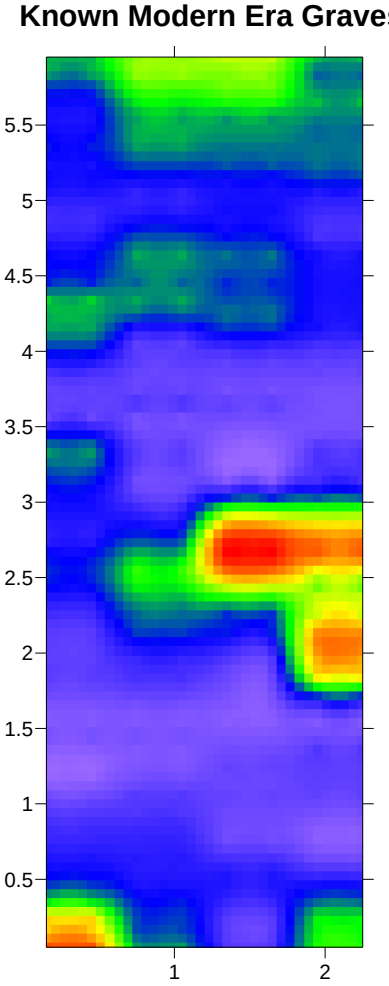


Figure 11. Grid Four.

COFFIN/CASKET CASE HARWARE, PERSONAL ARTIFACTS, AND NONMORTUARY RELATED ARTIFACTS

By
Sarah E. Miller

This section describes burial case hardware, personal artifacts (see next section for description textiles, and nonmortuary related artifacts recovered from the State Monument (Table 1). Artifacts classified as coffin/casket hardware (n=265) include cast iron burial cases, decorative hardware, nails, and screws. Among the personal materials (n=63) found in association with the five excavated burials was a buckle, buttons, a collar stud, lead shot, and a straight pin bundle (*housewife).* Nonmortuary artifacts (n=21) primarily consisted of stone and glass fragments, a button, and a nail recovered from grave shaft fill and three excavation units. After assignment to a functional category, all artifacts were counted, and in some cases measured and drawn. Coffin/casket shape also is discussed in this section. A button typology was created for this assemblage to better describe and compare the 60 recovered buttons.

The poor soil conditions associated with the excavated burials may have biased the recovery of personal artifacts towards iron and ceramic objects at the expense of less durable artifacts, such as shell buttons and straight pins. Nevertheless the analysis of the artifacts recovered helped confirmed when then were interred and has contributed to our growing understanding of mid-nineteenth-century urban cemeteries and mortuary patterns.

COFFIN/CASKET HARDWARE

The terms coffin and casket can cause confusion when dealing with funerary assemblages. The term coffin refers to a six-sided burial case. Caskets are four sided burial cases with parallel sides. It is generally thought that hexagonal coffins were the norm in America up to the mid-nineteenth century until they were replaced by four-sided caskets (Habenstein and Lamers 1955). Davidson (2004:79-91) has noted several exceptions and states that burial case shape is not a reliable *terminus post quem*. To add to this confusion, metallic burial cases can mimic six-sided, four-sided, and tapered wooden shapes, or have shapes uniquely their own. For the purpose of this report, the metallic burial cases will be referred to as cast iron coffins, and the four-sided burial case Gilmore was buried in will be referred to as a casket.

Coffin/casket related artifacts consisted of cast iron coffins (n=4), coffin bracing (n=2), coffin sealant (n=1), escutcheons (n=7), handles (n=6), nails (n=207), screws (n= 23), unidentified iron objects (n=15), and viewing plates (n=2) (Tables 1 and 2). Of the

five excavated graves, four (Edwards, Thoreau, Green, and Hogg) contained cast iron coffins representing three different styles. The fifth person, Gilmore, was buried in a four-sided rectangular shaped wooden casket. The shape of his casket was determined by the outline of the container, the location of the lead handles, and the angle of the crossed nails (see Figure 38).

Table 1. Nontextile Historic Materials.

	Edwards	Thoreau	Green	Hogg	Gilmore	Units
Hardware						
Cast iron coffin*	1	1	1	1	1	
Coffin bracing*	1	1				
Coffin sealant			1			
Escutcheon					7	
Handles					6	
Nail, Cut	53	71	48	11	18	1
Nail, Unidentified	4				1	
Nail, Wire					1	
Screw, iron	7	9				
Thumb screw, lead					7	
Unidentified Iron	5	3	5	2		
Viewing Plate*				1	1	
Personal						
Buckle, iron					1	
Button	4		20	19	16	1
Housewife sewing kit			1			
Lead shot			1			
Miscellaneous						
Clear bottle glass	12					
Plate glass						6
Slate						1
Total	**87**	**85**	**77**	**34**	**43**	**9**

*Denotes heavily fragmented artifact.

Table 2. Weight of Coffin/Casket Materials (kg).

Burial	Cast Iron Coffin	Viewing Glass	Handles
Gilmore		1.18	1.18
Thoreau	7.53		
Green	3.90		
Edwards	7.62	*	
Hogg	121.72**	0.9	

***Denotes only 12 fragments**
****weight estimated**

Metallic Burial Coffins

Cast iron coffins were developed and in use by the mid- to late nineteenth century. Almond J Fisk obtained the first patent for his cast iron burial case in 1848. He produced two more models before 1854 (Allen 2002). The first two were in the shape of a sarcophagus and were ornamented with molded drapery and floral designs. The third, patented in 1854, was torpedo shaped and removed the gaudy ornamentation from the previous designs. By the 1850s manufactures such as Crane, Breed, and Company of Cincinnati were making and selling Fisk burial coffins and caskets. They were advertised to those wishing to present the dead in an "undisturbed repose (Crane, Breed and Co. 1858:3)." The cast iron burial case would help preserve and protect the body from agents above and below the ground. Prior to the burial, the cast iron burial case was ideal for use in deaths away from home where the body would need to be transported across great distances. It would also preserve the body to provide ample time "for distant relatives to behold again the features of their departed friends (Crane, Breed and Co. 1858:5)." After burial, the burial case would protect the body from water, vermin, and from spreading disease.

A description of one of the earlier metallic coffins is found in the narrative of the Crane, Breed and Co. (1858:9) catalog:

> The Case consists…of two parts, the upper and the lower. These are fastened together by screws passing through the flanges which border the line of intersection. Between them is deposited cement, in a groove, which runs round the lower flange. A projection from the upper one is pressed into the cement which, in a few hours, becomes hard, and no gas from within can penetrate it. In a word, the Case, when thus closed, is proof not only against the escape of gas from within, but the entrance of air, water, or any other element, from without.

Four of the individuals were interred in cast iron coffins.

Edwards, Thoreau, and Green buried in early metal coffins, possibly precursors to Fisk's models. They lacked any of the molded drapery or floral designs that were patented by Fisk (Allen 2002). Edward and Thoreau's coffins (Type 1) were similarly constructed and sealed using metal braces. They also featured a thin wood veneer over the cast iron. At other sites traces of an outer wooden box have been found on top of a metallic coffin (Bromberg et al. 2000:339). The wood veneer on Edward's and Thoreau's coffins was found under the metal bracing but over the lids, suggesting that it was indeed a finished veneer on the casket and not part of the crate.

Green's coffin was of a different shape than Edward's and Thoreau's and did not feature braces or a wooded veneer (Type 2). Green's was not as rectangular at the foot end and not as extreme in angle at the corners. Samples of the lead cement seal used to seal his coffin were recovered from Green's burial. That Green's body was returned to Kentucky in July and Edward's and Thoreau's bodies in September indicates that slightly

different coffin types were purchased on route to Mexico. This could reflect changes in coffin manufacture or it could indicate that there was more than one style available for purchase in New Orleans where the coffins were purchased (John Trowbridge, personal communication 2004). All three iron coffins had deteriorated in the ground and were quite fragmentary, with the recovered fragments of Thoreau's and Edward's coffins weighing 7.53 kg and 7.62 kg, respectively, and Green's weighing 3.9 kg.

By the 1860s when Hogg's coffin was manufactured, the technology of metallic burial coffin production had improved. Hogg's coffin, which was much heavier than the earlier coffins demonstrates several of these changes, such as the style of trapezoidal handles, the much thicker iron used its manufacture, the circular viewing plate with cast iron cover, and the contoured shape of the case aided in its identification. The top of Hogg's coffin weighed 1.72 kg. Because this coffin was removed nearly intact (Figure 12), it could not be weighed on any of the scales at the University of Kentucky Archaeological Laboratory. Its weight, however, was estimated at 120 kg.

Figure 12. Hogg's Cast Iron Coffin.

Hogg's coffin, is featured in the Crane, Breed, and Co. 1867 catalog as the Plain Case model. This style was in use before 1867 as evidenced by the advertisement language: "This pattern, so well known, and deservedly adhered to for its strength and reliability, is still in great demand (Crane, Breed, and Co. 1867:4)." They add, "Its cheapness, too, gives it an advantage over all other styles." Coffins similar to Hogg's have been recovered from other sites in the United States. For example, the coffin resembles an iron coffin recovered from the Quaker Burying Ground in Alexandria, Virginia, which also featured trapezoidal handles (Bromberg 2000). Another Plain Case

metal coffin is reported from the Mason Cemetery in Giles County, Tennessee (Allen 2002).

Decorative Hardware: Handles, Escutcheon, and Screws

Among the decorative hardware recovered from the State Mound were the compound metal handles (n=6), escutcheons (n=7), and screws (n=5) (Figures 13 and 14) recovered from Gilmore's burial. The handles were made mostly of cast lead alloy and featured iron screw parts. The handles, escutcheons, and screws date to the late nineteenth-century based on material and style. White metals were used in mass produced coffin hardware after 1865. The styles are similar to those advertised in the 1880s (C. Rogers & Brothers Company 1882) (Figure 14). Thumbscrews and escutcheons similar to those recovered from the State Mound have been found at other late nineteenth-century sites (Braley and Moffat 1995:45, 68; Bromberg et al. 2000:344-347; Espenshade 2004:31-32; Garrow 1987:19-45; Garrow et al. 1985:63, 75-78; Kogon and Mayer 1995:145-147; Shogren et al. 1989:176).

The six lead alloy handles bear symbols, such as the square, compass, and "G," that are associated with the Masonic Order. The presence of these symbols indicates that Gilmore was a Mason. Interpretations of Masonic symbols are complicated by the many interpretations put forth by different individuals. One interpretation is that the square and compass represented the world, caught between that of the mind or spiritual world (The Compass) and the realm of the physical, the earthly plane (The Square). The "G" similarly conjured different meanings: God, goodness, geometry, or *greegriment* (an old Scottish word meaning harmony or concord) (MacNulty 1991:44).

Nails

Most of the hardware recovered from the State Mound consisted of cut nails (n=203) that were manufactured and widely used from 1830 to 1890 (Nelson 1968). A single wire nail and four unidentified nails also were recovered. It is interesting to note the presence of both wire and cut nails in association with Gilmore's 1880 burial as this was the time that wire nails were being introduced. The presence of both types suggests that both types were used simultaneously in Frankfort in 1880.

Pennyweight sizes were determined for the 57 whole nails recovered from the Sate Mound (Table 3). No bent or clinched nails were recovered from this site. Pennyweight sizes have been used to infer shape and construction of historic structures. In a similar vein, pennyweights may provide information on coffin construction. The use of a variety of nails could indicate that coffin makers were using whatever materials were available or that the selection of nail pennyweight was related to coffin size. It is also possible that certain pairings of pennyweight sizes, such using 3d and 7d nails together, could indicate a more specialized construction; a craftsman may have a reason for using certain pairings of nail sizes. Future comparisons of cemetery pennyweight nail data may provide information into specialized coffin/casket manufacture.

Figure 13. Handles Recovered from the Gilmore Burial.

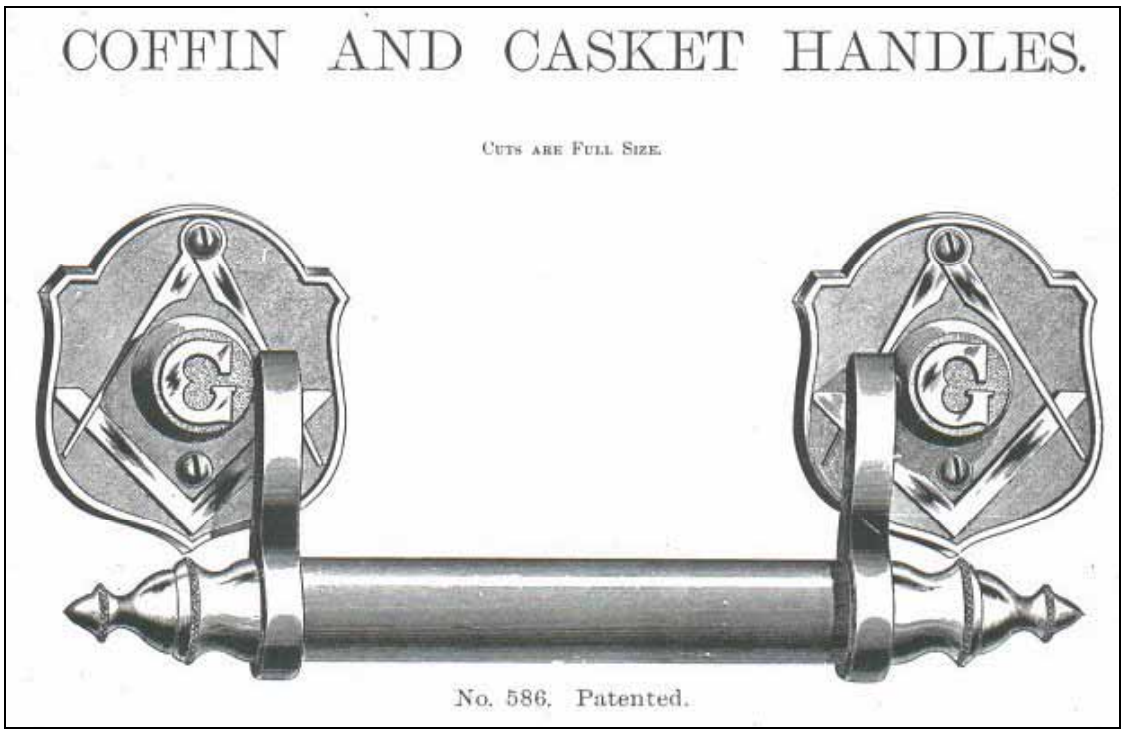


Figure 14. Similar Styled Handle Patented in 1882.

Table 3. Pennyweights for Whole Nails from the State Monument.

Pennyweight	Late Cut
7d	1
8d	2
9d	29
10d	11
12d	14
Total	**57**

The nails recovered from the State Mound range in size from 7 to 12d with slightly more than half classified as 9d. This is a very limited range of pennyweight sizes relative to the Old Frankfort Cemetery nail sizes ranged from 2-16D (Table 4) (Miller 2006). At this site the most common nails were classified as 7d, 8d, 3d, and 4d, with the two larger nails sizes accounting for 40.4% and the smaller nails accounting for 25.2% of the nails recovered from this site. Overall the nails recovered from the State Mound were larger than those recovered from the Old Frankfort Cemetery. This difference in nail usage may be due to the placement of the cast iron coffins at the State Mound within a wooden box compared to the Old Frankfort Cemetery where the nails were used to construct coffins/caskets of various sizes.

Table 4. Pennyweights for Whole Nails from the Old Frankfort Cemetery.

Pennyweight	Wrought	Late Cut	Square/ Unidentified	TOTAL
>2d		22		**22**
2d		82	6	**88**
3d		213	13	**226**
4d		182	2	**184**
5d	1	123	3	**127**
6d	1	95	1	**97**
7d	2	354	9	**365**
8d	28	247	18	**293**
9d	1	135	1	**137**
10d		55	1	**56**
12d		30	2	**32**
16d		3		**3**
Total	**33**	**1541**	**56**	**1630**

Since four of the five individuals excavated at the State Mound were buried in cast iron coffins, the recovered nails may represent the remains of an outer wooden box that the coffin was placed in. Support for this suggestion comes from the size of these nails, which is consistent with what would have been used to construct an outer wooden box. Unlike small construction nails (2d-5d), which are used in the final stages of carpentry, medium construction nails (6d-16d) are used for a variety of purposes (Buckles et al. 1978:403-404) and large construction nails (20d and larger) are used for

framing a house or fence construction. All of the whole nails recovered from the State Monument fall in the medium range.

The use of medium construction nails supports the notion that the cast iron coffins were placed in outer wooden boxes and buried together in the burial shaft. Cut nails were not needed to construct or seal the coffin. The size of the nails demonstrates the boxes were of simple construction; the absence of any finishing nails or small construction nails suggests the outer boxes were functional but not highly finished. Wood was detected along with cut nails in the shaft above Edward's burial. The practice of burying a metal coffin inside a wooden box before internment has been documented at other sites, such as the Quaker Burying Ground in Alexandria, Virginia (Bromberg et al. 2000:339) and the Mason Coffins in Tennessee (Allen 2002:6).

Utilitarian Screws

Most of the 16 utilitarian screws were identified by head or threaded fragments. Most of the tips and heads were unidentified, except for four flat heads. All of the utilitarian screws were recovered from Thoreau's and Edward's burial. These screws may have been used to seal the cast iron coffins.

Viewing Glass

Hogg's and Gilmore's coffins featured plate glass viewing plates. These plates date to the nineteenth century and were no longer used by the early twentieth century. Viewing glass came in different shapes. Hogg's was circular to match the cut out in the cast iron coffin. This was a marked improvement in metallic burial case manufacture from earlier metal coffins, such as those associated with Edwards, Thoreau, and Green. Gilmore's viewing plate had a rectangular shape and had been fit into his wooden coffin. Glass thickness averaged 5.1 mm for Hogg's window and 2.1 mm for Gilmore's. The difference in thickness may be due to a difference in function. While both windows allowed mourners to view the dead, Hogg's window was part of the cast iron coffin and was therefore sealed in a special way to not allow transfer of air in or out of the coffin. This may have necessitated a thicker glass plate.

PERSONAL ARTIFACTS

Of the 62 nontextile personal items recovered, most (n=59) were buttons. A buckle, a possible *housewife* sewing kit, and a lead shot ball also were recovered. Personal artifacts were recovered from four of the five excavated burials (Table 4).

Buckle

A simple iron cinch buckle was recovered from Gilmore's burial. Similar cinch buckles were patented in 1855 and are illustrated in the 1889 Marshal Field and Company catalog (Davidson 2004:158). A second iron buckle was found as part of a compound artifact (*housewife* sewing kit) with Green's burial.

Buttons

A button typology was created to facilitate the description of the recovered buttons and aid inter-burial comparisons. The 60 buttons recovered from the site were sorted into 14 types based on material, shape, manufacture, and decoration (Table 5) (Figures 15 and 16). All buttons from the State Mound were commonly used from 1800 to at least 1865 (South 1964:122; Wychoff 1984:29, 88).

Table 5. Buttons Recovered from the State Mound.

Type	N=	Material	Shape/Features/Manufacture	Burials
1	17	Iron	Rivet	Gilmore (n=14), Hogg (n=3)
2	6	Iron	4-holed large, iron capped	Edwards (n=3), Gilmore (n=1), Green (n=1), Hogg (n=1)
3	2	Iron	4-holed small, iron capped	Edwards (n=1), Hogg (n=1)
4	2	Iron	domed fabric covered, uid manufacture	Gilmore (n=1), Hogg (n=1)
5	8	Brass	Coin, one-piece cast eye	Green
6	4	Brass	Coin, one-piece cast eye (small)	Green
7	4	Brass	Coin, one piece- cast (large) fabric covered	Green
8	1	Brass	modified coin, rectangular, cast one-piece	Green
9	4	Brass	Domed eagle with Shield	Hogg
10	9	Brass, gold	gilt domed eagle "I"	Hogg
11	1	Porcelain	4-holed	Green
12	1	Bone	4-holed	Green
13	1	Gold/copper	Stud- gold plated copper	Gilmore
14	1	Iron	4-holed	Unit 3

Types 1-4

Button types 1 through 4 are cast iron buttons. Type 1 consists of flat cast iron disks with an eye on the back (Figure 15.1). These buttons, known as utility or coin buttons, featured no designs on the face and were commonly used as trouser or vest buttons during the nineteenth century (Figure 15) (Adams-Graf 2000:196). Types 2 and 3 are four-holed cast iron buttons that differ only in size; Type 2 measures approximately 1.8 cm in diameter whereas Type 3 measures 1.4 cm (Figures 15.2-15.3). Type 4 is a domed shape cast iron button (Figure 15.4). It is unknown how this button was affixed to Gilmore's clothing but it may have been fabric covered and all the fabric has deteriorated away.

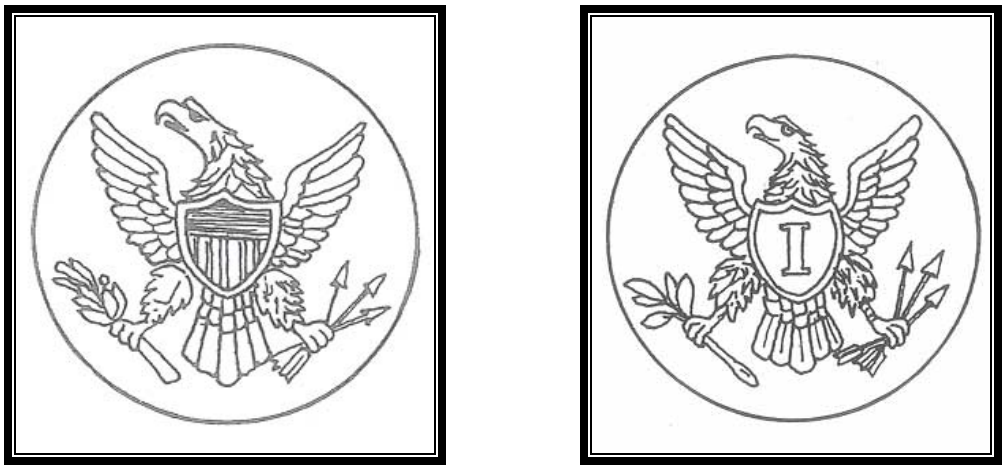
Types 5-10

Button types 5 through 10 are cast brass buttons (Figures 15 and 16). Types 5, 6, and 7 are utility or coin buttons, similar to Type 1 (Figures 15.5-15.7). Type 8 is a modified coin button (Figure 16.8); two of the edges have been clipped and appear more rectangular. This button was found in near Green's shoulder. Types 9 and 10 are special cast military buttons. Type 9 is a symmetrical spread eagle, lined shield three-piece

Figure 15. Button Types 1 through 7.

Figure 16. Button Types 8 through 13.

button (Figures 16.9 and 17a). These buttons were introduced in 1847 during the Mexican War (Wycoff 1984:88). The button became standard for all enlisted men and was continually used until 1880. Type 10 features an Eagle with an "I" raised on the stippled shield (Figures 16.10 and 17b). This three-piece gilt button dates from 1851-1880 and is found frequently on Civil War sites (Wycoff 1984:29). The "I" is a branch letter for infantry. After 1854 these lettered buttons were intended only for officers.



A
1847-1880

B
1851-1880

Figure 17. Detail Drawing of Types 9 and 10 Uniform Buttons (Wychoff 1984:29, 88).

Type 11

Type 11 is a four-holed machine made porcelain button (Figure 16.11). Porcelain buttons have been used since the eighteenth century, but not until Richard Prosser patented machinery in 1840 were they machine made.

Type 12

A single bone button was recovered from State Mound (Figure 16.12). In an attempt to imitate eighteenth-century ivory buttons, less expensive buttons were made from animal bones (Fink and Ditzler 1993:52). Bone buttons became the most common utilitarian button during the nineteenth century (Hughes and Lester 1981:8).

Type 13

Type 13 is a one-piece, gold plated copper shirt stud (Figure 16.13).

Type 14

Type 14 is a four-holed iron button that was recovered from unit 3. It measured 1.75 cm in diameter.

Summary

A total of 60 buttons representing 14 different types was recovered from the State Mound. Most were common nineteenth-century utilitarian metal coin buttons, made of both iron or brass. One modified brass coin button was found with Green. Several military issue buttons were found with Hogg, including a ca. 1847 domed eagle with shield and a ca. 1851 domed "Infantry" branch button. The porcelain and bone buttons were found in Green's burial. The porcelain button dates to after 1840 and bone buttons were common throughout the early and mid-nineteenth century. A single gold plated copper shirt stud was found in Gilmore's burial.

Housewife Sewing Kit

During the cleaning of the textiles from Green's burial another interesting artifact was recovered: a bundle of straight pins, two buttons, and a buckle (Figure 18). This compound artifact could represent a sewing kit, affectionately termed a *housewife*, which was common during the Civil War (Babits 1993). Its recovery from a Mexican War veterans grave indicates that use of these types of kits predates the Civil War. Most *housewives* found in museum collections or used by re-enactors, however, are larger and generally wrapped in fabric, which would have separated the items from each other. Alternatively, this could be a bundle used to pull the uniform taut behind the back for presentation of the dead. However, this second interpretation does not adequately address why so many clothing type artifacts would be found bundled together in fabric.

Figure 18. *Housewife* Sewing Kit.

Lead Shot

Lead shot (n=1) was recovered from Green's burial (Figure 19). It was found during the cleaning of the textiles recovered from the burial. The shot measures 13.7 mm in diameter. Lead shot was commonly used in the nineteenth century. The roundness of the shot suggests it was never fired but was more likely placed in the coffin when Green's body was transported from Mexico to Kentucky.

Figure 19. Lead Shot.

