

The St. George's Caye Archaeology Project: Results of the 2011 Field Season

Edited by
James F. Garber



Texas State University
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Chapter 1. Introduction

James F. Garber

St. George's Caye played a vital role in the history and development of Belize as an independent nation. This small caye is one of hundreds of islands off the coast of Belize that are part of large reef system, the second largest in the world. Its predominant role in the early history of the English settlement was due to its position and shape. The reef system forms an offshore barrier that protects the coast. Because of the difficulties of navigation, these waters provided safe haven for merchants, buccaneers, and pirates that sailed the Caribbean. To access the mainland and harbors at the mouths of the rivers, one must navigate narrow passages through the reef and then follow a complex system of channels. In order to reach the Belize River, the country's main river system, one must pass by St. George's Caye, thus its strategic location guarding the port (Figure 1.1). Additionally, the caye is crescent shaped making it ideal for careening ships on its leeward side (Figure 1.2).

The Battle of St. George's Caye on September 10, 1798 represents the end of Spain's attempts to conquer the territory that is now known as Belize. Although this battle happened over 200 years ago, it is still plays a large role in Belizean culture, as seen during the annual September Celebrations when people all over the country honor the Battle of St. George's Caye. The fact that the caye is featured on the Belize five-dollar bill is an indicator of its importance (Figure 1.3). The front side depicts a medallion from the tomb of Thomas Potts one of the Bay Settlements early leaders and the back side features a 1764 map of the caye, the Thomas Potts tomb, the Biddle house, and a "bathing crawl".

While much has been written about the history of St. Georges Caye, the first capital of Belize, there has been little archaeology done on the island. With this in mind, we

initiated the St. George's Caye Archaeology Project in 2009. The primary elements of the project are composed of archival research, metal detector survey, subsurface probing, and archaeological excavation. The results of the 2011 field season are presented in the pages that follow.

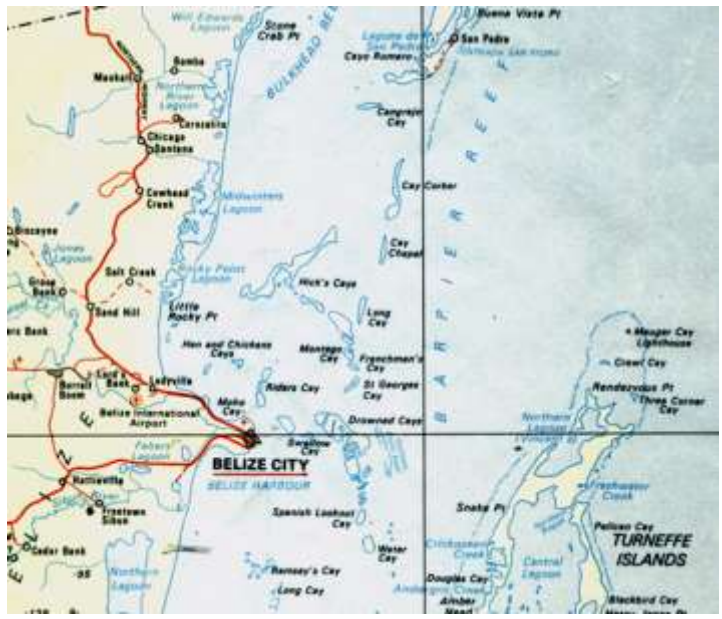


Figure 1.1. Map of Belize coast showing location of St. George's Caye.



Figure 1.2. Satellite image of St. George's Caye.



Figure 1.3. Belize 5 dollar bill. Front side depicts a medallion from Thomas Potts' tomb, backside shows a 1764 map of the cayes, the Thomas Potts tomb, the Biddle house, and a bathing "crawl". This style bill was introduced in 1990.