MISCELLANEOUS ARTIFACTS

Twelve clear glass bottle fragments were recovered from the fill of Edwards grave and six fragments of 1.8-1.9 mm thick plate glass and a slate stone fragment were recovered from excavation unit. Two types of clear container glass were recovered from the site: a thin (less than 0.9 mm) (n=7) and a thicker (5.2 mm) type (n=5). None of the specimens are temporally diagnostic, but their recovery from grave shaft indicates that they date to a least the mid-nineteenth century. These specimens represent a minimum of two vessels.

Though there was not a large enough sample of flat glass fragments from the excavation units to conduct a window glass analysis, the thickness of these specimens is more typical of plate glass than architectural window glass. Slate was used historically as roofing material or for educational blackboards. The fragment of slate stone from the State Monument was very small and may be noncultural.

SUMMARY

The metallic burial coffins within which Edwards, Thoreau, and Green were interred in 1847, represent two precursors to the Fisk metal coffins available before 1848. Hogg was interred in 1863 in a Plain Case metallic coffin. The burial of three Mexican War veterans in cast iron coffins in 1847 represents the earliest known use of these types of coffins in Frankfort, Kentucky and perhaps the entire state. That cast iron coffins were in widespread use by the early 1850s in Kentucky, is reflected by a January 25, 1858 testimonial: "It is now seven years since we commenced [metal coffin] use. They were at once favorably received, and their superiority, as Coffins, readily acknowledged (Crane, Breed and Co. 1956:18).

The nail analysis provided insights into burial practices and the availability of wire nails in the late nineteenth century. A limited range of pennyweight sizes was used to construct the outer wooden boxes that the cast iron coffins were placed in before burial. The use of medium construction nails that were larger than the nails used to construct coffins at the Old Frankfort Cemetery indicates that the outer boxes were of simple construction and not finely crafted. The association of both cut and wire nails with Gilmore's 1880 casket shows that both nail types were being used in Frankfort at that time.

Gilmore's burial differed from the other men in casket construction and casket hardware. Gilmore was buried in a rectangular wooden casket. The use of lead alloy handles with Masonic symbols (see also textile discussion), confirmed Gilmore's status as a Master Mason.

The buttons and textiles (see next section) from the State Monument provided information on what the men were wearing when they were interred and are indicative of their rank and socio-economic status. That no buttons were recovered from Thoreau's burial and only four buttons were found with Edwards suggests that these two men were probably not buried in their uniforms. In contrast, Green's burial featured seven different types of buttons (n=20). Green was a private, similar in rank to Thoreau. Unlike Edwards and Thoreau, Green was likely buried in his uniform. Results from the textile analysis suggest Green's uniform was handmade (see next section). This may account for the variety of buttons found with him.

Hogg also was buried in his uniform. Six different types of buttons (n=18), including several spread eagle and branch infantry buttons, were found in association with Hogg. The use of these standard issue buttons suggests increased formality and standardization of soldiers' uniforms. This pattern also was observed during the analysis of the recovered textiles (see next section).

Gilmore's burial included three different types of button, including a gold plated shirt stud. He was likely buried wearing a suit or clothing other than a military uniform (see next section).

Analysis of the nontextile cultural materials recovered from the State Monument contributes to the growing data on nineteenth-century urban cemeteries. The materials date from the mid-nineteenth century to the 1880s. Data from the materials recovered from the State Monument, where the dates of death and internment were known, has an enormous potential to contribute to future cemetery studies, particularly where internment dates are not known.

TEXTILE REMAINS

By
Christina A. Pappas

A considerable amount of textile fragments was recovered from three of the five (Gilmore, Green, and Hogg) burials excavated at the State Monument. These burials span over 30 years, from 1847 to 1880. Examination of the recovered textiles has provided information relating to the lives and social positions of these individuals. The textile remains recovered from the State Monument are described for each burial and are summarized in a table at the end of this section.

GILMORE

Among the textiles (n=47 fragments) recovered Gilmore's burial were 12 fragments of Warp-faced Simple Plaiting, 1/1 Interval, in purple silk. All of the purple silk fragments were recovered from the below a glass viewing plate. Simple Plaiting fabric is constructed by the interlacing of warp and weft threads in an over-under fashion (Adovasio 1977; Emery 1966). In weaving, warp threads are the vertical elements while weft threads are the horizontal. In Warp-faced Simple Plaiting, 1/1 interval, the warp threads are more visible, numerous, and somewhat obscure the weft threads. One of the fragments exhibited a 180° side-selvage. A side selvage is the edge treatment of a fabric where the weft thread finishes its movement through the warp threads and is re-inserted into the weaving. A 180° side-selvage is achieved when the weft thread has traveled completely across the width of the weaving and is re-inserted directly above its previous row on the same side it exited after the shed of the loom is changed (Adovasio 1977; Seiler-Baldinger 2000).

All 12 fragments have the same width (35 mm) and some have seams on both sides, which suggests that they represent a single piece of fabric. The seams were simple in that the edge of the fabric was folded over onto itself and sewn in place. The thread used to secure the seam was not present but the original stitching holes were visible. The fabric was oriented with respect to the seams in such a way as to create a diagonal appearance. The warp and weft threads intersected the seam at a 45° angle creating the diagonal. These fragments may represent a sash that was worn by the deceased.

The warp of the sash was composed of purple silk S-spun thread. The spin of the thread was determined by the direction with which the fibers were turned: left-to-right for S-spun thread and right-to-left for Z-spun thread. The weft was composed of a medium brown colored silk S-spun thread, which would not have been highly visible. Debris in the form of soil particles and corrosion stains adhered to several of the sash fragments.

Textile Type: Simple Plaiting, 1/1 Interval
Number Present: 12
Average Warp Diameter: .2 mm
Average Warps per cm: 40
Average Weft Diameter: .45 mm
Average Wefts per cm: 20

Figure 20. Simple Plaiting, 1/1 Interval in Purple Silk.

The remaining textile fragments (n=35) associated with Gilmore were Simple Plaiting, 1/1 Interval, blue wool. These fragments may have been faced (warp or weft thread predominant), but they exhibited heavy wear that prevented this determination. The heavy wear was caused by a process known as fulling. Fulling is the felting process of woven cloth. The cloth, usually wool, is "roughed-up," that is it is agitated so that the fibers in the cloth rub together and become entangled causing the cloth to become denser, warmer, and stronger (Seiler-Baldinger 2000). Five of these fragments were of seams. The seams were constructed by folding the fabric over on to itself and were secured with a line of stitches from a sewing machine. The stitch, know as the lockstitch, is created by the needle of the sewing machine pushing a loop of thread through the fabric which is then grabbed by a hook beneath the fabric that feeds a second thread through the loop (Seiler-Baldinger 2000). The needle then rises again "locking" the two threads together in the stitch. Isaac Singer first made the sewing machine that produces this stitch commercially available in the mid-1850s and its popularity caused it to spread quickly and become very common (Severa 1995). The warp of the fabric was Z-spun while the weft was S-spun. A fragment of a buttonhole also was recovered. The opening was in the shape of a keyhole with buttonhole stitching around its perimeter and a small amount of the blue wool fabric still present. Based on the characteristics of these fragments, this was most likely a blue wool coat, possibly a frock coat, popular in 1880 when Gilmore was buried.

Textile Type: Simple Plaiting, 1/1 Interval
Number Present: 35
Average Warp Diameter: .45 mm
Average Warps per cm: 23
Average Weft Diameter: .5 mm
Average Wefts per cm: 24
Average Seam Diameter: 3.75 mm
Buttonhole Width: 3.85 mm
Buttonhole Length: 6.6 mm

GREEN

W.C. Green died in 1847 during his service in the Mexican War in Saltillo, Mexico. The majority of the fragments (n=104) recovered were Warp-faced Simple Plaiting, 1/1 interval. While no selvage was recovered which made it difficult to determine the predominant thread type with any degree of certainty, warp-faced was the most common thread used in the mid-1800s. The warp and weft thread was Z-spun wool in all examples of this fabric type associated with Green. The fragments exhibited a similar wear as that seen in the wool fragments associated with Gilmore indicating that this was also a fulled fabric.

Ten fragments were recovered that had seams and represented edges of the original garment. The edge was formed by folding the fabric over on to itself and sewing it in place with a line of running stitches. Two of these fragments were from corners of the original garment. The edges met to create a 90° angle when the fabric was folded and sewn inward at a 45° angle. In addition to the edges recovered, two strap fragments typically located at the cuffs of military uniform jacket sleeves also were present. The strap fragments were the complete original width (80 mm and 79 mm, respectively) with one strap's gilded buttons still *in situ*. The edges and corners of the straps were constructed in a similar manner as discussed earlier. Six of the fragments had buttons in place but no buttonholes were preserved. Of the fragments with buttons still in place, one example had both a cast brass button (Type 7) and a porcelain button (Type 11) (see previous section) in close proximity to its finished edge. Given the types of textile fragments that were recovered and their fulled treatment, these materials may represent a coat of some kind. Since Green was killed in action during the Mexican War, it can be assumed that he was buried in his uniform. The type of fabric and garment structures present correspond with military uniforms of that time (Field 1997) and lend support to the idea that these fragments represent Green's uniform jacket. The original color of the fabric could not be discerned but given the likelihood that Green was buried in his uniform, the fabric was most likely to have originally been blue.

Textile Type: Warp-faced Simple Plaiting, 1/1 Interval
Number Present: 104
Average Warp Diameter: .45 mm
Average Warps per cm: 25
Average Weft Diameter: .6 mm
Average Wefts per cm: 17
Average Seam Diameter: 6.5 mm

Figure 21. Coat Edge.

Figure 22. Coat Edge, Reverse.

Figure 23. Strap with Buttons.

Figure 24. Button with Cloth.

Figure 25. Button with Cloth.

Figure 26. Two Buttons with Cloth.

Several fragments (n=8) of Twill Plaiting, 2/2 Interval, also were recovered. Twill weave is similar to Simple Plaiting in that it involves the interlacing of two sets of elements, warps and wefts, but the interlacing is staggered to create a diagonal appearance in the fabric. In 2/2 interval twill weave, the warps and wefts intersect one another in such a way that the each element passes over two elements then under two elements. The warp and weft thread was S-spun wool in all examples and no selvages were preserved. The fragments were heavily worn suggesting a fulled treatment or

extreme wear, and all exhibited staining from metal corrosion. The fragments of twill weave recovered were not associated with any definite structure of a garment; however, the shape of the fragments and the amount of corrosion present on the fabric suggests these had possibly been used as button coverings. This hypothesis is further supported by traces of fabric on the surface of some of the buttons from this interment.

Textile Type: Twill Plaiting, 2/2 Interval
Number Present: 8
Average Warp Diameter: .8 mm
Average Warps per cm: 10
Average Weft Diameter: .89 mm
Average Wefts per cm: 9

Figure 27. Twill Plaiting, 2/2 Interval.

Figure 28. Button with Twill Plaiting.

HOGG

Seven buttonholes were recovered from this burial. Two were adhering to the back of gilded buttons, while the remaining five were fragments recovered separated from their associated button. The keyhole shape of the opening was identical in all the examples. The perimeter of the hole was stitched with buttonhole stitching using a two-ply, Z-spun, S-twisted thread. A small amount of blue wool fabric in Simple Plaiting, 1/1 interval, was present around the buttonhole. The warp and weft thread that was visible was Z-spun.

Textile Type: Buttonhole Opening with Warp-faced Simple Plaiting, 1/1 Interval
Number Present: 7
Average Length: 23.6 mm
Average Width: 14.4 mm
Average Opening Diameter: 2.98 mm
Average Warp Diameter: .8 mm
Average Warps per cm: NA
Average Weft Diameter: .67 mm
Average Wefts per cm: NA

Figure 29. Buttonholes.

Figure 30. Button and Buttonhole.

Eleven fragments of thread without any associated fabric were recovered from this burial. While no fabric was present, the thread retained its original structure of lock stitching that was produced by a sewing machine. As discussed earlier, this type of stitch required the use of two threads. The thread was of a uniform diameter for both elements as was the opening between threads (the place were the fabric it was binding would have been). All recovered examples of the thread were 2-ply Z-spun, S-twisted thread. The preservation of the thread was remarkable and its appearance upon visual inspection suggests a coating of some sort had been applied, possibly a waxy substance.

Textile Type: 2-ply, Z-spun, S-twisted thread
Number Present: 11
Average Thread Diameter (1st set): .35 mm
Average Thread Diameter (2nd set): .27 mm
Average Thread Opening: 1.3 mm
Average Stitch Diameter: 1.7 mm

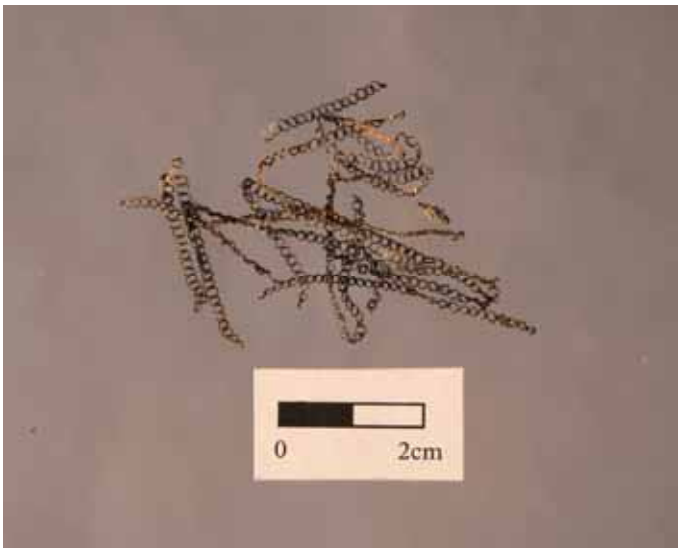


Figure 31. Lock Stitch Thread without Fabric.

Forty-four fragments of blue woolen cloth were preserved in association with Hogg's skeletal remains, of which eight fragments had intact seams. The seamed fragments appear to have been edges of a garment. The edge was folded over onto itself and sewn in place with a lock stitch on a sewing machine. The thread used for the lock stitch was 2-ply, S-spun, Z-twisted. The cloth was Simple Plaiting, 1/1 interval, in blue Z-spun wool. The warp and weft of all examples appeared to be of a consistently uniform diameter. The fabric was heavily worn in such a way to suggest a fulled treatment. The small size of the fragments recovered makes it difficult to positively identify the type of garment from whence it came; however, based upon the color, treatment, and type of fragments, as well as the likelihood that Hogg was buried in his uniform, these fragments are most likely from a uniform jacket.

Textile Type: Simple Plaiting, 1/1 Interval
Number Present: 44
Average Warp Diameter: .6 mm
Average Warps per cm: 14
Average Weft Diameter: .6 mm
Average Wefts per cm: 14
Average Sewing Thread Diameter: .43 mm

One fragment of Simple Plaiting, 1/1 Interval, in undyed cotton was recovered. The warp and weft were Z-spun and the fragment was tightly woven. The cloth closely resembles the plain flannel often used for shirts at this time; however, its small size makes an absolute identification difficult.

Textile Type: Simple Plaiting, 1/1 Interval
Number Present: 1
Average Warp Diameter: .45 mm
Average Warps per cm: 20
Average Weft Diameter: .45 mm
Average Wefts per cm: 20

The remaining textile fragments (n=5) recovered from this burial were Twill Plaiting, 2/2 Interval. The warp and weft were 2-ply, Z-spun, S-twisted blue wool in all examples. The fragments showed heavy wear which could represent a fulled treatment or considerable abrasion during its use. No definite textile structure is identifiable for these fragments. One twill fragment had some corrosion staining in a circular pattern that suggests these fragments may have been button coverings.

Textile Type: Twill Plaiting, 2/2 Interval
Number Present: 5
Average Warp Diameter: .59 mm
Average Warps per cm: 14
Average Weft Diameter: .57 mm
Average Wefts per cm: 14

DISCUSSION

Textiles were recovered from three of the five burials excavated at the State Monument. Green was the oldest individual with associated textile fragments and almost half (n=112) of the fragments recovered from the site were associated with this burial. Among the fragments recovered were sleeve straps, coat edges, and cloth with buttons still attached. The lack of color is disappointing and may be the result of the fabric's depositional environment or post-depositional handling. However, based upon the history of military uniforms for the United States, blue has been the traditional color of choice since 1779 (Long 1895) and it can be assumed that was the original color of these fragments.

The preservation of the textiles associated with Gilmore and Hogg was such that only a small amount of fabric (n=47 and n=67, respectively) was recovered (Table 6). However, the condition of the recovered fragments was quite good. Structural elements, such as buttonholes and seams, were well-preserved as were good examples of sewing machine stitching. What is most impressive about these materials is that it was possible to identify the color of the fragments. The original color of fabric is often not preserved in archaeological contexts. This may be caused by the depositional environment of a site reacting with the pigments in a textile or improper handling in the laboratory. The garments associated with Gilmore and Hogg provided a rare opportunity to observe the original color of the garments these individuals were interred in.

Table 6. Summary of Identified Textile Types.

	Gilmore	Green	Hogg
Simple Plaiting	47	NA	45
Faced Plaiting	NA	104	7
Twill Plaiting	NA	8	5
Thread Type	S-spun (silk); S- & Z-spun (wool)	Z-spun (plaiting); S-spun (twill)	S/Z,Z (twill); Z-spun (all others)

The information gathered from these fragments provides an interesting glimpse of society at the time of these individuals interment. Green died in Mexico in 1847 during his service in the Mexican War. He had joined the army in 1846 when the United States government first called for volunteers for its Mexican campaign. At this point in history, the uniforms of the volunteer regiments were not dictated by the government but by the state (Field 1997). These uniforms tended to conform to some general principles, such as color and cut of the garments, but decoration was decided by the state (Field 1997; Long 1895; OQMG 1928). Obtaining a uniform was the responsibility of the individual; a solider was issued an allowance for his uniform from his pay and it was up to each person to outfit himself accordingly (Long 1895). Green's uniform would have most likely included a blue wool coat, a flannel shirt, cotton trousers, boots (suitable for horse-back riding), and a hat (Field 1997; Severa 1995). As the textile fragments and buttons have shown, Green's uniform was of at least fair to good quality. What is especially interesting is the quality of Green's uniform in 1846-1847 as compared to that described for volunteers that joined the war effort later. These volunteers are described as barefoot and many without coats or hats (Field 1997:89). This illustrates how poorly prepared the United States was for a long-term campaign.

Sixteen years later, in 1863, Hogg died of typhoid fever and also was interred in Frankfort. Hogg died while serving as Quartermaster for the Kentucky Volunteers for the Union during the Civil War. Hogg's uniform would have contained the same basic elements as that of Green. Regulations at this time would have required Hogg's uniform to include a dark blue coat and sky blue trousers with a dark blue stripe down the outside of the legs (Long 1895). The decoration of the uniform would have been prescribed by rank. The preservation of the textiles from this burial was such that we know Hogg did possess the dark blue wool coat. No distinguishable fragments of the trousers were recovered. The presence of textiles with lock stitch sewn edges in Hogg's grave is of particular note. This type of stitch only became widely available when Isaac Singer made the sewing machine commercially available in the mid-1850s (Severa 1995). The sewing machine allowed for the production of garments on a much larger and quicker scale. As uniforms were still often produced locally at this time, the sewing machine allowed the production to keep pace with the growing enlistment during the Civil War (Severa 1995). The ability to keep up with the needed uniform production during this time was important for the maintenance of a unified front for the Union Army.

The introduction and popularity of the sewing machine translated into the increased availability of standardized clothing for military uniforms. Green's uniform

would have been his responsibility to supply and would have conformed to the uniform standards for the state of Kentucky. Hogg's uniform would have been supplied for him by the military and conformed to the standards of the Union Army. The ability of the Union Army to prescribe uniform standards was in part due to its ability to provide the uniforms. This potential could have only been realized with the introduction of the sewing machine. During the period before the start of the Civil War, the United States government had sough to standardize the uniforms of the military to allow for a more professional solider. The textiles from the State Monument provide a brief glimpse of that transition.

The textiles from Gilmore's grave signified his place in life. Gilmore's position as a member of the State Senate and Master Mason suggest that that he was not without some means. Fragments of purple silk, if from a sash Gilmore may have been interred with, may reflect his affiliation with this secret group. The gold-gilded button recovered indicates that Gilmore's wardrobe was of a good quality. Fragments of a finely woven blue wool jacket, probably a dress frock coat, support this suggestion. While the textile evidence recovered from this burial was limited, it reinforces Gilmore's status as an individual of some means and reflected his place in society at that time.

Though the textile evidence from State Monument was limited, the recovered fragments reflect changes in military uniforms from the late 1840s to the mid-1860s. These changes were illustrated by the differences in Green and Hogg's associated textile remains, with Hogg's uniform representing the shift to mass production and greater uniformity. Gilmore's burial reflected his position in society and fraternity to the Masons.

HUMAN SKELETAL REMAINS

By
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All the human remains were washed and processed at the University of Kentucky's Laboratory for Archaeological Research. The materials were boxed and bagged by feature and burial number. The skeletal analysis was under taken by Peter Killoran at the University of Kentucky Museum of Anthropology. The remains were analyzed without knowledge of the individual's names or backgrounds other than they were Mexican War or Civil War veterans. A name was associated with a set of remains after the analysis was completed.

All of the skeletal remains examined were poorly preserved, which was probably due in part to the acidic yellow-brown subsoil within which they were interred and length of time buried. Additionally the bodies deterioration is explained by the original excavation of those buried on the battlefield combined with transporting of these individuals to Frankfort.

An attempt was made to identify all of the recovered remains. Towards this end the *Standards for Data Collection from Human Skeletal Remains* (Buikstra and Ubelaker 1994:7) was used to ensure that the required data was collected and that it would be comparable to data collected by other researchers (see Appendices A-D). These data can be used to determine an individual's age, sex, height, ancestry/heritage, and diseases they may have suffered from. While a separate skeletal inventory was created for this burial population, because much of the data normally recorded for several attributes were missing, separate files were not created all attributes. Rather data relating to these attributes was included in the comments section of the overall inventory. Measurement sheets were used when at least 25 percent of the data could be collected otherwise this data also were entered in the comment section of the inventory (all of the raw data will be curated at the University of Kentucky Museum of Anthropology). In the remainder of this section the human skeletal remains recovered from the State Monument are described and insights derived from this analysis are presented.

INVENTORY OF INDIVIDUALS

The material was inventoried and coded into an excel database, following the procedures in the *Standards for Data Collection from Human Skeletal Remains* (Buikstra and Ubelaker 1994:7). The inventories are for the cranial region (skull) and the postcranial region (the remainder of the body). Each region was given an overall completeness code and then each individual bone was then coded (see Appendices A and B for individual bone ratings). A general overview for each burial is presented below.

The coding proceeded as follows:

1= 75% present= complete
2= 25%-75% present=partial
3= less than 25% present-poor
9= missing

None of the five burials recovered from the State Monument had scores that were greater than 2, with Gilmore having a score of 3. Not surprisingly this was the burial that had the worst preservation of human skeletal remains.

Gilmore (Burial 23): Cranium was rated as a **3**, exhibiting poor preservation; the postcranial was rated as a **3**, exhibiting poor preservation

Thoreau (Burial 27): Cranium was rated as a **2**, exhibiting partial preservation; the postcranial was rated as a **2**, exhibiting partial preservation

Green (Burial 29): Cranium was rated as a **2**, exhibiting poor preservation; the postcranial was rated as a **2**, exhibiting poor preservation

Edwards (Burial 30): Cranium was rated as a **3**, exhibiting poor preservation; the postcranial was rated as a **2**, exhibiting partial preservation

Hogg (Burial 33): Cranium was rated as a **3**, exhibiting poor preservation; the postcranial was rated as a **2**, exhibiting partial preservation

SEX OF INDIVIDUALS

Although all of the burials in the analyzed sample were known to be males an attempt was still made to verify this through the analysis of the skeletal remains, as this was a good test of the methods used in this study. The sex of each individual was determined using information from the pelvis and the cranium as available.

The subpubic region of the pelvis is considered one of the most reliable indicators of sex in humans. The ventral arc, the subpubic concavity, and the ischiopubis ramus ridge are all scored.

The ventral arc is a slightly elevated ridge across the front of the pubis (*Standards* p.17). In females the ridged is rolled back more toward the base whereas in males it is marked less so.

The subpubic concavity is rated along the lower border of the pubic bone. In females it tends to be concave (curved in) to allow additional space for the birth canal. In males the subpubic region tends to be straight or even convex (curved out).

Next the ischiopibic ramus ridge is examined. Again the lower border of the pubis is examined. This bone in females tends to be thinner and as a result there is the development of a supporting ridge along the bottom of the bone. The wider male on the other hand tends to be "broader and flat" in appearance (Standards p.17)

The subpubic region was examined and scored in the following manner:

1= Female
2= Ambiguous
3= Male
9= Unobservable

The Greater Sciatic Notch tends to be broad in females and narrower in males (again related to accommodation to the birth canal). The greater sciatic notch may not be as a reliable as the subpubic region as the former area in females may narrow as a result of osteomalacia. Osteomalacia is the adult form of vitamin D deficiency or Rickets. Vitamin D is required to absorb the necessary nutrients (calcium and phosphorus) to build healthy bone. Inadequate vitamin D can result in bone deformation. In children, who are still growing, the deficiency manifest itself in the growing long bones, in adults the effect is observed on the trabecular bone and compact bone of the ribs, vertebrae and pelvis(Ortner 2003 393-403). In severe osteomalacia the pelvis often folds over on itself. Less severe forms of osteomalacia can lead to ambiguous assessments of sex.

None the less, in healthy individuals the greater sciatic notch can be successfully scored against a diagram printed on page 18 of the *Standards* with one representing a more typical female configuration with a larger notch and a five a typical male configuration with a narrow notch, with those in the three range being ambiguous.

The preauricular sulcus also was scored. The preauricular sulcus is a narrow groove that appears below the auricular (ear shaped) joint surface. This surface is where the hip connects to the tail bone. The auricular surface is also important in aging. The preauricular sulcus, which located just below the auricular surface hence the name, is thought to occur more commonly in females than males. The preauricular sulcus was rated as follows:

0= Absence of preauricular surface
1= The preauricular surface is wide often exceeding 0.5 cm and is deep
2= The preauricular surface is wide often exceeding 0.5 cm and is shallow
3= The preauricular surface is well defined but narrow less than 0.5 cm deep
4= The preauricular surface is narrow less than 0.5 cm deep, shallow and smooth walled depression

Cranial (skull) morphology is also a good indicator of an individual's sex. Males tend to be more robust than females but this type of observation can prove more challenging considering the range of robustness observed in human populations and between individuals. Five features were examined:

The Nuchal Crest- on the back of the skull is examined in lateral (side) view. It is examined by hand to feel for rugosity of the nuchal (neck) muscle attachments. In the case of minimal expression the score would equal one, the external surface of the occipital bone (back of skull) is relatively smooth and no bony projections are visible in lateral profile. Maximal expression is a score of five and the occipital region has large and massive nuchal crest with a distinct inion hook observable in lateral (side) view, sometimes this is also expressed as a distinct shelve or ledge.

The Mastoid Process- is the large bone that projects just below your ear canal. The scoring is a little more challenging as it is not merely a measure of length but a measure of volume. It is a comparison of the structure to the external auditory meatus (ear canal) and the Zygomatic process of the temporal bone (where the cheek bone meets the side of the head). Minimal expression is a score of one and individuals exhibiting this score have mastoids that have minimal projection below the inferior margin of the external auditory meatus and below the digastric groove. Maximal expression is scored as a five and the mastoid not only projects several times below the above described margins but is also quite broad in width.

Supraorbital Margin- The eye orbit is observed by hand feeling the margin (rim) of the orbit between the finger and thumb at the lateral aspect of the supraorbital foremen. A score of one is given to margins that feel narrow or are described as sharp. A score of five is given to those margins is described as thick, curved.

Prominence of Glabella- is examined in lateral (side) view. The area at brow level between the eyes is called the glabella. Those individuals showing a flat or little projection at the midline are scored a one. Those individuals with pronounced projection in the midline or demonstrate a strong supraorbital ridges (brow ridge) are scored as fives.

Mental Eminence- is a bony projection in the shape of a curve on the front of the jaw. The mandible (jaw) is held in the hand with finger and thumb just lateral to the eminence, the thumbs which are on the external surface of the mandible are moved medially (toward the center) to delimit the margins of the eminence. In mandibles exhibiting minimal projection or a score of one and there is very little projecting of the eminence above the surrounding bone. The maximum expression or a score of five in contrast exhibits a massive mental eminence that occupies the anterior portion of the mandible.

The sex is finally estimated using the above data from the pelvis and skull utilizing these sexually dimorphic characters (those characters that distinguish males from females). The individual is then given one of the following ratings of sexual dimorphism:

0= **undetermined sex** -Insufficient data to make sex determination (missing structures)
1= **female**-There is little doubt that the structures represent a female
2= **probable female**-The structures more likely represent a female than a male
3= **ambiguous sex**-Sexually diagnostic features are insufficient to classify as male or female (structures present but not helpful)
4= **probable male**-The structures more likely represent a male than a female.
5= male- There is little doubt that the structures represent a male

This resulted in the following determinations concerning sex:

Gilmore (Burial 23): Cranium was rated as a **0**, exhibiting poor preservation; the postcranial was rated as a **0**, exhibiting poor preservation. The overall rating was **0** (Sex could not be determined).

Thoreau (Burial 27): Cranium was rated as a **4**, exhibiting partial preservation; the postcranial was rated as a **4**, exhibiting partial preservation. The overall rating was **4** (probable male).

Green (Burial 29): Cranium was rated as a **4**, exhibiting partial preservation; the postcranial was rated as a **0**, exhibiting poor preservation. The overall rating was **4** (probable male).

Edwards (Burial 30): Cranium was rated as a **5**, exhibiting partial preservation the individual had a very strong mental symphysis, the postcranial was rated as a **4**, exhibiting partial preservation. The overall rating was **4** (probable male).

Hogg (Burial 33): Cranium was rated as a **4**, exhibiting partial preservation; the postcranial was rated as a **5**, based on sciatic notch. The overall rating was **5** (male).

As would be expected, with the exception of Glimore all of the individuals were determined to be male. The remains of Gilmore were so poorly preserved that there were few bones present that could be use to determine the sex of this individual.

AGE

The five burials were classified as adults (over 20 years of age) or sub-adults (less than 20 years of age) based on the criteria of Buikstra and Ubelaker (1994:21-46). The biological age for each sub-adult was based on epiphyseal closure (closure of growth plates of the bones) and an analysis of the sequence of dental eruption (after Ubelaker 1989), as described in the *Standards for Data Collection from Human Skeletal Remains* (Buikstra and Ubelaker 1994:43, 51). Age at death of the adults were determined using dental eruption sequences, auricular surface attributes, pubic symphysis attributes, and cranial suture closure (Buikstra and Ubelaker 1994:21).

Age distribution of the burial population

Although all of the burial remains were highly fragmented, they could be assigned to a general age category. The following age groupings were used to assign the immature remains to age categories as per the *Standards*:

F (Fetal) = less than birth
I (Infant) = birth to 3 years
C (Children) = 3-12 years of age
AO (Adolescents) = 12-20 years of age

The following age groupings were used for adult remains as per the *Standards*:

YAD (Young Adult) = 20-35 years of age
MAD (Mature Adult) =35-50 years of age
OAD (Old Adult) = greater than 50 years

When only a simple designation of immature or adult could be made the groupings as per the *Standards* were used:

J = Juvenile
A = Adult

The results of this categorization are observed as follows:

Gilmore (Burial 23): Age appears to be 18 years or greater, based on 3rd molar eruption. There does appear to be a certain amount of wear on the teeth suggesting a wear rating of 4. This would still lead to a classification of individual as a **YAD** (Young Adult = 20-35 years of age), dependant on the toughness of the diet. If the diet was not particularly abrasive the individual could be older perhaps substantially, if the diet was very abrasive he could be younger, however that is not likely.

Thoreau (Burial 27): The auricular surface (where the tailbone connects to the hip) although not complete is very rough and billowed indicative of stage one or younger on the auricular surface aging technique, suggesting an age under 18. This is supported by the third molar which has not yet erupted from its socket. Estimated measures of the humerus, ulna, and femur were compared to those of Maresh (1970 in Scheuer and Black 2000:289, 298, 394) and the ages predicted were 14-14.5 years, 10.5-11.0 years, and 11.0 to 11.5 years, respectively. While this individual was certainly not this young, but due to malnutrition this individual may have been of comparable size to a child of this age. However, the available evidence does suggest that this individual may have been less than 18 years old when he died. Fort this reason Thoreau was classified as an **AO** (Adolescent = 12-20 years of age).

Green (Burial 29): Neither the cranium nor the pelvis is particularly informative because of the fragmentation of this individual. The teeth are only slightly more informative. They are all erupted and the person has moderate wear on his premolars. Based on his dentition this individual was classified as a **MAD** (Mature Adult = 35-50 years of age). Estimated measures of the ulna and the femur were compared to those of Maresh (1970 in Scheuer and Black 2000:298, 394) the ages predicted were 13 years and 14 years, respectively. As with Thoreau these measurements probably reflect malnutrition Green may have suffered as a child (see appendix C for measures). Stunted growth is one possible outcome of malnutrition. However, based on the data derived from the teeth this individual was a mature adult.

Edwards (Burial 30): Age appears to be 18 years or greater, based on 3rd molar eruption. The pelvis is extremely fragmented with about 15 percent present. The left auricular surface is damaged at the apex. The inferior demiface shows granularity but no billowing, a very rough guess would be phase 2 (age 25-29). Based on this analysis this individual was categorized as a **YAD** (Young Adult = 20-35 years of age)

Hogg (Burial 33): The pelvis is pretty fragmented. The area is weathered to stage three in some areas. However, the auricular surface is visible and it shows macroporosity and strong lipping in the apex. The surface is irregular, the retro auricular area is difficult to interpret because of weathering, but is very rugged. and porous suggesting Phase 7 (age 50-59) or that observed porosity is related to weathering an as yet unidentified disease. Examination of rib end suggests a substantially younger individual than by the auricular surface of the rib. The rib end was only very slight indented and the lip was symmetrical. Based on the analysis of the ribs this individual was categorized as a **YAD** (Young Adult = 20-35 years of age).

BIOLOGICAL AFFINITY

The biological affinities/heritage of the individuals were calculated using a number of different independent lines including Fordisc 2.0 (Owsley and Jantz 1990), metrics measures, nonmetric measures and dental, cranial and postcranial measures. Their biological affinities as derived from these calculations are as follows:

Gilmore (Burial 23): exhibits a nonmetric trait called Carbelli's Cusps usually found in European populations.

Thoreau (Burial 27): is represented by proportions of the cranium and some very limited fragments of the post-cranium. Thus, no clear biological affinity identification could be made for this individual.

Green (Burial 29): had cranial measures (i.e., minimum frontal breadth, nasal breadth, frontal chord, occipital as well as maxillo- alveolar length, orbital breadth and mandibular height) that initially based on the Fordisc 2.0 calculations indicated this individual was a black female (see Appendix C for measures). However, the sex identification noted above and other recorded attributes described in this section indicate that this person was a small but robust male.

The Fordisc 2.0 misclassification points out one of the difficulties of comparing older populations that lived under different circumstances with modern samples. If females are eliminated from the fordisk sample the individual appears to fall in the category of black male, but is an outlier on the small end of this grouping. The cranial measures when compared to a Howell's global sample appear closest to Eskimo (Inuit) populations. It is highly unlikely that Green has Inuit ancestry so what are the measures and classifications telling us about the shape of his head?

First when the mandible measurements are entered into Fordisc 2.0, Green appears to be most similar to Native American males. Perhaps it is safe to say Green had a broad face (chin, mid-facial region, and forehead) and a large mandible. The remainder of his head appears narrow and long more like skulls of African origin.

His dentition was not particularly informative, but his incisors were not shoveled, a trait observed in Asian and Native American populations. A nonmetric feature observed was the presence of ossicles or extra bones in the lambdoidal suture of the occipital bone. Ossicles are often observed in many populations but are more frequent in people of Native American heritage (Berry and Berry 1967). One possibility based on the combination of short stature, short wide face, and indicators of malnutrition is that Green was a person of mixed heritage (exhibiting features from someone of North American Indian and other ancestry).

Edwards (Burial 30): The bone was too weathered or damaged to comment on individual's biological affinity.

Hogg (Burial 33): Although some measurements could be derived from the remains of this individual, most of the bones were highly fragmented, which limited the amount of data that could be collected. Based on those measurements that could be taken the biological affinity of this individual could not be determined.

PATHOLOGIES

Each bone was inventoried and scored as to determine if the following pathologies were present: Abnormal bone shape, Abnormal bone size, Abnormal bone loss, Abnormal bone formation, fractures or dislocations, Porotic Hyperstosis, Vertebral

pathologies (including arthritis), and finally other types of arthritis. When observable this information was recorded for each individual. Again the fragmentary nature of the human skeletal remains hampered efforts to identify pathologies. Hogg's age for example was impaired by weathering and possible unknown pathology in the retro-auricular region which placed his age closer to 50-59 rather than the 20-34 age made by other methods. The most notable pathology was associated with Thoreau. The strong curvature of his forearms is suggestive of malnutrition, such as vitamin D deficiency (Rickets).

TAPHONOMIC CHANGES

A variety of taphonomic/postmortem and perimortem processes/events appear to have affected this skeletal population. The vast majority of these processes are reflected as color changes noticed on specific bones. The origin of these color changes range from various molds, to the most common form found in this population, metal oxidation stains. Also present are various stages of weathering and postmortem warping. Molds occur naturally *in situ* or can occur from improper storage. Tall the molds found in this population were due to natural *insitu* processes. The mold stains range in color from black to white.

During excavations the field archaeologists noted that some of the ribs had a black mold on them, and that the area of the chest cavity was wetter or damper compared to the surrounding area. This may have contributed to the relative fragmentation and poor preservation of the chest of these burials.

The most common form of discoloration observed on the remains of the burials from the State Monument was the oxidation of metal on the bone. This discoloration happens when metal objects either rust onto or leave a green stains on skeletal material. The most common source of staining was the coffin hardware, especially tacks and nails. For example, a green metal stain was noted on the distal third of Green's right humerus just above epiphysis of the elbow (Figure 32). The stain surrounds most of bone except its lateral portion. The stain measures 8.4 cm in length.

Another source of discoloration appears to be the use of charcoal for transportation of Green's body (Figure 33; see also Figures 41 and 42). For his transport from Mexico to Frankfort Green's body was packed in charcoal (white oak). Gray to blackish charcoal stains were noted over most of his skeletal remains. Green's head exhibited the least amount of charcoal staining, and the arms, legs, feet, and vertebrae the most.

Figure 32. Humerus with Green Metallic Stain (Green).

Figure 33. Example of Vertebrae with Charcoal Staining.

Bone Weathering

The weathering of skeletal material was coded as per the *Standards* after Behrensmeyer (1978). The majority of the human remains from the State Monument were in a poor state of preservation: stage 5 or worse with total destruction of the bone. This is in part attributed to the fact the most were war veterans who were not buried at the state monument immediately after their death. Three of the individuals (Edwards, Green, and Thoreau) were interred on the battle field in Mexico and then exhumed to be reburied at the State Monument.

An exception to this pattern is Gilmore who in 1880 shortly after his natural death was buried in Frankfort. He was buried in a wooden casket that deteriorated much more rapidly than the metal coffins his fellow veterans were buried in. It is not known how soon after his death Hogg was buried at the State Monument.

The acidic soils associated with the State Monument also contributed to the weathering of the human skeletal remains. Weathering stages on these remains were documented as follows:

Stage 0: Bone surface shows no sign of cracking or flaking due to weathering.

Stage 1: Bone shows cracking, normally parallel to the fiber structure (e.g., longitudinal in long bones). Articular surfaces may show mosaic cracking.

Stage 2: The outermost thin layers of bone show flaking. The flaking is usually associated with cracks, in that the bone edges along the cracks tend to separate and flake first. Long thin flakes, with one or more sides still attached to the bone, are common in the initial part of Stage 2. Deeper and more extensive flaking follows, until most of the outermost bone is gone. Crack edges are usually angular in cross section.

Stage 3: Bone surface is characterized by patches of rough, homogeneously weathered compact bone, resulting in a fibrous texture. In these patches, all the external, concentric layers of bone have been removed. Gradually the patches extend to cover the entire bone surface. Weathering does not penetrate deeper than 1.0-1.5 mm at this stage, and bone fibers are still firmly attached to each other. Crack edges are usually rounded in cross section.

Stage 4: The bone surface is coarsely fibrous and rough in texture; large and small splinters occur and may be loose enough to fall away from the bone if it is moved. Weathering penetrates into inner cavities. Cracks are open and have splintered or rounded edges.

Stage 5: Bone is falling apart, with large splinters. Bone easily broken by moving. Original bone shape may be difficult to determine. Cancellous bone

usually exposed, when present, and may outlast all traces of the former more compact, outer parts of the bones.

All of the individuals' crania and post crania exhibit signs of postmortem warping due to damp conditions (Figure 34). The nature of decomposition of the skull is such that as the body decomposes it is likely to roll slightly and lay on its side, allowing pressure to be exerted upon it from lateral angles. To further complicate this, many of the crania and post crania were damaged upon collapse of their coffin as the wood and metal deteriorated. All of the individuals had components of their body weathered to stage five and beyond (total destruction of the bone). Those that were intact had an average rating of stage two to three. Most of the surviving bones had to be reconstructed to some degree. This severely limited the measurements and analysis that could be undertaken on the human skeletal remains recovered from the State Monument.

Figure 34. Long Bone Weathered to Stages 2 and 3 (Note that large portions of bone flaking off exposing large patches of cancellous bone, the breaks are still angular and not rounded).

Trauma

Considering these were war veterans special attention was given to looking for and documenting trauma to the bone. The results were very disappointing. One

anticipated finding was that the analysis would be able to document unhealed breaks or bullet wounds, or some type of cut marks. Unfortunately this was not the case. What was noticeable was that the chest cavities of most of these individuals were highly fragmented. This is interesting indeed and one might speculate this might be the result of war time injuries. It is equally likely though that this is from natural decomposition and the results of multiple dis- and re-interments. It also could be the due to the collapse of the coffins and subsequent crushing of the chest cavity. Injured areas do have higher rates of decomposition than those that are intact, but there is little evidence that can be used to conclusively support any of the above scenarios.

DENTAL INVENTORY

The burials were examined for dental attributes by the use of the *Standards for Data Collection from Human Skeletal Remains* (Buikstra and Ubelaker 1994). Visual recording forms (*Standards* form 14) were completed for the permanent dentition if dentition was present. Next the presence and absence of teeth were recorded on *Standards* form 16. Additional comments such as the amount of wear, caries (cavities), abscesses and calculus formation were also recorded here. The Smith (1984) and Scott (1979) systems used in *Standards* was used to record surface wear on the teeth.

Hypoplasias and enamel opacities were recorded on form 18. Hypoplasias are defects that occur in the enamel during the growth of the tooth. The defects in the enamel can manifest themselves as single or multiple pits, they often exhibit themselves as narrow or wide troughs. Sometimes the enamel is missing entirely. Enamel hypoplasias cannot be attributed to a single cause, like a specific disease or nutritional deficiency. However, they are considered excellent indicators of interruption of development due to metabolic stress. Due to the regular deposition of human enamel and the fact it does not regenerate itself, measurements of the enamel hypoplasias can be taken to determine the age of the person when they faced this bout of disease or malnutrition. Regression equations are used to calculate the age of the person at the time of the disturbance.

Hypoplasias were observed on Edwards' (n=17) and Green's (n=2) dentition (Figure 35). The work of Good man and coworkers (1980, 1984) suggest that hypoplasias analysis focus on the incisors and canines, which is the type of analysis undertaken here. The data was compared to the results observed for the Old Frankfort Cemetery in an analysis by Mindi King (2006).

Enamel opacities are similar to hypoplasias in that they are defects in the quality of the enamel. Opacities are different in that they exhibit themselves as variations in color and translucency of the enamel. No enamel opacities were uncovered for the Mexican War Veterans.

Dental measurements were recorded on form 20 of Standards. Teeth are generally measured from front to back or Mesially-Distally; from side to side (that is cheek to tongue) or bucco-lingually and from base to top or crown height. These measures are

usually abbreviated as md for mesial-distal, bl for bucco-lingually and ch for crown height

Figure 35. Examples of Hypoplasias (Note horizontal lines on teeth).

The wear measures and the crown height measures help control for any irregularities in calculating the onset of the different defects.

Gilmore (Burial 23): Very little could be done with Gilmore's teeth. His dentition is represented by three partial lower left molar crowns. They appear to be lower left molar 1, molar 2, and molar 3. No hypoplasias were observable. Molar 1 is fractured in half bucco-lingually. Each molar has a pin hole caries (cavity) and the first has two. The second molar has a Carbelli's cusp. This a trait whose the highest frequency of occurrence is observed in European populations (20-30 percent) less so in African Populations (15-20 percent) and seldom in American Indians and North Asian peoples (0-10 percent) (Scott and Turner II 2000). None of the molars have intact roots but all appear to be from an adult. The age of this individual is greater than 18 years based on the eruption of the 3rd molar. Wear scores are 4 for all four quadrants on all three teeth. Measurements for molar 2 and molar 3: molar 2 md=11.5 bl=10.5 ch=6.92; molar 3 md=11.73 bl=8.17 ch=6.20. Although female and male dental measurements overlap

substantially with only a 2 to 6 percent difference between the sexes, the molar 2 score for this individual is outside the range of most females. This adds additional support for the assessment of sex as being male (Garn et al. 1967).

Thoreau (Burial 27): The facial region is missing with the exception of two fragments of the maxilla (upper face) that contained a partial dentition. (See Appendix D). The right mandible (jaw) is broken at the canine and the anterior (front) portion is missing. The left mandible (jaw) is represented by a small piece of alveolar bone holding premolar 2 thru molar 2. The dentition is complete with the exception of the upper right first incisor. Measurements are recorded in Appendix D. Caries were observed on the upper left second molar on the distal surface between molar 2 and molar 3, and a pin point caries was observed in the center of the occlusal surface of the lower right second molar. Thoreau exhibited 17 hypoplasias, including ten occurrences on premolars and molars which were not analyzed. The regressions created by Mindi King for the timing of the onset of hypoplasias in adult males from the Old Frankfort Cemetery were used in this analysis. This burial population represents a sample of people most of whom died before the Mexican American conflict. The hypoplasias on the maxillary first incisor and canine, and the mandibular canines, point to periods of malnutrition or illness at 12-16 months, 22-30 months, and again just before 44-45 months of age.

Green (Burial 29): There is some postmortem (after death) damage to the teeth with the loss of the upper central incisors. The upper right incisor and premolar as well as the upper left third molar are also missing. The lower left premolars and first molar are missing the exterior surface of the dental enamel. The upper dentition has caries in four of the teeth as does the lower. No observations other than for hypoplasias were taken. Green exhibited two hypoplasias. Both on the left mandibular canine. These hypoplasias indicate periods of malnutrition or illness at 21 months and 30 months old.

Edwards (Burial 30): Edwards' dentition is interesting in that the maxillary dentition is stained with a rust colored metal. The lower dentition is relatively clean and white possibly indicating that it was found in a different location within the coffin. The field notes support this observation. Perhaps the mandible was separated from the cranium during the transportation of his body from Mexico to the State Monument. Differential preservation of Edwards' skeletal remains resulted in the mandibular dentition being better preserved than the maxilla dentition. The upper left central incisor was missing postmortem and not recovered. The upper second incisors are both stained with metal as are the left three molars. Pin point caries were observed on the upper first and second molars on both sides. There is relatively little wear on the teeth with the exception of the lower right first molar. The pattern suggests Edwards may have had an uneven bite and favored this side of his mouth. Measurements were recorded in Appendix D. No hypoplasias were found.

Hogg (Burial 33): Hogg's dentition is represented by 15 crowns without their roots being attached. Six roots were recovered. The crowns were identified as follows: six were premolars, two were canines, two were upper central incisors, and four were upper molars. The mandible had all the molars intact and the right second premolar intact. Two small pinpoint caries were present on the right molar 2 and molar 3. None of the teeth observed exhibited any significant wear nor did they have any hypoplasias. Measures of the intact mandibular teeth are presented in Appendix D

INDIVIDUAL BURIALS

Gilmore (Burial 23)

Though this burial was the most recent one excavated, with Gilmore having died in 1880, his skeletal remains were in the poorest state of preservation. Most of his remains had totally decomposed as had his wooden coffin. The overall bone tone ranges from pinkish gray to darker brown areas. In general the skeletal remains appear to have been discolored from water seepage as well as from the contact with metal and the adjacent subsoils.

Gilmore's cranium was highly fragmented, with the right temporal bone (the petrous portion) being partially intact but with the mastoid region being damaged and missing. The petrous portion is separated from the squamosal portion. Six pieces of parietal are clearly identifiable. One from the right side portion has two archnoid sinuses on the interior surface. A small piece of the frontal bone from the right orbit is identifiable. The right frontal bone superior to the orbit is eroded down to the cortical bone. The remaining fragments are under 3 cm in size. One portion of the occipital has a portion of rusted metal attached to it.

There appears to be three dental crowns present. They appear to be the three lower left molars (molar 1, molar 2, and molar 3). Each molar has at least one pinhole cavity, with the first molar having two. Molar 1 was fractured in half bucco-lingually.. The second molar appears to have a Carbelli's cusp. Though none of the molars have intact roots all appear to be from an adult. None of the molars have hypoplasias. Age appears to be 18 years or greater, based on the eruption of the 3rd molar.

Three fragments of the foot are identifiable. They are from the left side and are fragments of the navicular and proximal end fragments of the first and third metatarsals based on the shape of their articular surfaces.

Based on the analysis of the skeletal remains Gilmore appears to be an adult male greater than 18 years of old. No materials were available such that height could be calculated.

Thoreau (Burial 27)

While Thoreau's cranium is less fragmented than that of Gilmore, few useful measurements could be obtained from it. The facial region is missing with the exception of two fragments of the maxilla (upper face) that contained a partial dentition. The right mandible (jaw) is broken at the canine and the anterior (front) portion is missing. The left mandible (jaw) is represented by a small piece of alveolar bone holding premolar 2 thru molar 2. The dentition is complete with the exception of the upper right first incisor.

Thoreau exhibited 17 hypoplasias. Caries were observed on the upper left second molar on the distal surface between molar 2 and molar 3, and a pin point caries was observed in the center of the occlusal surface of the lower right second molars.

The Temporal-mandibular joint (TMJ) is where the jaw meets the cranium at the base of skull. The TMJ is present and part of the greater wing of the sphenoid bone is attached and intact. The remainder of the sides of the cranium are missing. The hypoplasias on the maxillary first incisor and canine, and the mandibular canines, point to periods of malnutrition or illness at 12-16 months, 22-30 months, and again just before 44-45 months of age

What remain of the cranium are part of the temporal on both sides and a midsection of the occipital bone linking the two temporal bones, the foremen magnum and the base of the occiput are missing. The internal aspects of the skull are also missing, (the lesser wings and the body of the sphenoid, which forms the base of the skull are absent). The sphenoid bone along with the ethmoid, which helps support the nose and upper face are all absent.

One observable non-metric trait is found on the internal aspect of the occipital bone (the back of the skull). In this portion of the skull there is a major venous return of blood flow to the base of the skull called the flexure of the superior sagittal sulcus. In most people the flexure is to the right side of the occipital bone, but in some individuals it flows to the left or on both sides (bifurcate, a pattern in which the blood flows equally to the right and left). In this individual, the superior sagittal sulcus flexure is on the left side.