Chapter 2. Field Investigations on St. George's Caye: Results of the 2011 Field Season

J. Heath Bentley, James F. Garber, and Lauren A. Sullivan

At the start of the 2011 field season we continued excavations in the cemetery that were initiated in the summer of 2009. Subsequently we expanded our investigations. All 2010 excavations proved problematic due to a high water table. Because of consistent heavy rainfall, and the fact that the caye is low-lying, the water table remained not far from ground surface throughout the 2010, and 2011 field seasons. The water table was reached 20 to 50 cm below ground surface, which varied depending on the level of rainfall. This provided an element of difficulty in the excavations. We developed a method for temporarily lowering the water table in order to more accurately conduct and document excavations. This method included using a gasoline powered bilge pump to remove water from a 1x1 m hole located in proximity to excavation units. When the bilge pump hose pumped water from a lower elevation than the level being excavated, the water table dropped below the excavation level for a large area surrounding the 1x1 m pump hole.

Cemetery Excavations

During the 2011 field season on St. George's Caye all excavations were conducted in the northern region of the cemetery and were included in a single operation referred to as Op. 1. The initial purpose of this was to investigate subsurface anomalies located by both subsurface probing and ground penetrating radar (Figure 2.1). This GPR study was conducted by Dr. Chet Walker in June 2011.

Op. 1 This operation consisted of nine 2x2 meter excavations units: XU23, XU24, XU25, XU26, XU27, XU28, XU29, XU30, and XU31 (Figure 2.2). The excavated units

contained 17 human burials (Figure 2.3). Each burial was oriented west-east with the head to the west and feet to the east. Roughly half of the burials are oriented at a slight southwest-northeast angle, though there does not seem to be any correlation between burial orientation and burial depth or location. For example, Burial 1 has a west-east orientation and overlaps Burial 2 which is oriented southwest-northeast. This burial overlap indicates that Burial 2 preceded Burial 1. On the other hand, Burial 5 with a southwest-northeast orientation, overlaps Burial 6 which is oriented west-east. The remains consisted of a coffin floor plank underneath the body with partial sidewalls standing vertical. None of the burials included remains of a coffin top, including those that had a floor plank. These coffins were constructed of what appears to be mahogany or perhaps Santa Maria. Mahogany became a major Belizean export in the 1700s surpassing logwood in the later half of that century. While some of the burials still included a coffin bottom plank, others did not. We discovered that there was a correlation between burial depth and coffin presence. The deeper burials included a coffin bottom plank and partial sidewalls, while the more shallow burials did not. We determined that this was due to the fluctuating water table brought on by environmental factors such as rainfall, tide, etc. There is a zone beneath the soil approximately 20-55 cm. below surface where the water table fluctuates. All of the preserved coffin planks discovered were underneath this zone, while the burials that did not include coffin remains were located within this zone. In other words, all coffin wood was preserved that was below the zone that was always wet and the portions of the coffins that were in the zone that was alternately wet and dry were not preserved.

Level 1 for the entire Op. included surface matrix and ended with a distinct soil change to a light-colored sand generally 10-20 cm below ground surface. Level 2 was

consistent in the western portion of the Operation which included XU23, XU25, XU27, XU28, XU29, and XU30 (Figure 2.2). Collectively, these excavation units contained collapsed brick from a box-type grave that was identified on the 1872 cemetery map (Figure 2.4). Due to a series of hurricanes that have hit St. George's Caye, these scattered bricks were the only remains of the early box grave. The bricks were loosely arranged in a partial rectangular outline. Surrounding this brick cluster were seven vertical wooden posts. These posts would have once surrounded the above ground brick grave which, as indicated on the 1872 cemetery map, would have been that of James Bartlett. Level 2 ended level with the bottom of the bricks which would have been the original ground surface.

Box-type graves consist of an above ground rectangular feature composed of brick and mortar. This brick is ship ballast from England. Some of the more elaborate box-graves had a large slab of marble or sandstone upon which was carved an elaborate epitaph. This type of grave is common in Yarborough Cemetery as well as cemeteries of the same period in the United States.

Level 3 of XU23, XU25, XU27, XU28, XU29, and XU30 began at the bottom of the bricks and extended down to include a level of burials below the original ground surface. All of the burials within this level were located more or less at the same depth. The matrix surrounding the outside of each burial in Level 3 throughout Op. 1 was a compact undisturbed sand/shell mixture where no burials had been placed. The matrix immediately surrounding each grave was not compact, as it had been disturbed during the placement of the coffin. Level 3 was terminated at the bottom of the burials.