In the region of the ear, there is no auditory extoses (bony intrusion to the ear usually associated with very cold conditions) and the auditory canal is fused (the normal condition). The right frontal orbit sill is thick and rounded indicative of a male as is the enlarged supracillary area (brow). The occipital region has a clear inion hook also indicative of a male individual. There are no clear markings on the recovered fragments that are indicative of trauma. While it is possible that some of the missing elements/data are indicative of battlefield injuries, it is equally probable that the missing or decomposed elements are indicative of postmortem activity, such as incomplete recovery of the remains during the reinterment and transport from Mexico to Frankfort or the differential decomposition of the skeletal remains after Thoreau was reinterred at the State Monument.

The post cranial portion is slightly more intact than the cranium, although the thoracic region is not very well-preserved most of the vertebrae are represented by a few worn centra or irregular shaped cortical fragments. The clavicles (collar bone) are represented by two midshaft portions of the bone that are rather robust but not measurable. The left scapula (shoulder blade) is very fragmented but an estimate of glenoid fossa length is 31.9 mm and its width is approximately 21.3 mm. Again these traits indicate that this is a male individual.

The upper arm is rather robust and shows robust muscle insertions. The humeral shaft is robust relative to its rather short length. Both distal and proximal epiphyses (ends of the bone) are damaged but a rough estimate of the right humeral head is 42.1 mm (indicative of a male), the length could not be calculated, the circumference at the estimated midshaft was 7 cm. An estimated humerus length of 28 to 29 cm was derived by taking the two recovered sections and adding 2 cm from the distal epiphysis of the right humerus to account for the missing portion of this bone.

In general, this is a rather short humerus for an adult male, the average adult males humerus at age 18 is 35.06 cm (Maresh 1970 in Scheuer and Black 2000:289). The stature calculated from humeral length indicates that this individual was not very tall or large, probably less than 62.2 inches (five foot two inches) tall with a possible range in height from four foot eleven inched to just below five foot five inches (59.6-64.8 inches Fordisc 2.0 Trotter Formula).

The trochlea (elbow joint) of the left ulna is missing; a rough physiological length for this individual's ulna (forearm) has been estimated at 19.7 cm. The average length of the ulna for a male at 18 years is 28.16 cm (Maresh 1970 in Scheuer and Black 2000:308). The minimum ulna circumference is 3.3 cm. Other dimensions were not taken as the ulna was flaking along the interosseous surface. All of the upper arm appears to be short and overly curved which points to perhaps rickets and some type of malnutrition.

The left hand indicates some early degeneration around the proximal metatarsal joint, which is unusual for young adults. This may indicate that this individual participated in intense and sustained work activities with his fingers or that he had arthritis.

There is a fragment of the later distal portion of the right calcaneus (the heel bone). A smaller fragment of the articular surface of the left calcaneus also seems to be present. Additional ankle bones recovered include a piece of the talus that is missing its navicular head. Three small middle phalanges (toes) were bagged with the left calcaneus and talus fragments. A left fifth metatarsal is evidenced by its base.

The right femur has some damage to its head and the greater trochanters are missing. There is a strong arch to the femur. The femur is weathered to stage 2, the distal epiphysis is missing. The length of the bone is estimated at 36.6 cm, which again is

indicative of a person of relatively short stature. This bone tends to be on the heavy side by feel. This can indicate several things. Some populations such as Africans have denser bones. This is attributed to a more rigorous or active lifestyle resulting in denser bone. This lifestyle has been recurrent for thousands of years and now seems to have a genetic component to it. A second source of greater bone density without the genetic predisposition, would be the additional bone that is built from long-term muscle stress resultant from intense labor or physical activity (Larsen 1997:195-225).

Lieberman (1996) looked at increases in bone density as a result of walking long distances and strenuous activity. He put pigs on different dietary regiments and physical activity regiments and was able to show significant differences in bone density in all the bones. What was particularly interesting were that bones of physically active subjects including those not involved in the physical activity like the bones of the skull were denser. An increase in bone density also can result from bone remodeling as a result of certain diseases.

One way to measure differences in the structural properties of bone is to take measures of the circumference of the bone and its widths and breadths. Generally this is done at the midshaft but additional measurements can be taken at different locations that have different mechanical stresses on them as well. Generally these measurements are then compared to the overall length of the bone to create an index so comparisons to other individuals and populations can be made (Ruff 2000). A measure from front to back is called anterior to posterior length commonly referred to as AP length. A second measure is that of breadth which is referred to a Medial lateral length or ML lengths. The approximate midshaft circumference of the femur is 8.8 cm, the AP diameter midshaft is 29.7 mm, and the ML is 25.0 mm. However because of damage to the ends of the femur no index was calculated.

The left femur is damaged both along its proximal and distal ends, and has an orange metal stain on the greater trochanter. It exhibits Stage 3 weathering with many of the flakes having fallen away leaving a smooth wear in the missing chip. Both the right and left tibia are missing both proximal and distal epiphyses both are weathered to Stage 3 with flaking bone.

Because the right and left inominate (pelvis) were very friable and fragmented no measures could be taken. Although fragmented some useful data could be derived from the left inominate. The acetabulum (hip joint) is large indicative of a male individual. The auricular surface of the pelvis although not complete is very rough and billowed indicative of stage one or younger suggesting an age under 18. This is supported by the third molar, which has not yet erupted from its socket (See dental sheet in Appendix D for further information).

Based on the analysis of the skeletal remains Thoreau appears to be a young male less than 18 years old (16-18). He probably did heavy labor in which he used his hands extensively. His bones appear robust in weight but small in size. He like Green (see below) shows malnutrition and vitamin D deficiency (rickets). His dentition is relatively

intact although not in place. As discussed previously the teeth show 17 hypoplasias which are indicative of multiple bouts of disease or malnutrition when Thoreau was less than four years old.

Green (Burial 29)

Although Green's cranium was fragmented, it was possible to reconstruct the frontal, parietal and occipital areas to form a calotte (the dome portion of the skull, lacking face, sides and base of skull) and complete occipital sans foremen magnum. His rounded orbital sills and supracillary arches are indicative of a male individual. The muscle markings at the back of the skull on the occipital bone near the inion are marked but no hook is present. This also is indicative of a male individual.

Green's teeth exhibit a number of small caries and his upper canines have two hypoplasias indicative of bouts of disease, such as a fever or short term malnutrition, during childhood (just slightly less than two and then again at two years and eight months).

Some non-metric traits are observable. There are ossicles or extra pieces of bone along the Lambdoidal suture at the back of the skull. These ossicles are observed in may populations but have the highest present in North and South American indigenous peoples (Berry and Berry 1967). The sagittal suture, which runs from the mid portion of the skull to the back of the skull, is fused in the most posterior or rear portions, this can indicate advancing age. On the frontal bone (forehead) a metopic suture is present. Normally a metopic suture which divides the right and left portion of the frontal bone closes during childhood at the age of two. Reasons given for the metopic suture remaining open are varied but there is a tendency for it to run in families (Scheuer and Black 2000:105).

The body was buried in charcoal and portions of the body are stained gray to blackish. The head is the least stained, the arms, legs, feet and vertebrae are the most stained

The height of this individual based on length of the femur would be five foot four inches $\pm$ 1 inch (see post-cranial measurements). Again this individual is on the short end of the scale for this time period but is minimally two inches taller than Thoreau.

A green metal stain was observed on the distal third of right humerus, just above the epiphysis. It surrounds most of the bone except its lateral portion and occupies an area that is about 8.4 cm long. The total length of the ulna and humerus could not be determined because of the damage to the ends but there overall appearance was short and curved like Thoreau's arm bones. Again this probably is indicative of malnutrition and rickets.

Based on the analysis of Green's skeletal remains he appears to have died before his 20th birthday. He exhibits signs of long-term malnutrition or disease in both his

dentition as evidenced by hypoplasias and the curvature of his arms and legs rickets. This state of ill health is also exemplified by his stunted stature (five foot four inches $\pm$ 1 inch) and arm length. Green also is of interest with respect to his biological affinity or heritage. He exhibits characteristic, such as short stature and malnutrition, that place him outside the normal range of variation observed in healthy Euro-American individuals.

Green appears to have a broad face and chin similar to what is often associated with Native American groups. However, he does not exhibit winging or shoveled incisors, which would confirm Native American ancestry and he does have a metopic suture, which more often occurs in European populations than in Native American populations. Based on these observations it is quite likely that Green was a person of mixed ancestry possibly Native American and European.

Edwards (Burial 30)

As with the other burials this individual's cranium is fragmented. However, the frontal area is rather complete though it had sustained damage to the area above and including the left orbit. The right orbit is more intact but the orbit sill is damaged. Root marks are observable on the forehead. Along the right sagittal suture there is an area that exhibits approximately 18 small pits. It appears to be due to the flaking off of the surface bone in areas where a black circular mold occurred exposing the underlying cortical bone. It does not appear to reflect a pathology or trauma to the skull.

No reconstruction of the skull was attempted as the remains were too fragmentary. The temporal bone mastoid had a length of 30.7 mm which indicates that this individual was male.

Non-metric characteristics were observable are in the region of the ear and there were no auditory extoses (bony intrusion to the ear usually associated with very cold conditions) and the auditory canal is fused. The sagittal suture is highly interdigitated but depressed along its visible length, which is of interest because depression at the bregma, the top of the skull, may indicate African ancestry, however in this case it may indicate a expansion of the diploe of the skull, which may indicate an anemia or malnutrition. The latter seems most likely given the other individuals in this burial population.

Differential preservation of Edwards' skeletal remains resulted in the mandibular dentition being better preserved than the maxilla dentition. The upper left central incisor was missing postmortem and not recovered. The upper second incisors are both stained with metal as are the left three molars. Pin point caries were observed on the upper first and second molars on both sides. There is relatively little wear on the teeth with the exception of the lower right first molar. The pattern suggests Edwards may have had an uneven bite and favored this side of his mouth. Measurements were recorded in Appendix D. No hypoplasias were found.

The following comments could be made about the postcranial skeleton. The scapula could be partially measured with the following measurements taken of the

glenoid fossa (r): AP=38.8 mm, ml=27.93 mm. The pelvis is extremely fragmented with about 15 percent present. The left auricular surface is damaged at the apex. The inferior demiface shows granularity but no billowing; a very rough guess would be phase 2, which would indicate an age of 25 to 29 years old.

No measurements were taken on the long bones as no epiphyseal ends were present and the cortical bone was peeling off, which hampered efforts to identify pathologies. The muscle attachments at the proximal ulna were marked as were the markings on the femur. The left humerus had a large piece of metal attached to it from the coffin. Due to the fragmented nature of the long bones, this individual's height could not be determined. Portions of the right and left hand were identifiable although not fully represented, and the feet were highly fragmented.

Based on the analysis of the skeletal remains Edwards appears to be an adult male greater than 20-26 years of old. The bones exhibited a good deal of weathering which made it difficult to analyze his remains. Many of his upper teeth were missing but the lower teeth were interesting in that the mandible was separated from the cranium and did not exhibit the staining of the upper dentition. This may indicate that the mandible had become separated from the rest of the skull during transport from Mexico to Frankfort. Edwards's teeth were rather healthy with a few pin point caries and no hypoplasias observed.

Hogg (Burial 33)

As with the other burials, the cranium from this burial was very fragmented, such that no cranial measurements could be made. Observations that could be made were that the relatively intact occipital has a strong inion hook indicative of a male individual.

Hogg's dentition is represented by 15 crowns without their roots being attached. Six roots were recovered. The mandible had all the molars intact and the right second premolar intact. Two small pinpoint caries were present on the right molar 2 and molar 3. None of the teeth observed exhibited any significant wear nor did they have any hypoplasias. Measures of the intact mandibular teeth are presented in Appendix D.

The scapula is very robust and is evidence by a long heavy spine with both sides having attached heavy metal fragments (orange color). The vertebrae were intact and the lumbar region exhibits elevated rings and Smorl's whorls indicative of advanced age and or heavy lifting. The axis is present and fused to a piece of metal. The atlas is broken but present and it is also fused to a piece of metal.

The pelvis is pretty fragmented but the narrowness of the sciatic notch indicates a male. The pelvis is weathered to stage 3 in some areas. However, the auricular surface is visible and it shows macroporosity and strong lipping in the apex. The surface of the retro auricular area is difficult to interpret because of weathering, but is very rugged and porous. These attributes could be indicative of an individual who was 50-59 years old when they died or they could reflect a combination of weathering and disease processes

that afflicted this individual. Given the data presented below on the ribs indicating an age of young adult the latter interpretation of the pelvis being affected by disease processes and weathering appears to be more likely, suggesting a younger age.

The sacrum is damaged superiorly, but a length can be taken: 102.53 mm. The fifth lumbar is partially fused to the sacrum. The sacrum's auricular surface is very porous and irregular. There is a piece of metal approximately 45 x 45 mm wide at the posterior base of the sacrum.

The ribs were relatively intact and examined for cut marks, pathology, and other trauma. The left ribs were slightly fewer in number but in better condition than the right ribs. Examination of the rib end suggests a substantially younger individual than indicated by the auricular surface of the pelvis. The rib ends were granular, only very slightly indented and the lip was round and straight, which is indicative of young adults (Iscan et al.1984, 1985). No fractures, traumas, or diseases were observed on the ribs.

The left humerus measures 31.4 cm long and the head measures 47.9 mm. The epicondylar breadth was 62.42 mm and the remainder was very friable and not measured. On the left femur, it was possible to measure head width (49.04 mm) and epicondylar breadth (81.25 mm). The distal left tibia measures 57.33 mm, with the remainder of this bone being highly fragmented. The right tibia consists of shaft only.

Hogg's stature was estimated using his humeral length in Fordisc 2.0 and using the Trotter formula. This resulted in a stature of five foot five inches $\pm$ 2.6 inches.

The hands and feet were represented by carpal and tarsal fragments. Three phalanges were present on the left hand none were associated with the right. The left calcaneus measured 41.74 mm wide and it 83.75 mm in length.

Based on this analysis Hogg was most likely a young adult male 20 to 35 years old, when he was killed. He was approximately five foot five inches tall and had relatively good teeth. They exhibited little wear and only a few pin point caries. Since the overall conclusion is that he was a young man, it is suggested he engaged in heavy lifting as part of his early work regiment. A work regiment that lead to the formation of elevated rings and Smorl's whorls on his back vertebrae. The preservation of his remains is interesting in that little of his head is in tact with the exception of his teeth.

SUMMARY

The excavations of the four Mexican War and one Civil War veteran at the State Monument can provided archaeologists with some important insights into how to analyze cemetery remains. In a time period when there is an emphasis on high tech analysis it is evident that simple skeletal measurements can provide a great deal of information about peoples lives. The weathering and decomposition of the recovered remains suggest that sophisticated techniques, such as DNA analysis, would not have likely been successful.

Yet using metrics and nonmetric analysis some interesting and important discoveries were made.

All individuals (with the exception of Gilmore whose remains were extremely fragmentary) were sexed as male as expected. Ages were calculated for all the individuals. Gilmore despite being very fragmentary, was interesting because he was the oldest of the veterans dying in 1880 at the age of 55. However, his teeth were more similar in their wear patterns to a young adult. His position in society both as a State Representative and a Senator may have provided him access to better quality foods and healthier environments than those of a comparable age from this time period.

The remaining burials concerning age also were interesting. Thoreau's dentition with the nonerupted third molar suggests an age less than 18 years of age, as does the analysis of the auricular surface of his pelvis. This combined with the stunting of his arm length probably due to rickets makes him seem comparable in stature to that of a teenage boy!

Calculation of Thoreau's stature puts him at best at five foot two inches tall. Considering the curvature of the bones from malnutrition and disease a possible scenario is suggested. The first is that Thoreau had some bouts of disease and malnutrition over the course of his youth. Additionally he worked extensively with his hands and had arthritis in them. He also did heavy back breaking labor as indicated by the markings on his vertebrae. These conditions may have made enlisting more attractive to him, perhaps such that he even falsified his age to enlist. Yves J. Thoreau was killed at the Battle of Buena Vista in 1847. He was left/buried on the battlefield until his remains could be recovered.

Green like Thoreau showed signs of malnutrition and curvature of the forearms and lower limbs, again he also exhibited stunted growth and short stature. The metrics and non-metrics for Green are a bit of a conundrum. He exhibits characteristics observed in multiple populations but the characters overlap between groups so a clear assessment of biological affinity or heritage can not be made. He possesses some characteristics that are similar to Native American populations, which are observed in both North and South America. He clearly has some European and African characteristics as well.

Edwards was aged by a fragment of his pelvis as a young adult 25-29 years of age. No firm date of birth has been located for this individual although it was suggested he was in his early twenties. This is consistent with our findings.

Hogg is a bit of a mystery skeletally. His pelvis is heavily weathered such that it makes him appear to have been older (50 to 59) than he was when he died. His ribs, which were a little more protected from weathering, indicate a younger age perhaps a young adult (20 to 35). Hogg's actual age at death was 34. A veteran of the Civil War, he died of typhoid fever near Vicksburg, Mississippi. Some disease processes of a long enough duration can effect the form of bone, typhoid is not one of them, so the disfigurement of the pelvic joint combined with weathering is still of interest. Perhaps

other diseases contributed to Hogg's eventual demise. Like Thoreau, Hogg also did heavy back breaking labor as indicated by the markings on his vertebrae.

Lastly the dentition gave additional insight to this population. The hypoplasias on Thoreau suggest he had a number of illnesses or bouts of malnutrition as a young child. The fact the hypoplasias continue on his premolars and molars suggest long-term illness or malnutrition. This in combination with the other signs of ill health such as curvature of the bones and stunted growth suggest that Thoreau led a difficult life. A similar story can be told for Green. Though his skeletal remains exhibit substantially fewer hypoplasias, his remains do exhibit curvature of the limbs typical of vitamin D deficiency (rickets). Edwards had an unusual bite and probably favored his right side. Hogg's dentition was damaged and was represented by crowns. They were generally healthy with little wear and no observable hypoplasias. Gilmore also exhibited good dental health and as previously mentioned his teeth exhibited wear patterns typical of that of a young adult. The Carbelli's cusp on his teeth suggested he had European ancestry.

In conclusion a good deal of insight to the health and well being of the people from this time period was recovered. The age and sex for the most part were as expected for this group of individuals. The biological affinity or heritage of the individuals was a little more interesting leaving some unresolved questions as to the ethnic origin of Green. Some questions as to differential preservation based on coffin type and injury were addressed. The wooden coffins clearly did not preserve the bony material as well as the metal coffins but all of the individuals were affected by coffin collapse, and water damage. No clear pattern of war injury was determined for any of the veterans.

CHIPPED STONE

By
Eric Schlarb

A total of 179 chipped stone artifacts was recovered during this project. The chipped stone assemblage consists of flakes and flake fragments (n=172), projectile points (n=1), biface fragments (n=3), cores (n=2), and an edge modified, retouched flake (n=1). This section presents a description of the prehistoric materials recovered from the State Monument.

ANALYTICAL METHODS

Current approaches to the analysis of lithic artifacts include a study of the step-by-step procedures utilized by prehistoric knappers to make tools. The term used to describe this process is referred to as *chaine operatoire* or reduction strategy, and this process, as outlined by Grace (1997), is discussed below.

The production of any class of stone tools involves a process that begins with the selection of a suitable raw material. The basic requirements of any raw material to be used to make flaked stone artifacts include the following: 1) it can be easily worked into a describable shape; and 2) sharp, durable edges can be produced as a result of flaking.

Once an adequate source is located and a raw material is selected, the process of tool manufacture begins. Two different strategies can be utilized. One involves the reduction of a material block directly into a tool form, like a biface, or the production of a core. The second involves the preparation of a block of raw material so that flakes or blanks of a suitable shape and size can be detached. These blanks are then flaked by percussion or pressure flaking into a variety of tool types, including scrapers, bifacial knives, and projectile points.

Experimental work has shown that the former manufacturing strategy, involving a raw material block, begins with the detachment of flakes with cortical or natural surfaces. This is accomplished by direct percussion, usually involving a hard hammer (stone) that more effectively transmits the force of the blow through the outer surface. Having removed a series of flakes and thus created suitable striking platforms, the knapper begins the thinning and shaping stage. The majority of the knapping is conducted with a soft hammer (antler billet). The pieces detached tend to be invasive, extending into the mid-section of the biface. A later stage of thinning may follow, which consists of further platform preparation and the detachment of invasive flakes with progressively straighter profiles in order to obtain a flattened cross-section. By the end of this stage, the biface has achieved a lenticular or bi-convex cross-section. Finally, the tool's edge is prepared by a combination of fine pressure work and pressure flaking if

desired. It should be noted that flakes derived from biface reduction are sometimes selected for tool manufacture.

The second type of manufacturing trajectory, utilizing a flake or blank, begins with core reduction and the manufacture of a suitable flake blank. The advantages of employing a flake blank for biface reduction include the following: 1) flakes are generally light-weight and can be more easily transported in large numbers than blocks of material; and 2) producing flakes to be used for later biface reduction allows the knapper to assess the quality of the material, avoiding transport of poorer-grade chert.

The initial series of flakes detached from the flake blank may or may not bear cortex. However, they will display portions of the original dorsal or ventral surfaces of the flake from which they were struck. It should be noted that primary reduction flakes from this manufacturing sequence could be entirely noncortical. Therefore, the presence of cortex alone to define initial reduction is of limited value. Biface reduction on a flake involves the preparation of the edges of the piece in order to create platforms for the thinning and shaping stages that follow. In most other respects, the reduction stages are similar to those described above, except that a flake blank often needs additional thinning at the proximal or bulbar end of the piece to reduce the pronounced swelling and achieve a thinned final product.

FORMAL CHIPPED STONE TOOLS

The identification of formal and informal tools is useful in addressing questions involving the trajectory of reduction and the general activities undertaken by the prehistoric occupants of a site(s). Formal tools are defined as implements with a standard morphology manufactured for a specific task. A single formal chipped stone tool was recovered during these investigations

Raddatz Side Notched (n=1)

A single Raddatz Side Notched projectile point manufactured from Grier chert was recovered during this project (Figure 36). The complete (resharpened) specimen measures 53.7 mm long, 23.1 mm wide, and 6.3 mm thick. It has a mean notch depth of 4.1 mm and a mean notch width of 4.2 mm. The cross-section is biconvex. The haft element has rounded basal ears and a straight basal edge, which shows damage. The basal edge has been well-ground. Bifacial blade resharpening has created a slight bevel along both lateral margins, which are straight-sided. A rare trait for this point type (Justice 1987:67). Raddatz Side Notched points are diagnostic of the Middle Archaic (6000-3000 B.C.) subperiod (Justice 1987:68).

Figure 36. Raddatz Side Notched Point.

INFORMAL CHIPPED STONE TOOLS

Informal chipped stone tools are those artifacts that were not necessarily manufactured for a specific task but show evidence of utilization (either intentional retouch for use or modification resulting from use). Informal tool represent 0.6 percent of the flaked stone assemblage recovered from the State Monument. The only informal tool recovered was an edge-modified retouched flake (n=1).

Retouched Flake (n=1)

A single edge-modified or (retouched) flake manufactured from Brannon chert was recovered from the State Monument. The variability in the shape of these types of flakes and the relatively simple level of modification strongly suggests these were informal tools. This tool was probably expediently produced and used on an as-needed basis and then discarded.

The possible use of retouched flakes may be suggested by Wilmsen's (1968) examination of the measurement of edge angles as an indicator of tool function. He conducted experiments on edges with different angles. His results indicated that edges with angles between 35 and 45 degrees would be most effective at cutting soft material and butchering. Edges with angles between 50 and 75 degrees would be most effective at cutting, scraping, or shaping hard materials, such as bone or wood.

The retouched flake recovered from the State Monument has an edge angle of 72 degrees, suggesting it was utilized for cutting soft plant or animal materials, or butchering.

OTHER CHIPPED STONE

Cores (n=2)

Two cores produced from thermally altered Brannon chert were recovered from the State Monument. Both specimens are bipolar cores. Bipolar cores have had flakes detached by hard-hammer percussion on an anvil: the core is placed on the anvil and struck on the top with a hammerstone (Crabtree 1972). Both cores exhibit areas of crushing and battering, with flake scars running between these areas.

Biface Fragments (n=3)

Two late stage biface fragments were recovered during this project. These specimens were manufactured from Grier (n=1) and Tyrone (n=1) cherts. Late stage bifaces are essentially finished, well-thinned, and symmetrical in outline and cross-section. The profile of both specimens are well-defined. The remaining early stage biface fragment was produced from an indeterminate chert. Although flakes have been removed from both sides, the specimen is thick and has retained cortex on both sides.

DEBITAGE

The French term *debitage* has two related meanings: 1) it refers to the act of intentionally flaking a block of raw material to obtain its products, and 2) it refers to the products themselves (Grace 1989, 1993). Commonly, the term *debitage* is used by prehistorians to describe flakes that have not been modified by secondary retouch and made into tools. For the purpose of this analysis, which is based on the research of (Grace 1989, 1993), each type of debitage has been assigned to a specific class. These classes are as follows.

1) Initial reduction flakes (Initial): produced from hard hammer percussion; are typically thick; display cortex on all or part of their dorsal surfaces; and have large plain or simply faceted butts (striking platforms).

2) Unspecified reduction sequence flakes (Unsp.): applies to those pieces to which a specific reduction sequence cannot be assigned. With these pieces, it is impossible to tell whether they have been detached by simple core reduction or biface manufacture. For example, cortical flakes initially removed from a block of material can appear similar in both core and biface reduction strategies.

3) Biface initial reduction flakes (Bif/Initial): produced from hard or soft hammer percussion; are typically thick; display cortex on part of their dorsal surfaces; and have large plain or simply faceted butts (striking platforms). These flakes display more dorsal scars than initial reduction flakes.

4) Biface thinning and shaping flakes (BTS): result from shaping the biface while its thickness is reduced; generally lack cortex; are relatively thin; and have narrow, faceted butts, multidirectional dorsal scars, and curved profiles. Bifacial thinning flakes are typically produced by percussion flaking.

5) Biface finishing or trimming flakes (BFT): produced during the preparation of the edge of the tool. These flakes are similar in some respects to thinning flakes, but are generally smaller and thinner and can be indistinguishable from tiny flakes resulting from other processes, such as platform preparation. Biface finishing flakes may be detached by either percussion or pressure flaking.

6) Chips: describes flakes (< 1cm in length) that are detached during several different types of manufacturing trajectories. First, they can result from the preparation of a core or biface edge by abrasion, a procedure that strengthens the platform prior to the blow of the hammer. Second, tiny flakes of this type also are removed during the manufacture of tools like endscrapers.

7) Shatter: produced during the knapping process and through natural agents. Naturally occurring shatter is usually the result of thermal action shattering a block of chert. During biface reduction, shatter results from an attempt to flake a piece of chert with internal flaws (fossils) and fracture lines. For the purpose of this analysis, shatter is defined as a piece of chert that shows no evidence of being struck by a human (i.e., bulb of percussion and faceted butt [striking platform]), but may nonetheless be a waste product from a knapping episode

8) Janus Flakes: produced during the initial reduction of a flake blank (Tixier and Roche 1980). The removal of a flake from the ventral surface of a larger flake results in a flake the dorsal surface of which is completely or partially composed of the ventral surface of the larger flake.

DISCUSSION

A small sample of debitage (n=172) (Table 7) was recovered during this project. The sample is comprised mostly of unspecified reduction sequence flakes (n=80; 46.5 percent), followed by shatter (n=50; 29.0 percent) (Table 7). Together, they make up nearly 76 percent of the debitage assemblage. The presence of initial reduction flakes (n=12; 7.0 percent) (Table 7) indicates that raw lithic material was transported to the site and utilized. The very low frequency of biface initial reduction flakes, biface thinning and shaping flakes, and biface finishing or trimming flakes suggests that some form of biface production or tool maintenance took place at this locale. Further, because these specimens were recovered from varied, as well as extremely disturbed contexts, it is difficult to assign a temporal or cultural affiliation to this assemblage.

Table 7. Flake Types.

Flake Type	Frequency	Percent
Initial Reduction Flake	12	7.0
Unspecified Reduction Sequence Flake	80	46.5
Biface Initial Reduction Flake	11	6.4
Biface Thinning and Shaping Flake	8	4.7
Biface Finishing or Trimming Flake	6	3.5
Chips	5	2.9
Shatter	50	29.0
Total	172	100.0

LITHIC RAW MATERIAL

Raw material identification was conducted on all of the flaked stone assemblage recovered during this project. Raw material was identified by examining the physical properties of an artifact (i.e., color, luster, fracture, hardness, inclusions, and texture).

Chert types also were identified based on personal experience and by using the comparative chert collection curated at the William S. Webb Museum of Anthropology. A 10X hand lens and on occasion higher levels of magnification 30X microscope was used to identify inclusions, and to evaluate texture and structure.

Cortex was described as being present or absent in residual (block) or cobble form. The presence of residual or block cortex denotes lithic procurement from primary sources or outcrops, while cobble cortex indicates procurement from secondary sources (i.e., stream gravel bars). Generally, residual cortex is rather coarse, while cobble cortex is smooth and often polished. It was noted that both residual and cobble cortex was observed on specimens recovered during this project. This strongly suggests that the chert used at this locale was procured from primary geologic sources, as well as secondary sources, such as the nearby Kentucky River.

Cortex is absent on 88 percent of the debitage assemblage; however, 14 flakes retain block cortex and eight retain cobble cortex. Block cortex identified on flakes manufactured from Brannon, Grier, and Tyrone cherts suggests that raw materials were procured from primary sources. A single flake of Ste. Genevieve chert and two flakes of indeterminate chert retains cobble cortex, suggesting that raw materials were procured at a secondary source, such as a nearby stream.

With regards to material type, Grier chert (40.2 percent), followed by Brannon chert (35.2 percent) were the most abundant material types identified within the chipped stone assemblage (Table 8). Ste. Genevieve (6.1 percent), Tyrone (9.5 percent), and 16

pieces of indeterminate chert (9.0 percent) also was present within the chipped stone assemblage (Table 8).

Table 8. Lithic Raw Material Types.

Material Type	Frequency	Percent
Brannon	63	35.2
Grier	72	40.2
Ste. Genevieve	11	6.1
Tyrone	17	9.5
Indeterminate	16	9.0
Totals	179	100.0

Brannon and Grier Cherts

Local chert sources in the project area are abundant and belong primarily to the Middle Ordovician Lexington Limestone Series. Submembers of the Lexington Limestone Series include Brannon and Grier limestones (Pomeroy 1968). It should be noted that each of these submembers contains an associated chert. Brannon and Grier cherts are known to outcrop within the vicinity of the State Monument.

Brannon chert is grainy in appearance and ranges from white to gray in color. When thermally altered, hues of red and pink are formed and luster is improved. Thermal alteration of this material probably improved its knappability. Twenty-two percent of the Brannon chert specimens (n=63) recovered from the state mound were thermally altered.

Grier chert reovered from the State Monument occurs in block form and is grainy to semi-vitreous in appearance. Colors range from light to dark gray, and brownish gray to bluish gray. This material is hard and appears to have knapped well.

Ste. Genevieve Chert

Ste. Genevieve chert occurs in the Mississippian-age Newman Limestone formation. Ste. Genevieve chert is known to occur in nodular form eroding from its parent bedrock. The small sample of Ste. Genevieve chert (n=11) recovered from the State Mound ranges from gray, to dark greenish gray, to very dark gray. This material is vitreous, hard, and appears to have knapped well. Ste. Genevieve is considered a nonlocal chert and does not outcrop within close proximity of the State Monument. The Ste. Genevieve chert recovered from the State Mound was either transported to the site by its inhabitants, or procured secondarily from sources within or near the Kentucky River.

Tyrone Chert

Tyrone chert is derived from the Tyrone Limestone Formation, which occurs in the vicinity of the State Mound. Tyrone chert occurs in block form and is semi-vitreous. This material has a banded appearance. The colors range from white to different shades of light to very dark gray. Some of the specimens recovered from the State Mound are mostly white, with alternating bands of light gray. Other specimens are light gray, with alternating bands of darker gray. This material appears to have knapped well.

Indeterminate Chert

Several pieces of indeterminate chert was recovered from the State Monument. The majority of these specimens appear to have been manufactured from pebble chert, which could have been procured from secondary deposits, such as local streams or the nearby Kentucky River.

DISCUSSION

Locally available Grier and Brannon cherts were the most abundant lithic raw material type recovered from the State Monument. However smaller amounts of locally available Tyrone, and nonlocal Ste. Genevieve cherts also were recovered. Twenty-two percent of the Brannon chert specimens were thermally altered. Thermal alteration was utilized to improve the knappability of this particular material. Cortex data indicates that lithic raw material was procured from primary and secondary (stream) sources.

The recovery of a Raddatz Side Notched point manufactured from Grier chert, indicates a Middle Archaic occupation of the site. The presence of initial reduction and a single early stage biface suggests that lithic raw material was transported to the site for the production of stone tools. The presence of two bipolar cores indicates that flake stone tools also were manufactured at this locale. The single edge modified retouched flake produced from Brannon chert indicates that plant and/or animal materials were processed at this site, which may have served as a series of seasonal hunting camps.

BURIALS INVESTIGATED

C.W. GILMORE (BURIAL 23)

Archival

Cyrenius W. Gilmore was a Second Lieutenant in Company H, Fourth Regiment Kentucky Foot Volunteers during the Mexican-American War. He was born in Pulaski County, Kentucky and enrolled in the military on October 3, 1847 in Somerset. He served as a State Representative from Pulaski County from 1850 to 1851. Gilmore enrolled again into the military on March 29, 1862 as a Captain of Company D, Twelfth Kentucky Volunteer Infantry. He resigned a few months later on July 19, 1862 (Trowbridge 2004). In 1879 he returned to the state legislature as a Senator from the 17th District and served in this capacity until died in Frankfort on May 7, 1880 at age 56. Gilmore was buried on the State Mound on May 8, 1880 at the request of Governor Blackburn:

> Senator Gilmore, of Pulaski County, died at the Weitzel House to-day at 1 o'clock. He sent down stairs for his dinner and before the servant could take it up to him he had expired. Senator Gilmore was a republican, and represented the seventeenth Senatorial district, composed of the counties of Laurel, Pulaski, Whitley, Knox, Bell, and Jackson. He was a soldier in the Mexican War and was a brave, generous, warm-heart man. Gov. Blackburn proposes to have him buried in the Mexican department of the State Cemetery if agreeable to his relatives, who are expected here to-morrow morning (Courier-Journal 1880, as cited in Trowbridge 2004).

His burial expenses were paid by act of the Commonwealth of Kentucky (1882:264, a cited in Trowbridge 2004) two years later:

> Be it enacted by the General Assembly of the Commonwealth of Kentucky:
>
> 1. That the Auditor be, and he is hereby, directed to draw his warrant upon the Treasurer in favor of George A. Lewis for the sum of one hundred and thirty-two dollars and fifteen cents, the amount of expense incurred by him in burying the remains of the late Hon. C.W. Gilmore.
>
> 2. This act shall take effect from its passage.
>
> Approved January 19, 1882.

Grave Shaft

Senator Gilmore's grave was located 16 m south of the southern corner of the State Monument and 6 m south of the flagpole (Figure 37). It was identified beneath the west sidewalk and adjacent to the west name wall of World War II veterans. The grave shaft was identified at a depth of 30 cm below the ground surface and consisted of a mottled brown and yellow silt clay. The shaft was sub-rectangular in shape and measured 1.78 to 2.06 m long and .70 to .90 m wide. It was oriented in a north- south direction with the head to the north. Four prehistoric flakes were recovered from the grave shaft fill.

Casket Remains and Artifacts

The remains of a casket was identified 1.10 m below the ground surface. It was rectangular in shape and measured 1.65 m in length north-south and .70 m in width east-west (Figure 38). The casket was made of wood that was poorly preserved and delineated by a 2 cm thick dark organic stain. A large fragmented 65 x 35 cm plate glass viewing window was located over the northern third of the burial (Figure 38). The clear viewing glass fragments had an average thickness of 2.1 mm. Other than the viewing window, there was no evidence of the top of the casket, which most likely had collapsed onto the body. Two unidentified metal hardware pieces were located at the south (toe) end of the casket. Both cut (n=18) and wire (n=1) nails were recovered, indicating the transition that was being made locally from cut to wire nails in the 1880s.

Three white metal handles were located nearly equal distant along each long side of the casket (Figure 38). The handles, six in all, consisted mostly of a cast lead alloy and featured iron screw parts. All depicted the square, compass, and "G" symbols associated with the Masonic Order. The handles date to the late nineteenth-century based on material and style. White metals were used in mass produced coffin hardware after 1865. The styles are similar to those advertised in the 1880s (C. Rogers & Brothers 1882; Sargent & Co. 1883). Thumbscrews and escutcheons similar to those associated with Gilmore's coffin have been recovered from other late nineteenth-century sites (Braley and Moffat 1995:45, 68; Bromberg et al. 2000:344-347; Espenshade 2004:31-32; Garrow 1987:19-45; Garrow et al. 1985; Kogon and Mayer 1995:145-147; Shogren et al. 1989:176).

Based on Gilmore's obituary, the rites of the Masonic Order were observed at Gilmore's funeral. Gilmore was a Master Mason and his body was released to the Masons for burial as an excerpt from the *Tri-Weekly Commonwealth* (May 7, 1880) states: "Being a Mason in good standing, his brothers of the mystic tie have taken charge of his remains." Masons were known to have symbols engraved on metal, glass, and other personal items for burial. Symbols of the Masonic order include a protractor, a compass, pillars, a winding staircase, the letter "G" inside a triangle, a trowel, a picture of one eye, the sun, and a variety of other working tools (MacNulty 1991:44) similar to those observed on the handles associated with Gilmore's coffin.

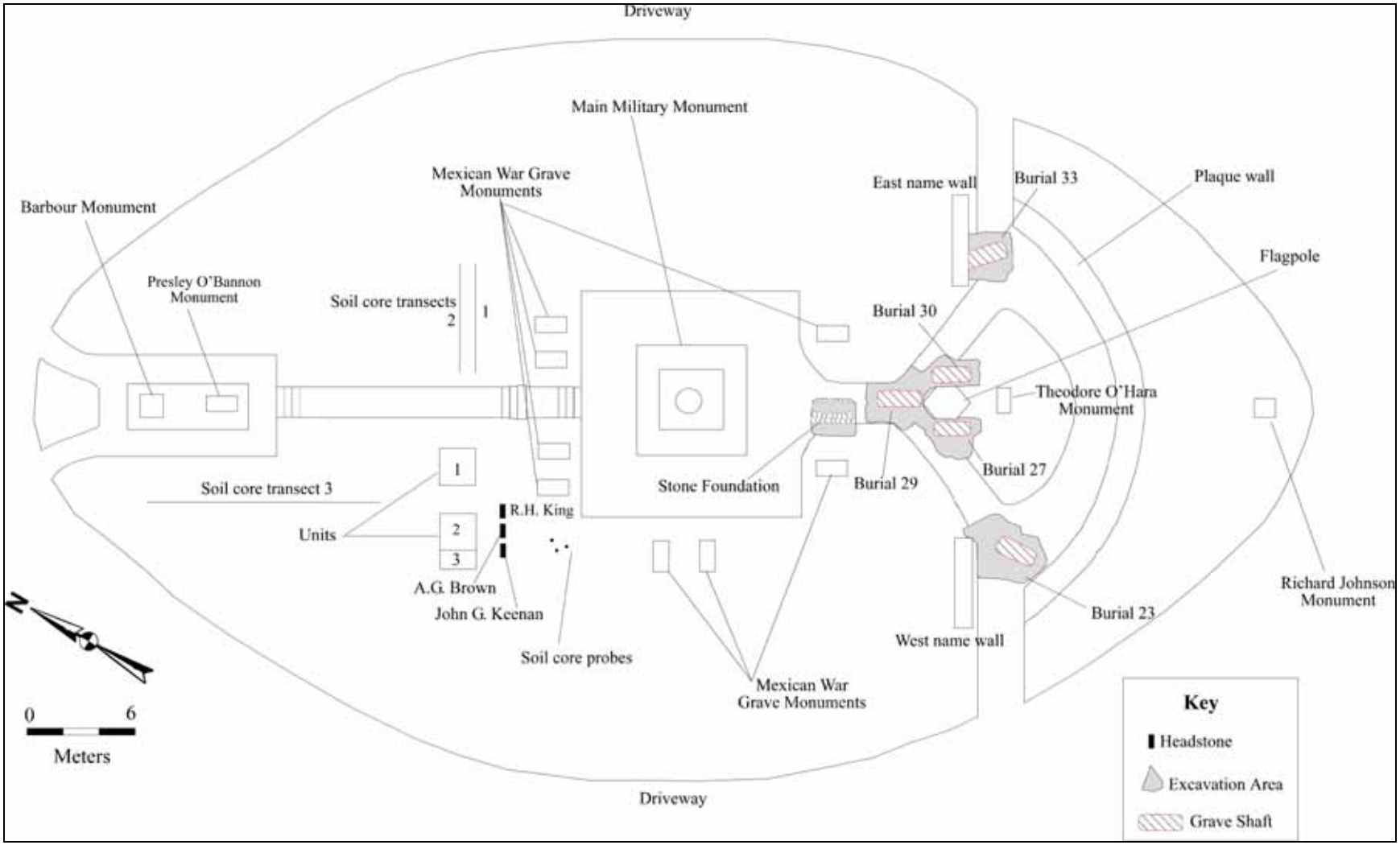

Figure 37. Location of Burials and Units.

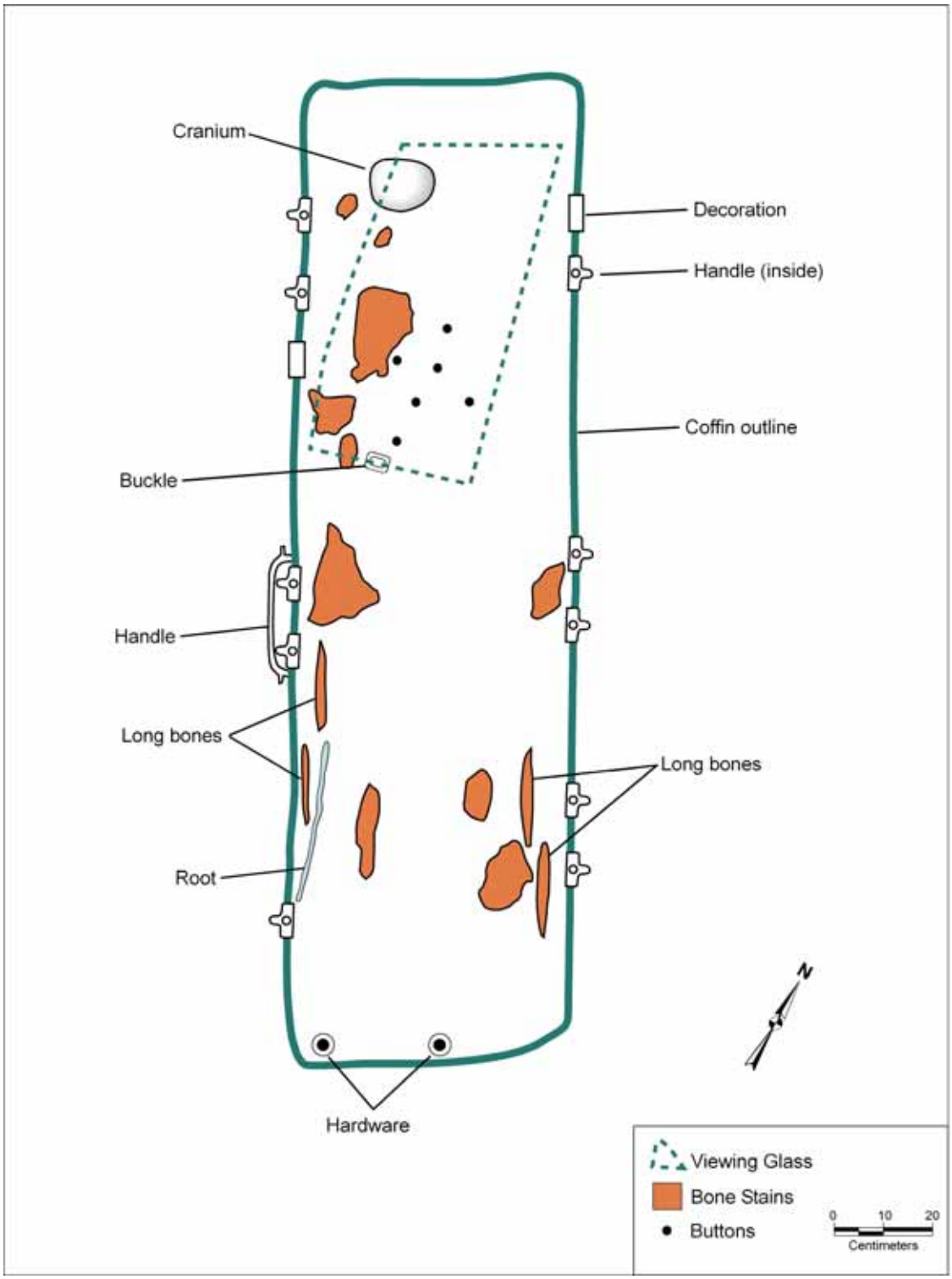

Figure 38. Planview of Gilmore and His Casket.

Human Remains

Though this burial was the most recent of the five excavated, with Gilmore having died in 1880, his skeletal remains were in the poorest state of preservation. Most of his remains had totally decomposed as had his wooden coffin, with may of the bones represented by white-colored stains within a 2-4 cm thick gray matrix that overlaid a mottled brown and yellow silty clay. Some of these stains resembled the rough outline of leg bones (Figure 38). The white stains and gray matrix, most likely represent the decomposed and compressed remains of the casket lid, skeletal remains, clothing, and casket bottom. The body was oriented with the head to the north. Sealed beneath the viewing window were fragments of fabric, buttons, a buckle, and pockets of the white particulate material.

Of the skeletal remains that were recovered Gilmore's cranium was highly fragmented and little information could be obtained from it. A few molars were recovered and each has at least one small cavity, but in general his teeth were in good shape and indicate that he did not experience a great deal of nutritional stress during his early years as evidenced by an absence of hypoplasias (growth lines that reflect nutritional stress between 0-4 years of age). The second molar appears to have a Carbelli's cusp, which is indicative of European ancestry. Though none of the molars have intact roots all appear to be from a young adult, which is somewhat surprising since Gilmore died in his 50s. Perhaps his position in society both as a State Representative and a Senator provided him access to better quality foods and healthier environments than those of a comparable age from this time period, which resulted in less wear of this teeth. The only other identifiable skeletal remains recovered were three foot fragments.

Personal Artifacts

Gilmore was buried wearing clothes, suggested by the presence of 16 buttons and an iron buckle. Three types of buttons were identified: 14 iron buttons with an eye on the back, one domed cast iron domed button, and a single gold plated brass shirt collar stud. Among the textiles recovered from Gilmore's grave were 12 fragments of a purple silk sash and 35 fragments of a finely woven blue wool dress frock coat.

The gold-gilded button and the dress frock coat indicates that Gilmore's wardrobe was of a good quality, and the purple silk sash, when considered with the lead alloy handles may reflect his affiliation with the Mason's. While the textile evidence recovered from Gilmore's burial was limited, it reinforced has status as an individual of some means and reflected his place in society at that time.

YVES J. THOREAU (BURIAL 27)

Archival

Yves J. Thoreau was a Private in Company I, Second Regiment of the Kentucky Foot Volunteers. There is some confusion surrounding this individuals name and when he enlisted in the military. In the TAG report, War with Mexico the only listing close to this name was Eva Thoreau (Trowbridge 2004). In Johnson's 1921 *History of the Frankfort Cemetery* the name of this individual is given as Thorean. He is reported to have enrolled in the military on June 6, 1846 at Mount Sterling, Montgomery County, Kentucky (Trowbridge 2004). But according to Johnson (1921:21) "Thorean was a Mexican who joined the U.S. forces and was killed the following day" (February 23, 1847) during the battle of Buena Vista, Mexico. Following Trowbridge (2004) we have referred to him as Yves J. Thoreau.

Shortly after the battle of Buena Vista Thoreau he was buried in Mexico. Several months later a delegation from Kentucky led by Captain George P. Jouett and Nelson Dudley recovered his remains and transported them to Kentucky where Thoreau was reinterred on the State Mound on September 16, 1847.

Grave Shaft

Mr. Thoreau's grave was located 5.8 m southeast of the southern corner of the State Monument, 0.8 m west of the Theodore O'Hara monument, and adjacent to the west side of the flagpole foundation (Figure 37). The grave was marked by the base of a footstone, which was found 60 cm southeast of the southeast end of the grave shaft just below the sod in the lawn. The grave shaft was situated underneath the west sidewalk and a large light fixture for the flagpole within the grass lawn that surrounds the flagpole. The grave shaft was identified 18 to 20 cm below the ground surface and consisted of a mottled brown and yellow silt clay. The shaft was rectangular in shape and measured 2.2 m in length and .83 m in width. It was oriented in a northwest to southeast direction.

Coffin Remains and Artifacts

The remains of a coffin were identified 1.33 m below the surface of the concrete foundation for the flagpole (Figure 39). It was hexagonal in shape and measured 80 cm in length, 40 to 45 cm in width, and 30 cm in height. The coffin was made of cast iron with a thin poplar veneer (Jack Rossen, personnel communication 2005). The coffin was was poorly preserved and delineated by a 1 cm thick dark organic stain and thousands of thin metal fragments. Some large fragments of poplar were found throughout the grave, with several being recovered from above Thoreau's legs.