XU23 was the first excavation unit established during the 2011 field season and was established directly over a subsurface anomaly (Figure 2.1). XU23 was established 2.5-4.5

meters north of the east-west cemetery baseline and between 13 and 15 meters east of the north-south baseline along the west cemetery wall.

Level 1 of this excavation unit began at the surface with a thin layer of rough cement and gravel as a remnant of modern cemetery wall construction. The level extended down to include a dark sand matrix with the top of one of the wooden posts protruding 10 cm above the bottom of the level. This level included a large quantity of small green copper fragments. Artifacts found at this level included sherds of broken glass and fragments of faunal bone. Level 1 was terminated approximately 14 cm below ground surface with the natural soil change.

Level 2 extended for approximately 30 cm below Level 1 and consisted of a light colored sand matrix with a heavy content of brick and mortar fragments. Several bricks from the James Bartlett grave were found arranged in a L-formation with one line running west from the center and the other running south (Figure 2.5). The section of brick running south was found stacked in two layers of a single row, and the section running west was found collapsed. The post found in Level 1 extends down below Level 2. At the bottom of Level 2 the post was elevated 30 cm above ground surface. Artifacts found at this level include fragments of broken glass, fragments of faunal bone, a glass white heart bead, and an iron cannon ball that was slightly fragmented possibly resulting from impact. Level 2 ended at the bottom of the bricks which was approximately 45 cm below ground surface.

Level 3 began with the removal of the bricks and extended down approximately 20 cm. XU23 contained Burials 4-9, Burial 5 and Burial 8 being the only ones entirely within XU23 while Burial 6 and Burial 7 are included in XU23 only from chest to the feet (Figure 2.3). Artifacts found at this level include an obsidian blade fragment found isolated from the

burials, 11 coconut shell buttons found in Burial 5 as well as 5 coconut shell button fragments also found in Burial 5. The right side of the head is the only portion of Burial 4 that enters XU23. All burials with the exception of Burial 4 were removed and Level 3 was terminated approximately 68 cm below ground surface.

XU24 Level 1 began at ground surface and included a dark sand matrix which extended down approximately 15 cm. A concentration of small green copper fragments was found at this level along with sherds of broken glass, brick, and mortar fragments. Other remains included a faunal rib, a copper bolt, marine vertebrae and other faunal bone fragments. Level 1 ended with a natural soil change.

Level 2 extended for approximately 40 cm and included a light colored sand matrix. This level included the excavation of a burial designated Burial 16, which was partially located in XU24. The lower legs and feet of Burial 16 extended outside of the east unit boundary. Fragments of rusted metal were found associated with this burial that are most likely the remains of coffin nails. No other evidence of the presence of a coffin was found associated with this burial as the wood was lost to decomposition as this is above the level of wood preservation observed throughout the Op. All other artifacts found at this level were not associated with Burial 16 and they including a pewter button belonging to the Fifth West Indian Regiment and a piece of slate. The button probably washed into this area from the military midden immediately to the west (Bentley et al. 2011). Level 2 ended directly below the burial approximately 55 cm below ground surface.

Level 3 included the matrix below Burial 16 and extended 10 cm below Level 2. This level included the same matrix composition as Level 2 and yielded no artifacts or

anything of cultural significance. Level 3 was terminated approximately 65 cm below ground surface.

XU25 was established directly west off the western boundary of XU23. Level 1 began at ground surface and included the same dark soil located elsewhere in Level 1. This level also contained small green copper fragments scattered throughout the unit as well as sherds of broken and china ceramics. A small quantity of faunal bone was found at this level as well as a clay pipe bowl. Level 1 ended with a definite soil change to a light-colored sand approximately 21 cm below ground surface.