Portions of the collapsed coffin lid were found over the body, but the lid was most intact over the upper torso. A small viewing port was present over the head and chest. Remnants of two thin iron straps that extended across the width of the coffin were identified. One strap, which was largely degraded by rust, was located 50 cm from the

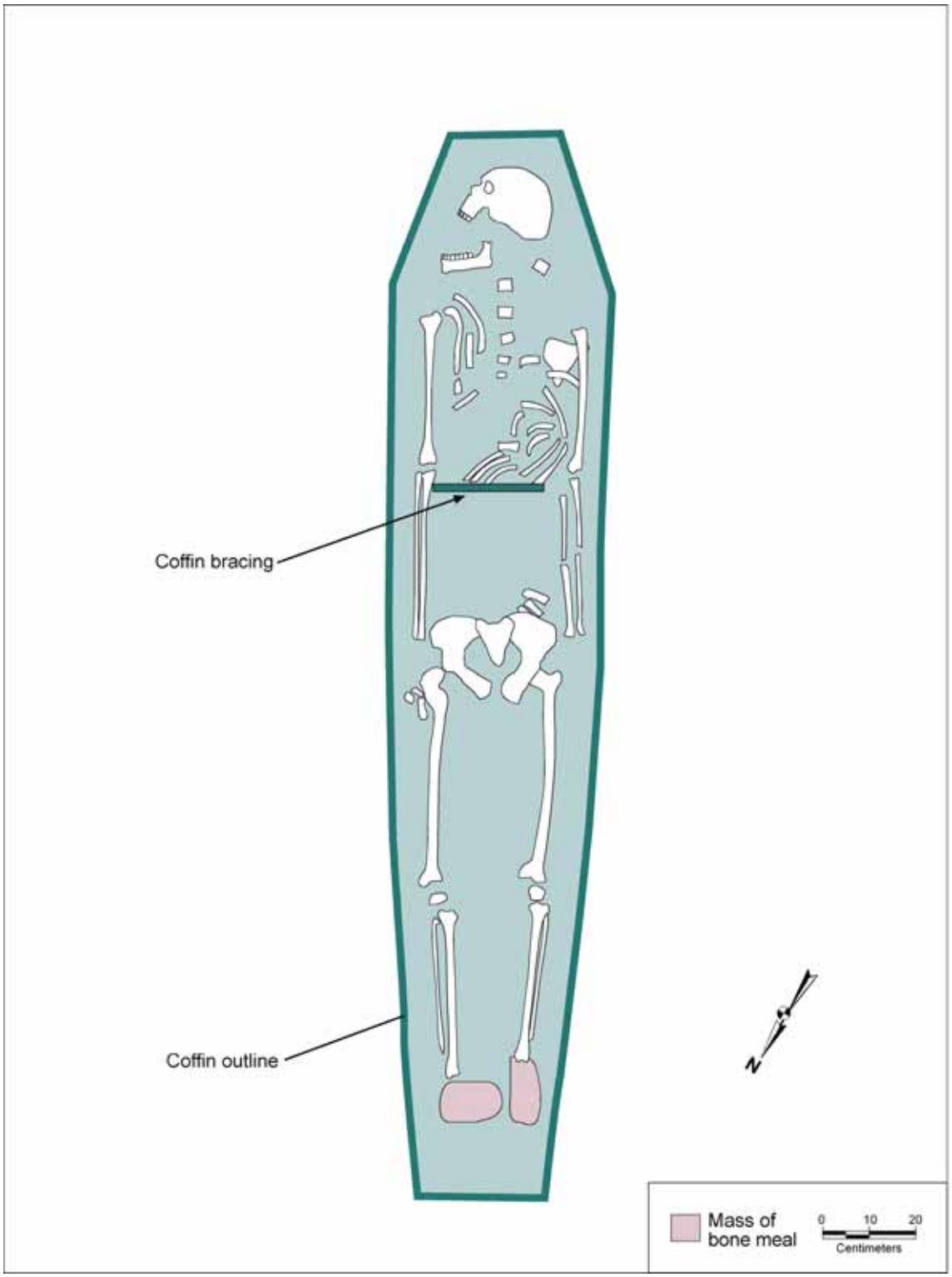

Figure 39. Plainview of Thoreau and His Coffin.

head of the coffin (Figure 39). The other strap was mostly intact and was located approximately 70 cm from the foot of the coffin. An iron hinge was associated with this strap. Screws (n=9) were found along both sides of the coffin. Some were still imbedded in fragments of wood. These common wood screws are not diagnostic.

Cut nails (n=71) dating from 1830-1880 were found at both ends and along the sides of the coffin. These nails would have been part of a simple outer wooden box that the metal coffin was placed into prior to burial.

Human Remains

Thoreau's skeletal remains were relatively well-preserved, especially in comparison to those of Gilmore, but some bones were in very poor condition. The majority of the long bones and cranium were fairly well-preserved and articulated. However, smaller bones such as those associated with feet as wells his ribs and vertebrae were represented by degraded masses of bone, small fragments, or were not preserved at all. The body was oriented with the head to the northwest and the feet pointing to the southeast. He had been laid on his back in the coffin with his arms to the side and head turned to the right. The soil matrix within the burial consisted of a mottled gray brown wet silty clay with quartzite pebbles. The coffin rested upon a yellow brown sandy clay.

Based on the analysis of the skeletal remains Thoreau appears to be a young male less than 18 years old who stood about five foot two inches. He like Green (see below) experience malnutrition and vitamin D deficiency (rickets) during the course of his life. His teeth show 17 hypoplasias, which are indicative of multiple bouts (12-16 months, 22-30 months, and 44-45 months of age) of disease or malnutrition when Thoreau was less than four years old. Rickets is indicated by short overly curved upper arms. He probably did heavy labor in which he used his hands extensively and had arthritis in them. His bones appear robust in weight but small in size. He also did heavy back breaking labor as indicated by the markings on his vertebrae. These conditions may have made enlisting attractive to him, perhaps such that he even falsified his age to enlist.

There are no clear markings on the recovered fragments that are indicative of trauma, which could provide information on how Thoreau died on the battlefield. While it is possible that some of the skeletal elements that were not recovered during the most recent excavation of his grave are indicative of battlefield injuries, it is equally probable that the missing or decomposed elements are indicative of postmortem activity, such as incomplete recovery of the remains during his disinterment and transport from Mexico to Frankfort or the differential decomposition of the skeletal remains after Thoreau was reinterred at the State Monument.

Personal Artifacts

The absence of any uniform buttons and buckles, suggests that Thoreau was not buried in his uniform and may have been wrapped in a blanket.

W.C. or T.W. GREEN (BURIAL 29)

Archival

There are no mid-nineteenth century military records for a W.C. Green, but there is a record of a T.W. Green, who is likely the person interred in Burial 29. T.W. Green was a Private in Company G, First Regiment Kentucky Mounted Volunteers. He enrolled in the military on June 9, 1846 at Louisville, Jefferson County, Kentucky. Green was assassinated at Saltillo, Mexico on March 2, 1847. Shortly thereafter he was buried in Mexico. Several months later a delegation from Kentucky led by Captain George P. Jouett and Nelson Dudley recovered his remains and transported them to Kentucky where Green was reinterred on the State Mound on July 20, 1847 (Trowbridge 2004).

Grave Shaft

Mr. Green's grave was located 8.5 m southeast of the southeast side of the state monument, 4 m northwest of the Theodore O'Hara monument, and adjacent to the northwest corner of the concrete foundation for the flagpole (Figure 37). It was initially unidentified through the use of ground penetrating radar. Ground truthing of the anomaly identified by ground penetrating radar documented that the entire grave shaft was situated underneath the sidewalk that extends from the flagpole to the state monument. The grave shaft was identified 20 cm below the sidewalk and it consisted of a mottled yellow/dark brown silt clay. It was rectangular in shape and measured 2.2 to 2.3 m in length and .95 to 1.0 m in width. The shaft was oriented in a northwest to southeast direction, with the head towards the northwest.

Coffin Remains and Artifacts

The remains of a coffin were identified 1.24 m below the surface of the sidewalk. It was oval in shape and measured 1.95 m in length, 58 cm in width, and 16 cm in height. The coffin was made of thin cast iron that was severely rusted. The lid was mostly intact, showing little of evidence of collapse. While efforts were made to remove the lid intact, it was too fragile to do so and subsequently broke into many fragments. Cut nails (n=48) dating from 1830-1880 were found at the head and foot of the coffin. These nails would have been part of a simple outer wooden box that the metal coffin was placed into prior to burial. An unidentified piece of metal coffin hardware and a metal hook were found towards the middle of the coffin. The sides and bottom of the coffin were made of the same thin iron as the lid.

Human Remains

Green's skeletal remains were fairly well-preserved, as the majority of the bones were identifiable and articulated (Figure 40). However, the area around the right knee was poorly preserved and the mandible was disarticulated. It was located near the top of

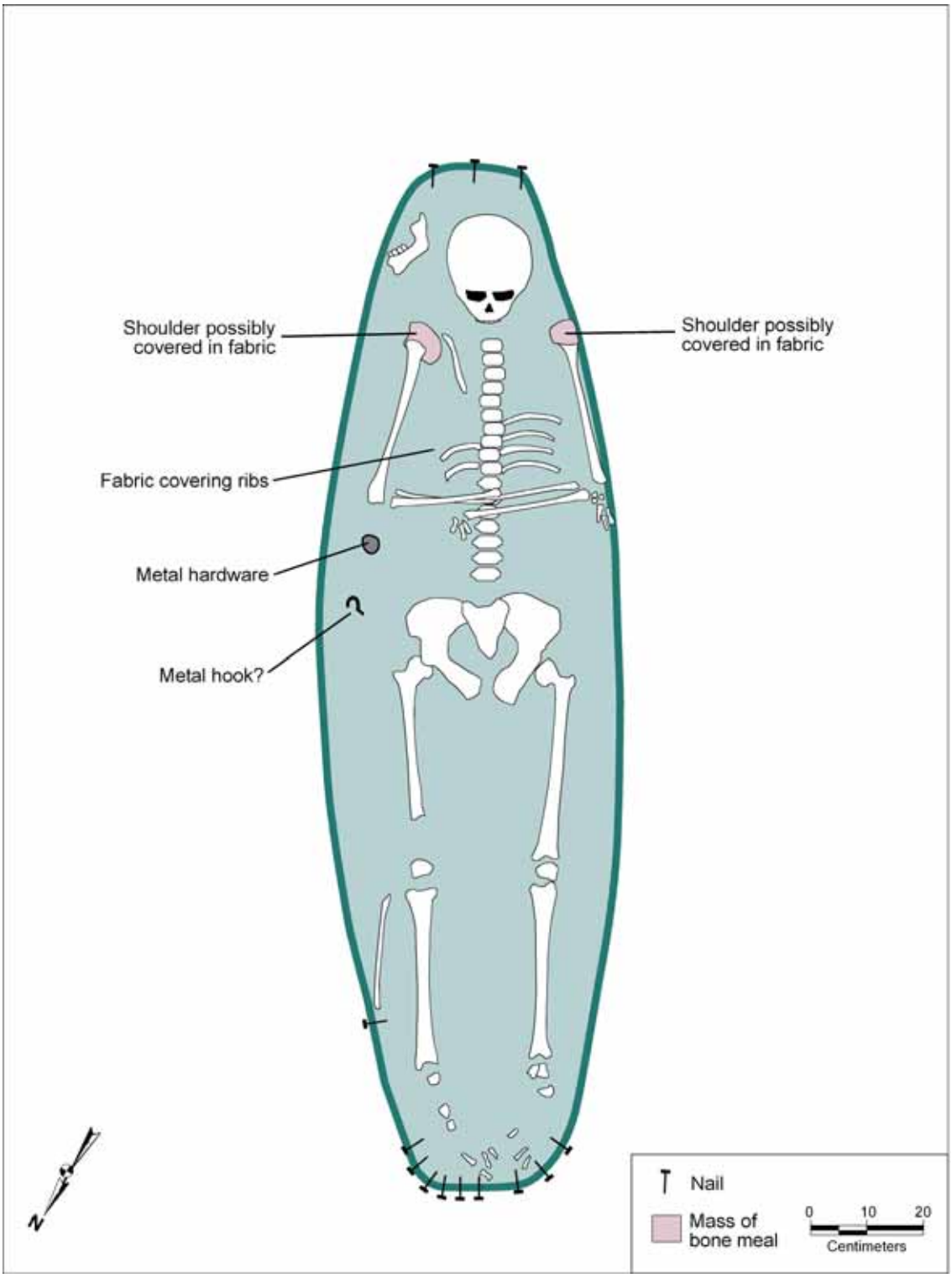

Figure 40. Plainview of Green and His Coffin.

the right side of the cranium in the corner of the coffin. It is possible that it shifted in transit. Unlike the other burials, which were oriented towards the north, Green's body was oriented with the head pointed towards the southeast. He had been laid out on his back with his arms folded across his chest. His feet were crossed left over right.

The soil matrix within the coffin consisted of a large amount of wood charcoal, which surrounded the majority of the body (Figures 41 and 42). The charcoal appeared to have originated from burned small sticks and twigs, all of which is white oak (Jack Rossen, personal communication 2005). This rather unique burial treatment, may have been intended to absorb odors during the transporting of his body. The only other reference to the use of charcoal in burial practices is that of powdered charcoal that was used for preservation by early embalmers. Robert Mayer (1996:440) states in his history of embalming that:

> [Arterial embalming was] impossible because of the nature of wounds or decomposition, other means of preparation of the body for transport were resorted to. In some cases the trunk was eviscerated then placed in a coffin completely imbedded in sawdust or similar material. In other cases, the body was coffined as mentioned without evisceration.

Based on the analysis of Green's skeletal remains he appears to have died before his twentieth birthday. He exhibits signs of long-term malnutrition or disease in both his dentition as evidenced by hypoplasias and rickets as reflected in the curvature of his arms and legs. This state of ill health is also exemplified by his stunted stature (five foot four inches) and short arm length.

Green also is of interest with respect to his biological affinity or heritage. He exhibits characteristic, such as short stature and malnutrition, that place him outside the normal range of variation observed in healthy Euro-American individuals. He also appears to have a broad face and chin similar to what is often associated with Native American groups. However, he does not exhibit winging or shoveled incisors, which would confirm Native American ancestry and he does have a metopic suture, which more often occurs in European populations than in Native American populations. Based on these observations it is quite likely that Green was a person of mixed ancestry possibly Native American and European.

Personal Artifacts

Artifacts found in association with Green, included buttons (n=20), fabric (n=112), and a *housewife* kit. Seven different types of buttons (n=20) were recovered: four-holed large iron capped buttons, large and small brass coin buttons, fabric covered brass coin buttons, a modified brass coin button that may have been used as an epaulette, a four-holed prosser button, and a four-holed bone button. Four-holed buttons date to the mid-nineteenth century and are thought to have replaced five-holed buttons. The porcelain prosser button dates to after 1840, which was when these types of buttons

Figure 41. Top of Green's Coffin Showing Wood Charcoal.

Figure 42. White Oak Charcoal and Top of Coffin.

began to be manufactured by machines. Many of the buttons were found in association with fabric.

The fabric was found in the area of the upper torso, especially in the vicinity of Green's shoulders and arms. The majority of the fragments were identified as Z-spun wool. Among the fragments recovered were coat edges, cloth with buttons still attached, and strap fragments typically located at the cuffs of military uniform jacket sleeves. Overall the fabrics found in association with Green appear to represent a coat of some kind. Since Green was killed shortly after the battle of Buena Vista it is quite possible that he was buried in his uniform. Analysis of the textile fragments also indicated that Green's uniform was handmade. Support for this suggestion commons from the lack of military buttons and the variety of buttons types attached to the coat. The original color of the fabric could not be discerned but uniforms of that time were blue. Green's uniform would have included a blue wool coat, a flannel shirt, cotton trousers, boots (suitable for horse-back riding), and a hat (Field 1997; Severa 1995).

A bundle of straight pins found in association with two buttons and a buckle may represent a sewing kit, affectionately termed a *housewife,* which were common during the Civil War (Babits 1993). Its association with Green indicates that use of these types of kits predates the Civil War.

HENRY EDWARDS (BURIAL 30)

Archival

Henry Edwards was a Corporal in Company I of the Second Regiment Kentucky Foot Volunteers. He enrolled in the military on June 6, 1846 at Mount Sterling, Montgomery County, Kentucky. He was appointed to the rank of Corporal in January of 1847 and was killed in the Battle of Buena Vista on February 1847. Shortly after the battle he was buried in Mexico. Several months later a delegation from Kentucky led by Captain George P. Jouett and Nelson Dudley recovered his remains and transported them to Kentucky where Edwards was reinterred on the State Mound on September 16, 1847 (Trowbridge 2004).

Grave Shaft

Mr. Edwards' grave was located 11.5 m southeast from the northeast corner of the state monument, 1.0 m north of the Theodore O'Hara monument, and adjacent to the northeast side of the concrete foundation for the flagpole. It was identified underneath the east sidewalk and a large light fixture for the flagpole within the grass lawn that surrounds the flagpole. The grave shaft was identified 25 to 35 cm below the ground surface and consisted of a mottled yellow and dark brown silty clay. It was rectangular in shape and measured 2.24 m in length and .86 m in width. The shaft was oriented in a northwest to southeast direction. Four prehistoric flakes were recovered from the grave shaft fill.

Coffin Remains and Artifacts

The remains of a coffin were identified 1.42 m below the ground surface. It was hexagonal in shape and measured 1.95 m in length, 25 to 46 cm in width, and 22 cm in height. The coffin was made of cast iron with a thin yellow pine veneer (Jack Rossen, personal communication 2005). The lid was intact over the lower portion of the body, but had collapsed in the middle and upper portions of the coffin. The sides of the coffin appeared to have consisted of metal with a wood veneer. Most of the wood was in poor condition and was delineated by dark staining.

Both screws (n=7) and cut nails (n=57) were found along the ends and sides of the coffin. While all of the screws would have been used to fasten the wood veneer to the top of the coffin, most of the nails would have been used in the construction of a simple wood box within which the cast iron coffin had been placed. Cut nails date from 1830 to 1880.

A wide metal strip in the shape of an "L" was found at the head of the coffin and fragments of two iron straps or bands were located over the feet and the lower torso, respectively. The straps may have been used to keep the yellow pine wood veneer in place. The strap at the feet was largely intact, while most of the strap at the lower torso had rusted away. An iron handle was found attached to the outside of the coffin along the lower right side. It represented the only handle recovered from this coffin. There was no evidence of a viewing window or opening on the coffin.

Human Remains

Edward's skeletal remains were fairly well-preserved, as the majority of the bones were identifiable and articulated (Figure 43). However, the cranium, mandible, and right arm were disarticulated. The cranium was highly fragmented and lying on the left side of body. The mandible was situated towards the upper right corner of the coffin. The right hand and lower arm were disarticulated lying near the head area. As with Green's body the dislocation of this bones may have occurred during the transporting of the body from Mexico to Kentucky.

Edward's body was oriented from the northwest to the southeast. He had been laid on his back with his the left arm laid across his pelvis and his right arm folded towards his head (Figure 43).

Based on the analysis of his skeletal remains Edwards appears to be an adult male greater than 20-26 years of old. The bones exhibited a good deal of weathering which made it difficult to analyze his remains. Many of his upper teeth were missing but the lower teeth were interesting in that the mandible was separated from the cranium and did not exhibit the staining of the upper dentition. This may indicate that the mandible had become separated from the rest of the skull during transport from Mexico to Frankfort. There is relatively little wear on Edward's teeth with the exception of the lower right first

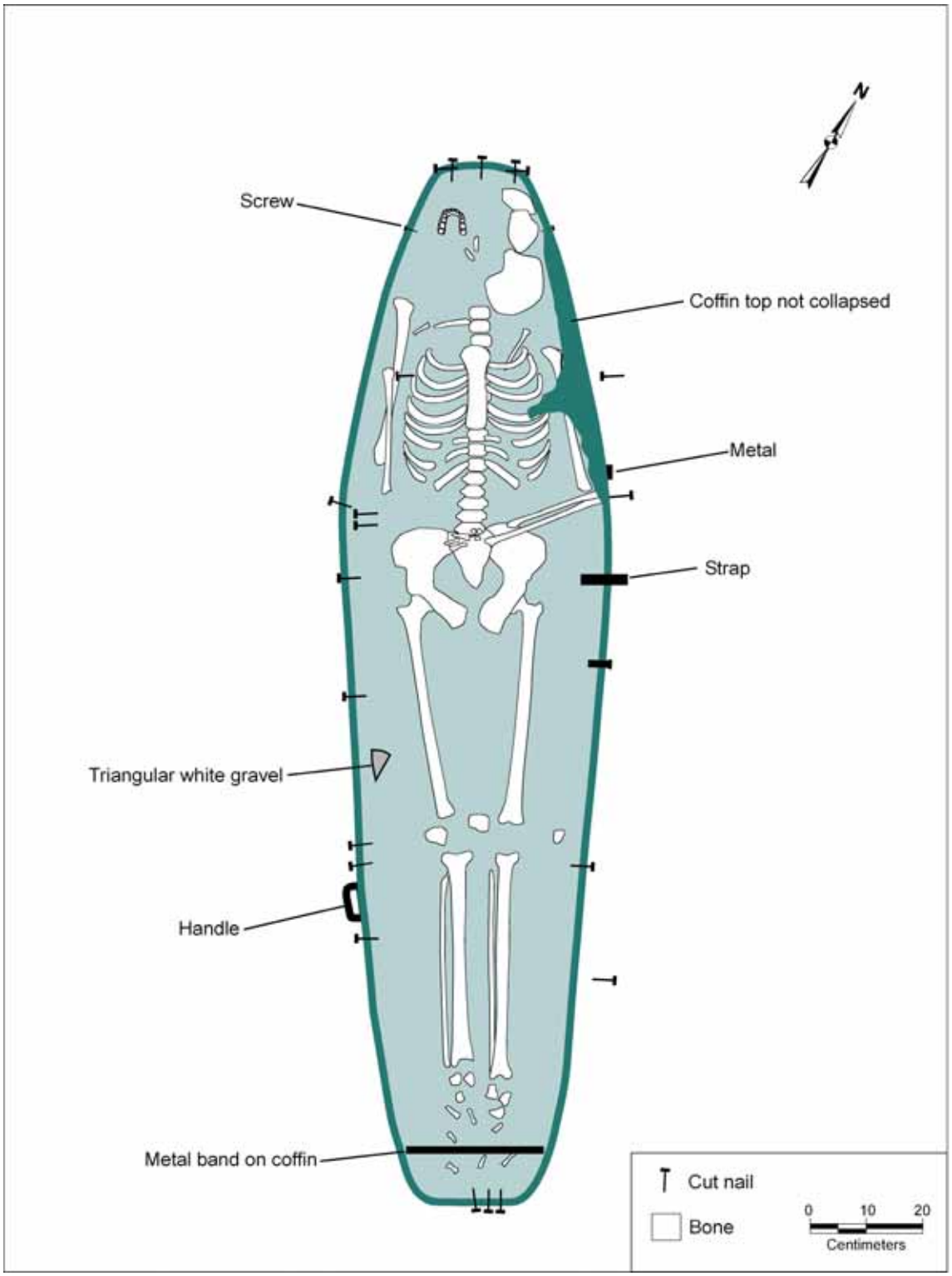

Figure 43. Plainview of Edwards and His Coffin.

molar. This pattern suggests Edwards may have had an uneven bite and favored this side of his mouth. Edwards's teeth were rather healthy with a few caries and no hypoplasias. An estimate of Edward's height could not be calculated.

Personal Artifacts

The only artifacts found in association with Edwards' burial were four-holed cast iron buttons (n=4). As with Thoreau's grave, the near absence of clothing related artifacts suggests that Edward's was not buried in his uniform and was probably interred wrapped in a blanket.

EDWARD F. HOGG (BURIAL 33)

Archival

Edward F. Hogg was a First Lieutenant in Company D of the Nineteenth Kentucky Volunteer Infantry of the Union Army and acting quartermaster of the 19th Regiment. He enrolled in the military on December 12, 1861 (Trowbridge 2004). He died of typhoid in Vicksburg on February 4, 1863, at the age of 24. His death announcement is as follows:

> We regret that it is our duty to announce the death of Lieutenant Ed. F. Hogg, acting Quarter-master of the 19th Regiment of Kentucky Volunteers, which occurred near Vicksburg on the 4th inst., of typhoid fever. Lieutenant Hogg was a native of Letcher County, and was just 24 years of age. Early in the commencement of the rebellion, he took a decided stand for the Union, and volunteered in the 19th Kentucky Regiment, under the command of Col. Wm. F. Landram. He was in the army of Cumberland Gap, and participated in its labor and dangers, and its successful retreat. He was a brave and efficient officer, and he sealed his devotion to his country with his life. His loss will be keenly felt by the Regiment. His remains were brought to our city by his brother, and interred in the Frankfort Cemetery, among Kentucky's sons who died in defense of the honor of their country. Peace to his ashes! (Commonwealth of Kentucky 1863:3, as cited in Trowbridge 2004).