Level 2 extended downward approximately 25 cm and included a wooden post. This post was located 70 cm inside the western unit boundary and 48 cm inside the northern unit boundary. The post was partially charred on the outside. The post was elevated 24 cm above the bottom of Level 2. The brick grave that ran in an east-west orientation in XU23 extended into XU25. This brick was found collapsed and extended roughly 1 meter across the unit in an east-west orientation. At the bottom of Level 2 the top of a human skull was discovered along with an unassociated human long bone and a cattle bone. The skull was part of Burial 7 that extends down into Level 3. Artifacts found at Level 2 included a fragment of marble slab that was once part of a grave marker, as well as a lead Minnie ball and a .22 caliber brass shell (Figure 2.6). Level 2 ended at the bottom of the layer of bricks which was approximately 46 cm below ground surface.

Level 3 included the removal of the bricks and extended down approximately 20 cm. Near the surface of Level 3 a second wooden post was discovered in XU25. This post was located 65 cm inside the southern boundary and 50 cm inside the western boundary of XU25. This second post was elevated 19 cm above the bottom of Level 3. XU25 contained the head

and chest region of Burial 6, Burial 7, Burial 9 and Burial 10. Artifacts found at this level include a lead musket ball which was not found to be associated with any of the burials, as well as 9 coconut shell buttons found in Burial 6 (Figure 2.6). All burials in Level 3 were removed and the level was terminated at the bottom of the burials which was approximately 68 cm below surface.

XU26 This unit was established directly east from the eastern boundary of XU24 in order to excavate Burial 16 in its entirety. Level 1 began at the surface and included a soil consistent with that elsewhere in Op. 1 and contained small green copper fragments as well as fragments of rusted metal, glass, ceramic, and faunal bone scattered throughout. Level 1 ended approximately 20 cm below surface.

Level 2 began with a natural soil change to a light-colored sand and extended for 30 cm to include the excavation and removal of Burial 16. Sherds of glass, ceramic, metal and faunal bone were recovered from Level 2 in the matrix above Burial 16. Fragments of metal that were the remains of coffin nails were found associated with Burial 16. XU26 included the lower legs and feet of Burial 16 as it ran outside of XU24 from the west. Level 2 ended at the bottom of the burial approximately 50 cm below surface.

Level 3 extended for approximately 16 cm to include the matrix beneath Burial 16. This level was void of cultural material and ended 66 cm below surface. Level 4 extended down 28 cm to include the excavation of Burial 17 in the eastern area of XU26. The burial began in the southeast corner of XU26 and extended outside of the eastern boundary. Artifacts found at this level include 26 coconut shell buttons and 1 fragment found associated with Burial 17. Level 4 produced no cultural material beyond Burial 17 and ended 94 cm below surface.

XU27 was established directly north of the northern wall of XU25. Level 1 began at ground surface and included a dark sand matrix that contained small green copper fragments spread throughout. Artifacts included sherds of glass and faunal bone. Level 1 ended approximately 21 cm below surface.

Level 2 continued for approximately 12 cm to include a light sand matrix consistent with that found elsewhere in Level 2 of Op.1. In the center of the unit an isolated human long bone was recovered. In addition, sherds of glass and ceramic were found throughout the level. While Level 2 continued as a cultural level, a soil change occurred approximately 33 cm below ground surface. Level 2b begins with this matrix change to dark gray compact sand with moderate clay content. This change occurred throughout Level 2 of XU27. Level 2b, includes the same Level 2 cultural zone as that in XU23, XU25, XU27, XU28, XU29, and XU30 but has been designated Level 2b to document the matrix change. This level included the excavation of a collapsed brick grave that included 5 bricks loosely oriented in two perpendicular lines. One line was composed of 2 bricks and ran east-to-west. The second line contained three bricks and joined at the east end of the east-west line and ran north-to-south. Artifacts found in Level 2b include fragments of sea turtle bone, fragments of human bone, three whole queen conch shells, sherds of glass, and a .32 caliber brass shell. Level 2b ended at the bottom of the brick box portion of the grave approximately 45 cm below surface.

Level 3 included a return to a light colored sand matrix and extended for 27 cm to include the level of the burials. This level included the excavation and removal of Burial 11, Burial 13, and Burial 14, all of which began in XU27 and extended outside the eastern boundary at the lower legs. A copper candel snuffer was found associated with Burial 13

(Figure 2.6). Candlesnuffers are a part of the death iconography of English colonies. On tombstones in the American colonies, skeletons representing death are sometimes depicted with candlesnuffers extinguishing the light of life. Two queen conch shells were found associated with Burial 11 within the boundaries of XU27. Level 3 ended at the bottom of the burials 72 cm below ground surface.