Grave Shaft

Hogg's grave was located 9.2 m east of the east corner of the state monument and 5.4 m east of the flagpole (Figure 38). It was identified beneath the east sidewalk and adjacent to and partially underneath the east name wall of World War II veterans. The grave shaft was identified 68 cm below the ground surface and consisted of a mottled brown and yellow silt clay. The shaft was rectangular in shape and measured 2.18 m long and .75 to .85 m wide. It extended approximately 20-25 cm underneath the foundation of the east name wall. The grave shaft was oriented in a northwest to

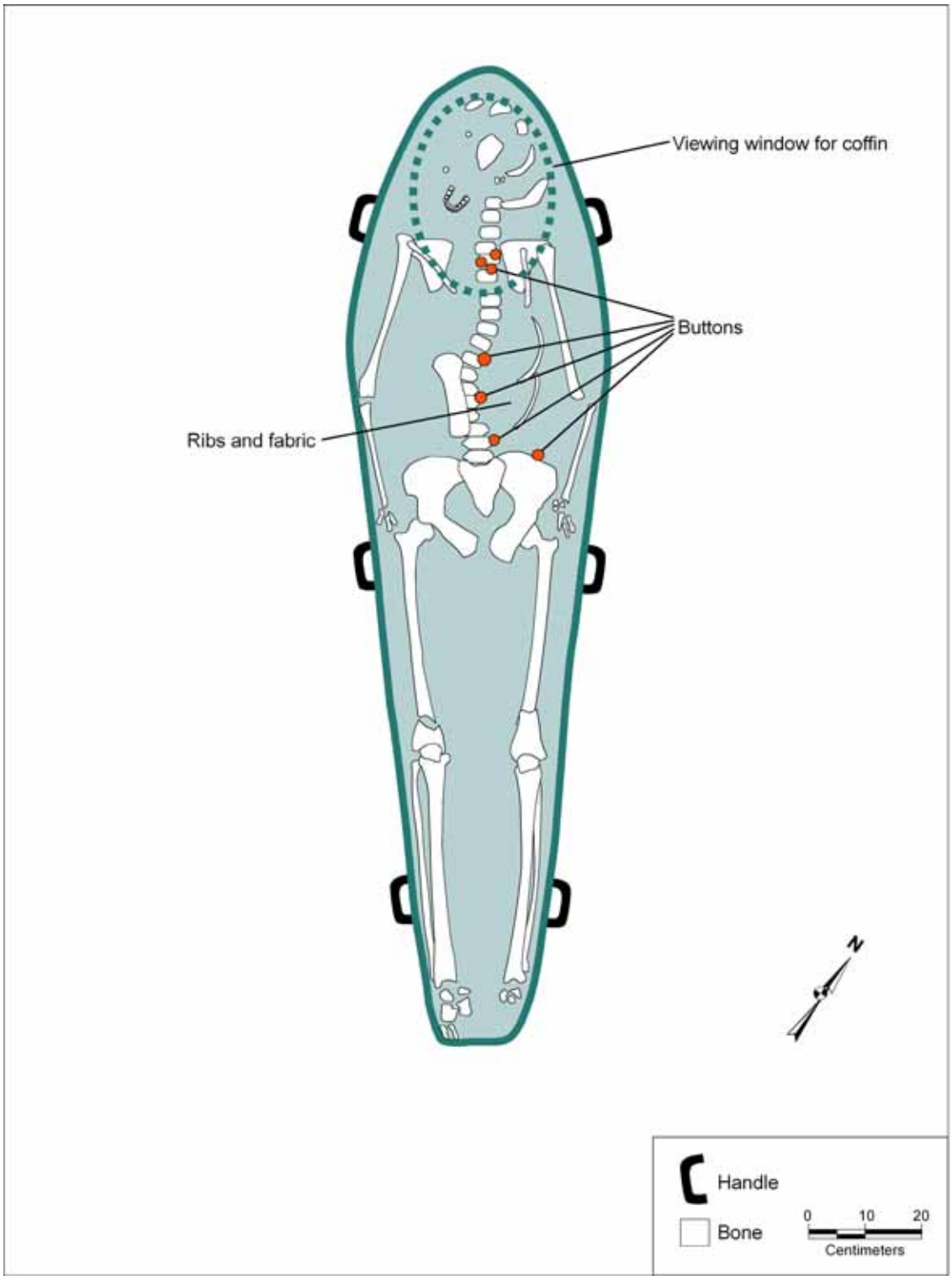

Figure 44. Planview of Hogg and His Coffin.

southeast direction, with the head towards the northwest. An electrical conduit made of gray PVC piping extended across the middle of the grave shaft. Two prehistoric flakes were recovered from the grave shaft fill.

Coffin Remains and Artifacts

The remains of a coffin were identified 1.03 m below the surface of the walkway. It had a rounded hexagonal shape and measured 1.80 m in length, 14 to 45 cm in width, and 32 cm in height. The coffin was made of severely rusted cast iron in three pieces, consisting of a lid and a two-part base, which were attached with tabs that may have been inserted into slots. A set of three trapezoidal iron handles spaced equal distant were present along each side of the coffin. Nails also were present on the exterior of the coffin along each side with most being found near the head of the coffin. Cut nails date from 1830 to 1880. The nails measured between 7-11d in pennyweight. The rectangular shape of the coffin and presence of medium construction nails suggests the metal coffin was placed inside a simple wooden box prior to burial. The lid of the coffin was largely intact with only minor collapse occurring above Hogg's chest. An oval shaped metal frame for a viewing window was located over the head and chest. However, the glass for the window was broken and fragments were found inside the coffin.

Due to the difficulties presented by the active electrical conduit over the grave shaft, extremely wet conditions, and the rather good intact condition of the coffin, the coffin and human remains were removed from the grave shaft together and transported to the Laboratory for Archaeological Research at the University of Kentucky, where the remains were carefully excavated.

Human Remains and Personal Artifacts

The preservation of Hogg's skeletal remains ranged from good to poor, with a large number of bones identified and articulated (Figure 44). However, the cranium was severely fragmented and the mandible was disarticulated. The body was oriented with the head pointed towards the northwest. He had been laid out on his back with his arms along the sides and hands lying on his pelvis. The legs were extended and the head may have been turned to the right.

Based on the analysis of his skeletal remains Hogg was most likely a young adult male 20 to 35 years old, when he was killed. He stood approximately five feet five inches tall and had relatively good teeth. They exhibited little wear and only a few caries. Since the overall conclusion is that he was a young man, it is suggested he engaged in heavy lifting as part of his early work regiment. A work regiment that lead to the formation of elevated rings and Smorl's whorls on his back vertebrae.

The soil matrix within the coffin consisted of a mottled dark brown and orange silty clay loam that appears to have washed in through the broken viewing window. Fabric and military buttons were found along the front middle section of the body. The fabric consisted of blue woolen cloth and undyed cotton cloth. The woolen cloth was

probably from a military coat, while the cotton cloth may have been from a flannel shirt. No distinguishable fragments of his trousers were recovered. The presence of lock stitch sewn edges on the textiles associated with Hogg is of particular note. This type of stitch only became widely available when Isaac Singer made the sewing machine commercially available in the mid-1850s (Severa 1995). The sewing machine allowed for the production of garments on a much larger and quicker scale. As uniforms were still often produced locally at this time, the sewing machine allowed the production to keep pace with the growing enlistment during the Civil War (Severa 1995).

Buttons (n=18) recovered from Hogg's burial further attest to the increased formality of military uniforms. Two types of military buttons were recovered: a cast brass spread eagle button (Type 9) and eight gilt infantry branch buttons (Type 10), which also feature a spread eagle. Hogg's status as an officer is evident from the infantry buttons that were issued only to officers after 1854. Iron coin buttons (Types 1-4), both large and small, also were found.

WILLIAM T. WILLIS (BURIAL 52)

Archival

William T. Willis was a Captain in Company F of the 2nd Regiment Kentucky Foot Volunteers. He enrolled in the military on May 21, 1846 at Nicholasville, Jessamine County, Kentucky. Captain Willis was born in Culpeper County, Virginia on June 10, 1794. He was married to Hetty E. Howe, the daughter of a Presbyterian minister and educated at a Presbyterian seminary. During the 1830s, he represented Green County, Kentucky in the State House and Green and Hart County, Kentucky in the State Senate. Willis also was a merchant, shipping tobacco to New Orleans, and practiced law successfully for several years in Green and surrounding counties. He moved to Harrodsburg in 1840 and several years later to Jessamine County. Although he was fifty years old at the break of the Mexican War, Captain Willis was noted for his bravery and patriotism. He was killed at the battle of Buena Vista, Mexico on February 23, 1847. Shortly after the battle he was buried in Mexico. Several months later a delegation from Kentucky led by Captain George P. Jouett and Nelson Dudley recovered his remains and transported them to Kentucky where Willis was reinterred on the State Mound on July 20, 1847 (Trowbridge 2004).

His service at the battle is described below:

> …Col. Henry Clay Jr., was wounded, and Captain Willis, with the high courage and noble generosity which marked his whole career, was urging his men to take the Lieutenant-Colonel from the field, when the Mexican Lancers came rapidly down and killed both Colonel Clay and Captain Willis…(Young 1898:234-237).

By resolution of the General Assembly of the Commonwealth of Kentucky, a grave marker was provided for Willis' grave and his comrades (1860:184):

> That the Governor of this State shall cause to be placed suitable head and foot stones to the graves of Col. W.R. McKee, Lieut. Col. H. Clay, Capt. W.T. Willis, and E. M. Vaughn, adjutant of the first regiment of Kentucky cavalry, who fell in defense of their country's flag at the battle of Buena Vista, and whose remains are in the State Cemetery; and that the Auditor of Public Accounts draw his warrant on the treasury in favor of the person employed by the Governor to put up said head and foot stones, when the Governor shall certify to the Auditor the amount due such person.

Description

The grave marker for Willis is located northeast of the sidewalk and adjacent to the pavement around the monument. According to the site plan for the 1988 sidewalk construction, the grave marker associated with Willis's grave was moved to its current location prior to the sidewalk's construction. To determine if this was the case ground penetrating radar was used to examine the sidewalk leading to the State Monument. Examination of the maps generated by the ground penetrating radar led to the identification of an anomaly that could represent a grave shaft (Figure 8: northern anomaly). Subsequent investigation of this anomaly, however, failed to locate a grave shaft or any other evidence of a grave, but did result in the documentation of two sides of a dry laid stone foundation. The foundation was found at a depth of 45 cm below the surface of the sidewalk. Each side had a width of 45 cm and consisted of two courses of stone. They were set into the ground 65 cm apart and extended the entire 2 m length of the excavated area. It is possible that these foundation walls were constructed to support Willis's large grave marker. If this was the case then it is possible that Willis's remains were reinterred in another location on the State Mound and his grave marker subsequently relocated.

VETERANS OF THE BATTLE OF RIVER RAISIN

According to several accounts, the remains of Kentucky soldiers killed at the Battle of River Raisin, Michigan during the War of 1812, were returned to Kentucky sometime between 1848 and 1870 (Trowbridge 2004). The whereabouts of these remains are currently unknown, but they may have been buried in one of the state-owned lots in the Frankfort Cemetery, which includes the State Mound. Currently there are no known markers on the mound or elsewhere in the Frankfort Cemetery for these veterans.

Following an examination of old photographs and postcards of the State Monument, John Trowbridge identified what appeared to be a monument that he could not account for, based on individuals known to have been interred on the State Mound. He speculated that perhaps this stone was marking the location of the Battle of River Raisin veterans. This area was located along the north side of the State Monument near its northwest corner. Examination of this location with ground penetrating radar resulted in the identification of several anomalies that were thought to represent grave shafts. While the excavation of two 2 x 2 m units and a 1 x 2 m unit in this area failed to find the remains of the Battle of River Raisin veterans several of the identified anomalies proved to be the grave shafts of Civil War veterans (these graves are described below). Associated with one of these graves was the base of a footstone, which was most likely the base for the unaccounted for stone seen on the old photographs and postcards.

Other efforts to locate the remains of the Battle of River Raisin soldiers consisted of the excavation of a series of shovel probes on the north side to the east of the sidewalk leading to the monument and a ground penetrating radar survey of the entire north side of the monument.

UNITS

Units 1-3 were located in the northwest portion of the State Mound. Unit 1 was 2 x 2 m in size and placed 6 m northwest of the main monument and 1.2 m southwest of the walkway between the Main Military Monument and the Barbour monument. Unit 2 was 2 x 2 m in size and placed 1.5 m southwest of Unit 1 at the foot of a small row of headstones that included Civil War veterans A.G. Bacon, R.H. King, and John G. Kennon. Unit 3 was 1 x 2 m in size and was placed adjacent to the southwest side of Unit 2.

STRATIGRAPHY

A total of four strata was identified in the units (Figures 45 and 46). They consisted of a 10-20 cm thick dark brown silt loam topsoil (Stratum 1), a 5-25 cm thick mottled yellow/brown silty clay loam (Stratum 2), a 20-30 cm thick brown silty clay

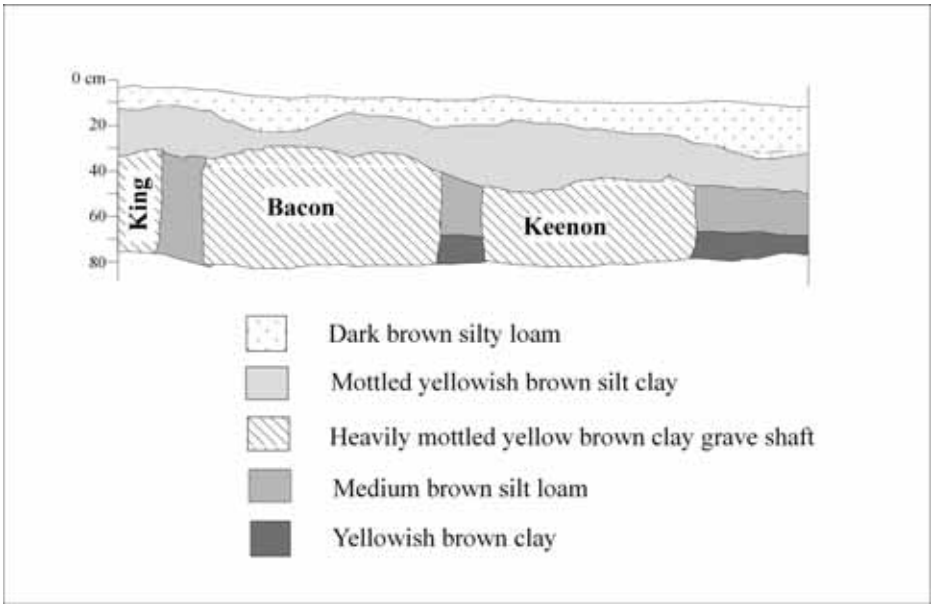

Figure 45. South Wall Profile of Units 2 and 3.

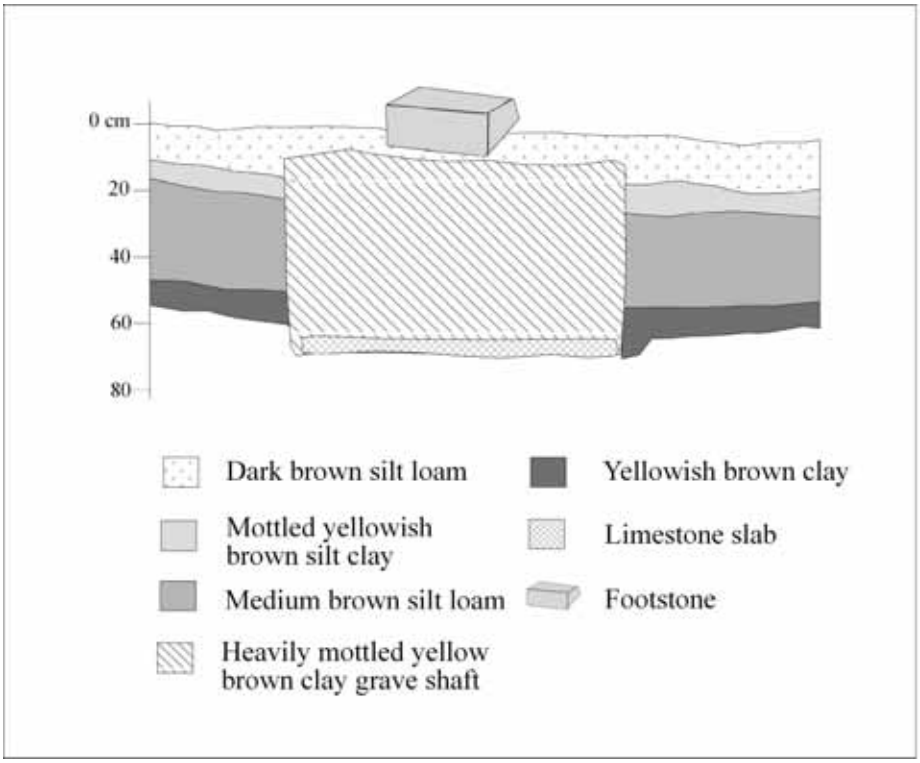

Figure 46. Unit 2 South Wall Profile Showing A.G. Bacon's Grave Shaft, Stone Slab, and Footstone.

loam (Stratum 3), and a yellow/brown silty clay subsoil (Stratum 4). Stratum 2 most likely represents a filling episode associated with landscaping activities that created the mound in the mid-1840s. Stratum 3 probably represents a buried topsoil that dates prior to the establishment of the Frankfort Cemetery. This stratum gradually transitioned into the subsoil (Stratum of 4), which consisted of a yellow brown silty clay.

Three graves were identified in Units 2 and 3, while no graves were found in Unit 1. These features consisted of a footstone base, gave shaft, and brick vault associated with Albert C. Bacon and grave shafts associated with Robert H. King and John G. Keenon (Figures 38, 45 and 46). Each of the graves was marked with a headstone. No evidence of a mass grave that contained the remains of the veterans of the Battle of River Raisin was documented in these units

ARTIFACTS

A small amount of historic artifacts were recovered from the topsoil of the three units. Six fragments of 1.8-1.9 mm thick plate glass were recovered from Units 1 and 2 (Table 9). While there was not a large enough sample to conduct a window glass analysis, the thickness of these six fragments is more typical of plate glass than architectural window glass. A fragment of slate stone also was recovered from Unit 2.

A four-holed bone button and a cut nail, and recovered from Unit 3. Bone buttons were common during the nineteenth century. This artifact is not associated with any burial; a visitor to the cemetery may have dropped it accidentally on the lawn. The cut nail dates from 1830 to 1880 and may have been used for a temporary wooden structure or a fence. Slate was generally used in the nineteenth century for roofing or as writing slates for students in school. The function of this small slate fragment is unknown.

Table 9. Artifacts Recovered from Units 1-3.

Unit	Level	Artifact	N=
1	1	Plate Glass	5
1	1	Flakes (n=2), shatter (n=1)	3
1	2	Flakes (n=8), shatter (n=4)	12
2	1	Slate (n=1), plate glass (n=1)	2
2	1	Flakes (n=7), tools (n=3)	10
2	2	Flakes (n=1), shatter (n=1), tools (n=1)	3
2	3	Flakes (n=1), shatter (n=1)	2
3	1	Button, Iron, 4-holed; Iron, Nail, Cut	2
3	1	Flakes (n=29), shatter (n=10), tools (n=1)	40
3	2	Flakes (n=37), chips (n=3) shatter (n=25), tools (n=1)	66
3	3	Flakes (n=22), chips (n=2) shatter (n=7), tools (n=1)	32

In addition to historic materials, 179 prehistoric artifacts were recovered from these units. Among them was a Middle Archaic (6000-3000 B.C.) Raddatz Side Notched point manufactured from Grier chert (Justice 1987:68). The presence of these materials indicates that portions of the Frankfort Cemetery were utilized by Native Americans several thousand years before the cemetery was established in the 1840s.

Other prehistoric artifacts recovered from Units 1-3 included 172 pieces of debitage, three biface fragments, two cores, and an edge modified, retouched flake. The presence of initial reduction and a single early stage biface suggests that lithic raw material was transported onto the site for the production of stone tools. The presence of two bipolar cores indicates that flake stone tools also were manufactured at this locale. The single edge modified retouched flake produced from Brannon chert indicates that plant and/or animal materials were processed at this site, which may have served as a series of seasonal hunting camps.

ROBERT H. KING (BURIAL 1)

Archival

Robert H. King was a Lieutenant Colonel in the Third Regiment Kentucky Cavalry of the Union Army. He was a native of Frankfort and entered military service as a First Lieutenant of Company C on September 4, 1861. King rose in the ranks quickly, being promoted to a rank of Captain and then Major of Company C in 1862. In May of 1863, he attained the rank of Lieutenant Colonel. Although he experienced some disciplinary actions towards the end of his service for harsh language, he was known as a brave and gallant soldier. Prior to the Civil War, King was a compositor and foreman in the printing business for the Commonwealth. He was considered one of the best compositors in the state. At the outbreak of the Civil War, he joined the 3rd Kentucky Volunteer Cavalry raised in Franklin County. The regiment was involved in a skirmish with General Nathan Bedford Forrest's cavalry near Sacramento, Kentucky. King was promoted to Captain, after Captain Bacon of the regiment was killed during the skirmish. He went on to command a brigade under General Kilpatrick and was with Sherman in his "ride to the sea." He proved to be popular with his men and a good commander (Trowbridge 2004).

After a brilliant military career, he left military service in 1866 only to meet an untimely death a few months later. He was buried on the State Mound on June 10, 1866:

> …He was buried as a soldier would be buried—by his old comrades-in-arms and with military honors. About a hundred Union soldiers formed his escort, Col. J. Mason Brown, as senior officer of Col. King's rank, commanding. The following officers acted as pall bearers: Maj. Gen. Thos. L. Crittenden, Gen. D.W. Lindsey, Brig. Gen. Geo. W. Monroe, Col. John M. Harlan, Lt. Col. Jas. T. Bramlette, Maj. Jas. R. Page, Maj. Jno. M. Bacon, and Surgeon J.T. Hatchett. The tattered flag of the 3rd

> Regiment was borne by eight of Col. King's old soldiers. They laid him to rest in the military mound in the Frankfort cemetery, by the side of his old captain, Albert Bacon. With a soldier's salute they left him there, where he now sleeps (The Commonwealth 1866:3, as cited by Trowbridge 2004).

Description

The foot end of King's grave was identified during the excavation of Unit #2. The grave shaft fill was visible in the northeast corner of the unit and consisted of a very mottled yellow and brown silt clay. However, only a portion of the grave shaft was exposed in the unit profile and a width could not be determined. No further excavation took place in King's grave. A headstone for this grave was inscribed with:

Leut. Col.
R. H. King
3D KY
Vet. Cav.
Died
June 9 1866

ALBERT G. BACON (BURIAL 2)

Archival

Albert G. Bacon was a Captain in Company C, Third Kentucky Volunteer Cavalry of the Union Army. He enrolled in the military on September 4, 1861 at Frankfort and was a native of Franklin County. He was killed at a skirmish in Sacramento, Kentucky on December 28, 1861 (Trowbridge 2004). The Official Record of the War of the Rebellion (I:7) described the action that resulted in his death:

> December 28, 1861, Maj. E.H. Murray, with 168 men, was attacked while on a scout by Col. Forest, with 300 men, at Sacramento. The fight was fierce, but Murray's men, being outnumbered, gave way. The loss was severe, Capt. Bacon being killed, Davis captured and eight soldiers killed and wounded.

His death was announced in Frankfort:

> A telegraphic dispatch from General Crittenden was received here on Monday, containing the melancholy information that Capt. Bacon was killed in a skirmish at Sacramento, on Saturday. The locality of the place is not exactly known, but is supposed to be about twenty miles from Calhoun, the present Headquarters of Crittenden's command.

> We do not know that we have ever seen our community more disturbed than it was at this mournful announcement. Captain Bacon was a native of this county, and for the greater part of his life a resident of this town. No one had a more extensive acquaintance, and no one was more universally esteemed. He was a frank, genial, gallant man—the life of the social circle—full of kind and gentle impulses. Wherever he went, mirth seemed to wanton at his side, and he diffused around him an influence that made his companionship and affection with all. Cut down suddenly—the armed and patriotic soldier falling in the discharge of what he deemed a sacred duty to his Government and to his country! Such is war, and above all such is civil war. It brings griefs unutterable; it desolates hearts; it causes humanity to mourn (Tri-Weekly Commonwealth 1862, as cited in Trowbridge 2004).

Captain Albert C. Bacon was buried on the State Mound on January 2, 1862.

Description

The grave of Albert C. Bacon was identified during the excavation of Unit 2. The base of a footstone from the grave was found in the unit. The base measured 20 x 15 cm and consisted of a slot in the top where the footstone would have been inserted. The footstone was not located. The grave shaft for Bacon's burial was identified in the north wall profile of Unit 2. The grave shaft fill consisted of a very mottled yellow and brown silty clay and measured 86 cm in width. Within the grave shaft fill, a stone slab cover was identified. This fine cut and polished limestone slab only covered the lower quarter of a brick-lined vault. Excavation of this grave continued until the top of a metal coffin was encountered. This grave was not investigated any further and the stone slab was replaced and the unit was backfilled. A headstone for this grave was inscribed with:

Capt. A.G. Bacon
3rd Ky Cavalry U.S.A.
Killed at Sacramento
Ky Dec. 28 1861
Aged 42 Years

JOHN G. KEENON (BURIAL 3)

Archival

Dr. John G. Keenon was appointed Major and Brigade-Surgeon for United States Volunteers of the Union Army on October 9, 1861. He was born in 1827 in Frankfort, Kentucky and came from a prominent plantation family that had a large slave holding. He was a graduate of Centre College, received medical training in Louisville, and graduated from Meigs Medical College in Philadelphia. Keenon practiced medicine in St. Joseph, Missouri and Frankfort. He also has substantial real estate investments in

Chicago. Although the Keenon family owned a large number of slaves, they were loyal to the Union. When the Civil War began, Dr. Keenon went to Washington D.C. and joined the army as a surgeon. He was a veteran of several important battles including Shiloh, Corinth, and Vicksburg. He died on August 12, 1864 in Memphis, Tennessee, while serving as Medical Director of the Sixteenth United States Army Corps and Post Surgeon in charge of hospitals at Memphis. Dr. John G. Keenon was buried on the State Mound on August 31, 1864 (Trowbridge 2004).

Description

The foot end of John G. Keenon's grave was identified during the excavation of Units 2 and 3. The grave shaft fill was identified in the north wall profile and consisted of a mottled yellow and brown silty clay. The shaft measured 90 cm in width. No further excavation of this grave took place. A headstone for this grave was inscribed with:

Dr. Jno. G. Keenon
Born in
Frankfort, K.Y.
October 20, 1827
Commissioned Brigade Surgeon
October 9, 1861;
Died in the Service,
At Memphis, Tenn.,
August 12, 1864

SOIL CORE PROBING

A total of 62 soil core probes was placed on the State Mound in an attempt to locate grave shaft fill associated with the burial of the soldiers killed at the Battle of River Raisin. Most of the probes were excavated at 50 cm intervals on three transects (Figure 37). Transect 1 was located 15 m northeast of the northeast corner of Unit 2 and extended in an northeast/southwest direction. A total of 19 probes was placed along this transect. The depth of the subsoil documented in this probes ranged from 14 to 54 cm below the ground surface. No evidence of grave shafts was identified in Transect 1.

Transect 2 was located 1 m northwest and parallel to Transect 1. A total of 17 probes was placed along this transect. The depth of subsoil in this transect ranged from 22 to 32 cm below the ground surface. No evidence of grave shafts was identified in Transect 2.

Transect 3 was located adjacent to Units 1 and 2 and extended in a northwest-southeast direction. A total of 23 probes was placed along this transect. The depth of the subsoil ranged from 22 to 62 cm below the ground surface. No evidence of grave shafts was identified in Transect 3.

Three soil core probes were placed at the northwest corner of the pavement that the surround the State Monument. The depth of subsoil in this area ranged from 60 to 70 cm below ground surface.

Although there was no evidence of grave shafts or the burial of the Battle of River Raisin soldiers, the soil core probes indicate that land alterations had occurred at the State Mound. Mottled soil was identified in the areas examined near the state mound, which was mostly likely associated with grading and filling activities during the creation of the mound and the Frankfort Cemetery. Also, several pockets of cinders were identified in the northwest quadrant of the State Mound.

SUMMARY AND CONCLUSIONS

Although the Kentucky Archaeological Survey's investigation of the State Monument was not able to relocate the remains of the veterans of the Battle of River Raisin, KAS was successful in relocating the graves of five veterans that had been covered by the construction of a sidewalk in the late 1980s. Attempts to relocate the grave of a sixth veteran led to the conclusion that he had never been buried where the sidewalk is now located and raised questions concerning whether he had ever been interred at the State Monument. Although a relatively small sample of individuals was examined and their remains were poorly preserved, this study has generated new information pertaining to mid- to late nineteenth century mortuary practices and the lives of the individuals interred within this cemetery.

Although information was collection on all five individuals, Thoreau and Green were of particular interest for what their remains suggest about the lives of these enlisted soldiers. Thoreau was at best five foot two inches tall, and he appears to have been younger than 18 years old. Based on the results of the analysis of his remains, the following scenario can be suggested. Thoreau had some bouts of disease and malnutrition over the course of his youth, as evidenced by the curvature of his bones and nutritional stress lines on his teeth, and he worked extensively with his hands and had arthritis in them. He also did heavy, back-breaking labor, as indicated by markings on his vertebrae.

Green, like Thoreau, showed signs of malnutrition and curvature of the forearms and lower limbs, and exhibited stunted growth and short stature. He also exhibited characteristics observed in different populations, but these characteristics overlap between these groups so a clear assessment of biological affinity or heritage could not be made. He possesses some characteristics that are similar to Native American populations, which are observed in both North and South America. He also clearly has some European and African characteristics as well. Based on these observations, it is quite likely that Green was a person of mixed ancestry, possibly Native American and European. That both Thoreau and Green exhibited a great deal of nutritional stress during their lives suggests that they may have joined the military to better their lives. The military would have offered them steady employment, and would have housed and fed them.

The coffins within which Green and Thoreau, as well as Edwards, were interred were some of the first cast iron coffins used in Kentucky. These coffins were probably procured in New Orleans and were used to transport their bodies from Mexico to Frankfort. Thoreau's and Edwards' coffins were distinguished from Greens' by the presence of a wooden veneer of yellow pine and poplar, respectively. Hogg also was interred in a cast iron coffin, but by the 1860s, the sides of the coffin were much thicker and the coffins had iron handles and a glass viewing plate.

Prior to Green's body being transported back to Kentucky, it was packed in white oak wood charcoal. This rather unique burial treatment, may have been intended to absorb odors during the transporting of his body. The only other reference to the use of charcoal in burial practices is that of powdered charcoal that was used for preservation by early embalmers.

Unlike the other four investigated burials, Gilmore was interred in a wooden casket, with six lead alloy handles and glass viewing plate. The handles associated with his casket are of interest in that they bear symbols, such as the square, compass, and "G," that are associated with the Masonic Order. That Gilmore was a Mason was confirmed by his obituary, which noted that his body was released to the Masons for burial. It also is possible that the purple silk found with his remains represents a Mason's sash. The dress frock coat Gilmore was interred in along with gold-gilded button recovered from his burial indicates that Gilmore's wardrobe was of a good quality. While the textile evidence recovered from Gilmore's burial was limited, it along with his casket hardware reinforces has status as an individual of some means and reflected his place in society at that time.

Among the other textiles recovered from the State Monument were the remains of uniforms recovered from Edwards and Hoggs burials. The analysis of these textiles and associated buttons pointed to changes in the production of military uniforms from the late 1840s to the mid-1860s. By the Civil War uniforms were being mass produced and in part this is reflected by a shift from hand to machine made uniforms and in greater uniformity of buttons associated with Hogg than with Green. That no buttons were recovered from Thoreau's burial and only four buttons were found with Edwards suggests that unlike Green these two men were probably not buried in their uniforms.

The limited investigations conducted at the State Monument resulted in the excavation and reinternment of five veterans graves that had been covered by a sidewalk in the late 1980s. Analysis of the human remains and associated artifacts generated new insights into the lives of these soldiers and mid- to late nineteenth century mortuary practices. Unfortunately, the remains of the veterans of the Battle of River Raisin could not be located. Hopefully additional research into where these remains may have been interred will generate new hypothesis about where their remains are located, so they can be properly marked and protected.

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APPENDIX A:
CRANIAL INVENTORY

Burial	Gilmore	Thoreau	Green	Edwards	Hogg
Cranial Bones	3	2	2	3	3
frontal L.	3	3	2	2	9
frontal R.	3	2	2	2	9
Parietal L.	3	2	2	3	9
Parietal R.	3	9	2	3	9
Occipital L.	3	1	1	3	2
Occipital R	3	1	1	3	2
Temporal L.	3	1	2	2	9
Temporal R.	3	1	1	2	9
TMJ L.	9	1	9	1	9
TMJ R.	9	1	9	1	9
Sphenoid L.	9	3	9	9	9
Sphenoid R.	9	3	9	9	9
Zygomatic L.	9	9	9	9	9
Zygomatic R.	9	9	9	9	9
Maxilla L.	9	3	2	3	3
Maxilla R.	9	3	2	3	9
Palatine L.	9	9	9	9	9
Palatine R.	9	9	9	9	9

APPENDIX B:
POST CRANIAL INVENTORY

Burial	Gilmore	Thoreau	Green	Edwards	Hogg
Postcranial Bones and joint surfaces	3	2	2	2	2
Clavicle (L)	9	3	3	3	9
Clavicle (R)	9	3	2	3	9
Scapula body (L)	9	3	3	3	2
Scapula body (R)	9	3	3	3	2
Glenoid fossa (L)	9	2	9	2	1
Glenoid fossa (R)	9	9	9	1	9
Patella (L)	9	3	9	3	9
Patella ®	9	1	9	3	9
Os Coxae	9	3	3	3	3
Ilium (L)	9	3	3	3	2
Ilium ®	9	3	3	9	2
Ischium (L)	9	9	3	9	3
Ischium (R)	9	9	3	9	3
Pubis (L)	9	9	9	9	9
Pubis (R)	9	9	9	9	9
Acetabulum (L)	9	3	3	9	9
Acetabulum (R)	9	9	3	9	9
Auricular Surface (L)	9	3	9	3	1
Auricular Surface ®	9	9	9	9	1
Vertabrae	9	3	3	9	1
C1 centrum	9	9	2	9	1
C1 neural arch	9	9	9	9	1
C2 centrum	9	1	9	9	9
C2 neural arch	9	1	9	9	2
C3-6 centrum (grouped)	9	9	3	9	1
C3-6 neural arch(grouped)	9	9	9	9	1
C7 centrum	9	9	9	9	1
C7 neural arch	9	9	9	9	1
T1-9 centrum	9	3	9	9	1
T1-9 neural arch	9	9	3	9	1
T10 centrum	9	9	9	9	1
T10 neural arch	9	9	9	9	1
T11 centrum	9	9	9	9	1
T11 neural arch	9	9	9	9	1
T12 centrum	9	9	9	9	1
T12 neural arch	9	9	9	9	1
L1 centrum	9	9	3	9	1
L1 neural arch	9	9	9	9	1
L2 centrum	9	9	9	9	1
L2 neural arch	9	9	9	9	1
L3 centrum	9	9	9	9	1
L3 neural arch	9	9	9	9	1

Burial	Gilmore	Thoreau	Green	Edwards	Hogg
L4 centrum	9	9	9	9	1
L4 neural arch	9	9	9	9	1
L5 centrum	9	9	9	9	1
L5 neural arch	9	9	9	9	1
Sternum	9	9	9	9	9
manubrium	9	9	9	9	9
body	9	9	9	9	9
Ribs	9	3	3	9	9
Bone/ Burial#	23	27	29	30	33
1RST (L)	9	9	9	9	9
1RST (R)	9	9	9	9	9
2nd (L)	9	9	9	9	9
2nd ®	9	9	9	9	9
3-10 (grouped) (L)	9	9	3	9	9
3-10 (grouped) (R)	9	9	3	9	9
3-10 (grouped) unsided	9	9	9	9	9
11th (L)	9	9	9	9	9
11th ®	9	9	9	9	9
12th (L)	9	9	9	9	9
12th ®	9	9	9	9	9
Long Bones	9	2	2	2	2
Left Humerus Proximal Epiphysis	9	9	3	9	2
Left Humerus Proximal Third	9	9	3	2	2
Left Humerus Middle Third	9	1	1	2	1
Left Humerus Distal Third	9	1	1	2	1
Left Humerus Distal Epiphysis	9	9	2	9	1
Right Humerus Proximal Epiphysis	9	9	3	9	2
Right Humerus Proximal Third	9	1	3	2	2
Right Humerus Middle Third	9	1	1	2	1
Right Humerus Distal Third	9	1	1	2	1
Right Humerus Distal Epiphysis	9	9	2	9	1
Left Radius Proximal Epiphysis	9	9	9	9	3
Left Radius Proximal Third	9	1	1	3	9
Left Radius Middle Third	9	1	1	3	9
Left Radius Distal Third	9	1	1	9	3
Left Radius Distal Epiphysis	9	2	1	9	9
Right Radius Proximal Epiphysis	9	9	1	9	9
Right Radius Proximal Third	9	9	1	3	9
Right Radius Middle Third	9	3	1	3	9
Right Radius Distal Third	9	9	1	3	9
Right Radius Distal Epiphysis	9	9	9	9	9
Left Ulna Proximal Epiphysis	9	2	2	9	3
Left Ulna Proximal Third	9	1	1	3	9
Left Ulna Middle Third	9	1	1	3	2
Left Ulna Distal Third	9	1	1	3	3
Left Ulna Distal Epiphysis	9	2	2	9	2
Right Ulna Proximal Epiphysis	9	9	2	9	9

Burial	Gilmore	Thoreau	Green	Edwards	Hogg
Right Ulna Proximal Third	9	9	1	2	9
Right Ulna Middle Third	9	2	1	1	9
Right Ulna Distal Third	9	3	2	1	9
Right Ulna Distal Epiphysis	9	9	9	9	9
Left Femur Proximal Epiphysis	9	3	2	9	2
Left Femur Proximal Third	9	1	2	3	9
Left Femur Middle Third	9	1	1	2	2
Left Femur Distal Third	9	1	1	3	2
Left Femur Distal Epiphysis	9	9	2	9	2
Right Femur Proximal Epiphysis	9	2	2	9	2
Right Femur Proximal Third	9	2	2	3	9
Right Femur Middle Third	9	1	1	2	2
Right Femur Distal Third	9	1	2	3	2
Bone/ Burial#	23	27	29	30	33
Right Femur Distal Epiphysis	9	9	9	9	3
Left Tibia Proximal Epiphysis	9	9	9	9	9
Left Tibia Proximal Third	9	1	2	2	9
Left Tibia Middle Third	9	1	1	1	3
Left Tibia Distal Third	9	1	2	2	3
Left Tibia Distal Epiphysis	9	9	9	9	3
Right Tibia Proximal Epiphysis	9	9	9	9	9
Right Tibia Proximal Third	9	2	1	2	3
Right Tibia Middle Third	9	1	1	1	3
Right Tibia Distal Third	9	1	2	2	3
Right Tibia Distal Epiphysis	9	9	2	9	9
Left Fibula Proximal Epiphysis	9	9	9	9	9
Left Fibula Proximal Third	9	3	9	9	3
Left Fibula Middle Third	9	1	9	3	3
Left Fibula Distal Third	9	1	9	3	3
Left Fibula Distal Epiphysis	9	9	9	9	9
Right Fibula Proximal Epiphysis	9	1	9	9	9
Right Fibula Proximal Third	9	1	9	9	3
Right Fibula Middle Third	9	1	9	3	3
Right Fibula Distal Third	9	1	1	3	3
Right Fibula Distal Epiphysis	9	2	2	9	9
Left Talus	9	9	2	9	1
Right Talus	9	9	1	9	1
Left Calcaneus	9	3	2	9	1
Right Calcaneous	9	9	2	9	2
Hand	9	2	2	3	3
Left Carpals	9	2	1	9	9
Right Carpals	9	9	2	3	9
Unsided Carpals	9	9	9	9	9
Left Metacarpals	9	2	2	9	9
Right Metacarpals	9	9	3	9	9
Unsided Metacarpals	9	9	9	3	9
Left Phalanges	9	2	3	3	9

Burial	Gilmore	Thoreau	Green	Edwards	Hogg
Right Phalanges	9	2	2	3	9
Unsided Phalanges	9	9	9	9	9
Foot	3	2	2	9	3
Left Tarsals	3	3	1	9	9
Right Tarsals	9	3	1	9	9
Unsided Tarsals	9	9	9	9	9
Left Metatarsals	3	9	1	9	9
Right MetaTarsals	9	3	1	9	9
Unsided Metatarsals	3	9	9	9	9
Left Foot Phalanges	9	3	2	9	9
Right Foot Phalanges	9	9	2	9	9
Unsided Foot Phalanges	3	3	9	9	9

APPENDIX C:
POST CRANIAL MEASUREMENTS FOR GREEN

Cranial Measures	relatively incomplete
Maximum Cranial Length	n/a
Maximum Cranial Breadth	n/a
Bizygomatic Diameter	n/a
Basion Bregma Height	n/a
Cranial Base length	n/a
Basion Prosthion Length	n/a
Maxillo-Aveolar Breadth	58.9
Maxillo Aveolar Length	n/a
Biaurricular Breadth Breadth	n/a
Upper Facial Height	n/a
Minimum Frontal Breadth	100.99
Upper Facial Breadth	n/a
Nasal Height	n/a
Nasal Breadth	25.31
Orbital Breadth	n/a
Orbital Height	n/a
Bi-orbital Breadth	107.86
Interorbital Breadth	31.01
Frontal Chord	107.56
Parietal Chord	n/a
Occipital Chord	98.7
Foremen Magnum Length	n/a
Foremen Magnum Breadth	n/a
Mastoid Length	31.42
Chin Height	44.85
Height of mandibular Body	34.74
Breadth of mandibular body	11.6
Bigonial Breadth	n/a
Bicondylar breadth	n/a
Minimum Ramus breadth	33.1
Maximum Ramus Breadth	n/a
Maximum Ramus Height	n/a
Mandibular Length	95.82
Mandibular Angle	129
Post Cranial	also fragmentary
Clavicle:Maximum Length	n/a
Clavicle : Anterior Posterior Diameter at Midshaft	n/a
Clavicle : Superior-Inferior Diameter at Midshaft	n/a
Scapula:Height	n/a
Scapula: Breadth	n/a
Humerus: Max Length	n/a
Humerus:Epicondylar Breadth	n/a
Humerus:Vertical Diameter of Head	n/a
Humerus:Max diameter at Mid Shaft	24.27
Humerus:min Diameter at midshaft	74
Radius: Maxium Length	n/a
Radius:Anterior Posterior Diameter at Midshaft	13.4

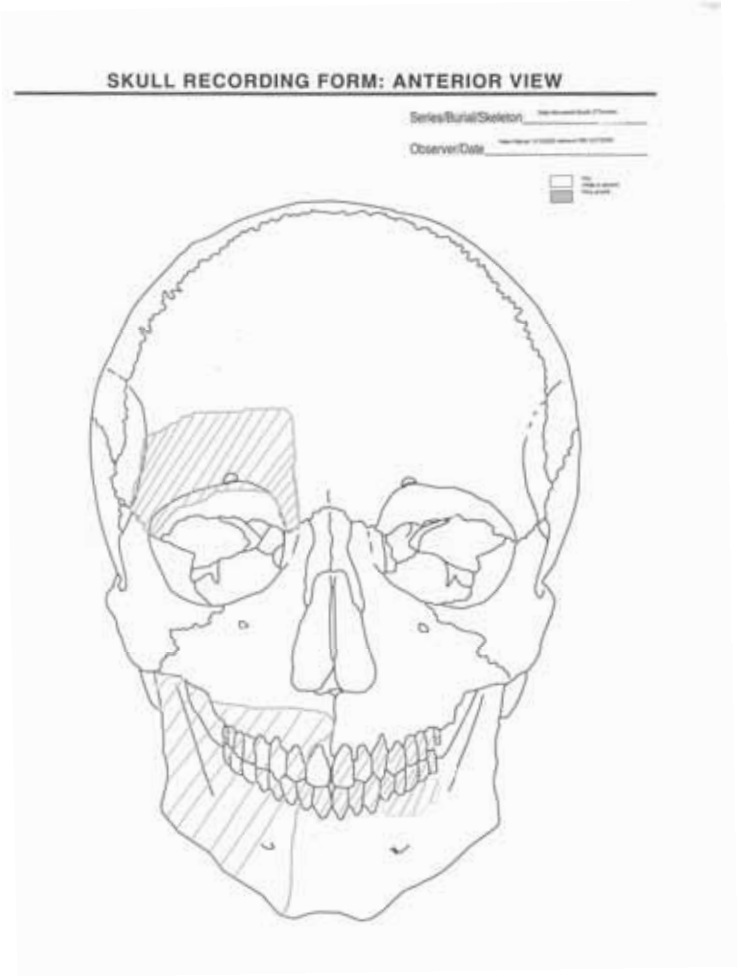
Radius:Medial-Lateral diameter at Midshaft	15.25
Ulna:Maximum Length	n/a
Ulna:Anterior Posterior Diameter	16.88
Ulna:Medial Lateral Diameter	14.88
physiological Length	23.3
Ulna:minimum circumference	4
Sacrum:Anterior Length	n/a
Sacrum:Anterior superior breadth	n/a
sacrum: Max. Transverse diameter of base	n/a
Os Coxae height	n/a
Os Coxae Illiac breadth	n/a
Os Coxae: pubis length	n/a
: Ischium length	n/a
Femur: maximum length	44.1
Femur: bicondylar length	43.3
Epicondylar length	68.78
Femur: Maximum head diameter	48.04
Femur:Anterior posterior Subtrochanteric Diameter	28.8
Femur:Medial lateral Subtrochanteric Diameter	24.8
Femur:anterior posterior Midshaft diameter	28.12
Medial lateral midshaft diameter	30.35
Femur:Midshaft circumferance	9.3
Platymeric Index	
Range	
Robusticity Index	
Tibia Length	n/a
Tibia: Maximum Proximal epiphyseal breadth	n/a
Tibia: Maximum Distal epiphyseal breadth	48.7
Tibia: Max diameter at Nutrient Foramen	n/a
Tibia:Medial Lateral Diameter at Nutrient Foremen	n/a
Tibia:Maximum Circumferance at Nutrient foremen	n/a
Platycnemic Index	
Range	
Fibula Maximum Length	n/a
Fibula Maximum diameter at Midshaft	n/a
calcaneus Maximum Length	n/a
Calcaneus Middle Breadth	39.57

APPENDIX D:
DENTAL INVENTORY

Gilmore: Very little could be done with Gilmore's teeth. The dentition is represented by three partial lower left molar crowns. They appear to be lower left m1, m2 and m3. M1 is fractured in half bucco-lingually. Each molar has a pin hole caries (cavity) the first has two. The second molar appears has a Carbell's cusp. This a trait observed whose highest frequency is observed in European populations (20-30 percent) and is less common in African populations (15-20 percent) and seldom in American Indians and North Asian peoples (0-10 percent) (Scott and Turner II 2000). None of the molars have intact roots but all appear to be from an adult. Age plus 18 years based on 3rd molar eruption. Wear scores are 4 or for all four quadrants on all three teeth. Measurements for m2 and m3: m2 md=11.5 bl=10.5 ch=6.92 ;m3 md=11.73 bl=8.17 ch=6.20.

Dental Inventory (continued)

Drawing of Thoreau showing missing parts of cranium and remaining mandible and dentition. (not to scale)



Thoreau

Maxilla (taken on left side unless indicated with R for right 0r * if estimated)

Tooth	I^1	I^2	C	PM^1	PM^2	M^1	M^2	M^3
Mesiodistal Diameter	9.36 R	6.36	7.65	6.45	6.53	9.92*	10.47	9.86
Buccolingual Diameter	8.75 R	6.80	7.97	8.86	9.16	10.91	10.92	9.86
Crown Height	12.19 R	10.66	11.07	8.72	8.21	7.65	7.46	**

** M^3 crown not fully exposed so no measure taken

Thoreau

Mandible (taken on left side unless indicated with R for right)

Tooth	M_3	M_2	M_1	PM_2	PM_1	I_2	C	I_2	I_1
Mesiodistal Diameter	11.77	11.83	11.41	6.80	7.75	6.46	6.86	6.46	5.65
Buccolingual Diameter	10.69	10.31	10.19	7.32	7.80	6.21	7.67	6.21	6.51
Crown Height	6.83	7.50	7.01	8.99	8.91	10.47	12.18	10.47	9.99

Dental Hypoplasias Thoreau

Type code 0-7 or 9 (not observable); Location measure distance from CEJ to most oclusal portion of defect;
Color: code 1-4 for hypo calcifications

Maxilla Right-Thoreau

Tooth	M^3			M^2			M^1			PM^2			PM^1			C			I^2			I^1		
Defect	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Type	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Location	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Color	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Onset	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

Maxilla Left-Thoreau

Tooth	I^1			I^2			C			PM^1			PM^2			M^1			M^2			M^3		
Defect	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Type	7	1	9	S	S	S	7	9	9	7	9	9	7	9	9	9	9	9	9	9	9	9	9	9
Location	4.91	6.25	9	S	S	S	3.48	9	9	1.49	9	9	1.36	9	9	9	9	9	9	9	9	9	9	9
Color	4	2	9	S	S	S	4	9	9	2	9	9	2	9	9	9	9	9	9	9	9	9	9	9
Onset	2.49	1.94	9	S	S	S	3.65	9	9	n/c	9	9	n/c	9	9	9	9	9	9	9	9	9	9	9

S-t observed because rust stain and metal adhering to tooth
n/c-not calculated- most current research focuses on Incisors and Premolars

Mandible Left-Thoreau

Tooth	M_3			M_2			M_1			PM_2			PM_1			C			I_2			I_1		
Defect	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Type	9	9	9	7	9	9	7	9	9	7	9	9	1	9	9	1	1	9	0	0	0	0	0	0
Location	9	9	9	2.87	9	9	3.47	9	9	3.32	9	9	3.69	9	9	3.49	7.21	9	0	0	0	0	0	0
Color	9	9	9	4	9	9	4	9	9	2	9	9	2	9	9	2	2	9	0	0	0	0	0	0
Onset	9	9	9	n/c	9	9	n/c	9	9	n/c	9	9	n/c	9	9	3.64	1.13	9	0	0	0	0	0	0

Mandible Right-Thoreau

Tooth	I_1			I_2			C			PM_1			PM_2			M_1			M_2			M_3		
Defect	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Type	9	9	9	9	9	9	1	1	9	7	9	9	7	9	9	7	9	9	7	9	9	9	9	9
Location	9	9	9	9	9	9	3.29	6.84	9	3.77	9	9	3.56	9	9	2.55	9	9	2.60	9	9	9	9	9
Color	9	9	9	9	9	9	2	2	9	4	9	9	4	9	9	4	9	9	4	9	9	9	9	9
Onset	9	9	9	9	9	9	3.76	1.38	9	n/c	9	9	n/c	9	9	n/c	9	9	n/c	9	9	9	9	9

Green

No dental measures were taken other than the following hypoplasia

Dental Hypoplasias
Type code 0-7 or 9 (not observable); Location measure distance from CEJ to most occlusal portion of defect;
Color: code 1-4 for hypo calcifications
n/c-onset not calculated- most current research focuses on Incisors and Premolars

Mandible Left Green

Tooth	M_3			M_2			M_1			PM_2			PM_1			C			I_2			I_1		
Defect	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Type	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	1	1	9	9	9	9	9	9	9
Location	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	6.27	5.02	9	9	9	9	9	9	9
Color	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	2	2	9	9	9	9	9	9	9
Onset	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	2.61	1.76	9	9	9	9	9	9	9

Edwards

Edwards had relatively little wear except on the back right molar indicating uneven tooth wear. He had a few pin point caries and no hypoplasias

Edwards
Maxilla (taken on left side unless indicated with R for right 0r * if estimated)

Tooth	I^1	I^2	C	PM^1	PM^2	M^1	M^2	M^3
Mesiodistal Diameter	9.11R	6.29	7.43	7.36	5.12	9.87	8.52	9.12
Buccolingual Diameter	6.65	7.42	7.43	9.03	8.26	11.78	11.41	11.40
Crown Height	11.29	11.91	9.47	8.73	7.33	6.90	7.19	6.85

Edwards
Mandible (taken on left side unless indicated with R for right)

Tooth	M_3	M_2	M_1	PM_2	PM_1	C	I_2	I_1
Mesiodistal Diameter	10.22	9.80	11.09	6.07	6.65	6.16	5.56	5.72
Buccolingual Diameter	10.14	10.25	10.14	8.07	8.21	7.81	5.52	5.25
Crown Height								

Hogg

Hogg was represented by 15 crowns without their roots attached The following measures were observed**.**

Hogg
Mandible (taken on left side unless indicated with R for right)

Tooth	M_3	M_2	M_1	PM_2	PM_1	I_2	C	I_2	I_1
Mesiodistal Diameter	10.78	9.75	10.32	7.04	**	**	**	**	**
Buccolingual Diameter	10.63	10.24	10.62	8.43	**	**	**	**	**
Crown Height	8.24	6.10	6.79	7.45	**	**	**	**	**

** no measurements possible