XU28 was established directly east of the eastern boundary of XU27 and north off the northern boundary of XU23. Level 1 began at ground surface and was composed of a dark sand matrix that included small green copper fragments scattered throughout. Sherds of glass and ceramic as well as fragments of faunal bone were found throughout the level. Level 1 ended approximately 17 cm below surface.

Level 2 began with a matrix change to light-colored sand and continued for 29 cm. Three bricks, no doubt part of a box grave, were found located midway along the western unit boundary. These bricks were located in close proximity to the brick configuration located in Level 2 of XU27. Sherds of glass and ceramic were found through this level as well as small fragments of rusted metal. Fragments of human bone were found throughout this level. Two brass buttons were also recovered. Level 2 ended at the bottom of the level of bricks at approximately 46 cm below surface.

Level 3 extended for 27 cm to include the same matrix composition as Level 2. Five burials were present in Level 3 of XU28. These include Burial 11, Burial 12, Burial 13, Burial 14, and Burial 15. The lower end of Burial 11 extends partially into XU28 and included one queen conch shell in association near the western boundary of XU28. Burial 12 was included in XU28 only from the skull to the knees. The lower legs and feet of Burial 12 extend outside of the eastern boundary of XU28. Because much of Burial 12 was not

included in XU28, the burial was not removed. The lower legs and feet of both Burial 13 and Burial 14 are the only portions of these burials that extend into XU28. Burial 15 was included in XU28 almost entirely except for portions of the feet which extended slightly into the eastern unit wall. Level 3 of XU28, including all burials within its boundaries, did not yield any artifacts.

XU29 was established directly south of the southern boundary of XU25. Level 1 of this excavation unit began at ground surface and included a dark sand matrix with high palm root content. Sherds of glass and ceramic as well as fragments of faunal bone were scattered throughout. Level 1 extended for approximately 24 cm below surface and ended.

Level 2 began with a matrix change to light-colored sand and extended for 23 cm. A vertical wooden post was found within this level and continued down below Level 2. This post was located 11 cm south of the northern unit boundary and 73 cm east of the western unit boundary. This post ran from the bottom of Level 2 up 19 cm. Sherds of glass were found throughout the level as well as fragments of human and faunal bone. Two buttons were also found in this level. One button was made of pewter and the other marine shell. No bricks were found in Level 2 of XU29 and it ended 47 cm below surface.

Level 3 extended down 24 cm to include the level of the burials. The matrix at this level remained consistent with that of Level 2. The post discovered in Level 2 did not extend down to the bottom of Level 3. However, a second post was found in Level 3 and extended to the bottom of the level. This second post was standing vertical and extended 23 cm from the bottom of Level 3. At this level XU29 contained three burials: Burial 1, Burial 2 and Burial 3. Burial 1 is included in XU29 from the skull to midway across the upper legs. Burial 1 was found with a lead heart-shaped coffin plate over the chest of the body (Figure

2.7). This coffin plate was found with rivets running through it along its edges. These rivets contained fragments of wood around them on the underside of the plate indicating that it was once attached to the top of the coffin which had decomposed. Burial 1 overlaps Burial 2 on its left side. The head of the both coffins found in Burial 2 and Burial 3 are within the boundary of XU29. The remainder of the two burials extends into XU30. An iron rivet was recovered in Level 3 of XU29 but was not associated with any burial. Level 3 ended 72 cm below ground surface.

XU30 This unit was established directly south of the southern boundary of XU23 and east of the eastern boundary of XU29. Level 1 began at ground surface and extended down to include a dark sand matrix. Fragments of faunal bone were found scattered throughout the level along with small fragments of rusted metal and sherds of glass. Level 1 ended approximately 16 cm below surface.

Level 2 began with a matrix change to light-colored sand with a high content of tree roots. Level 2 extended 7 cm down and included small fragments of rusted metal and glass scattered throughout. A wooden post was found at the bottom of this level and extends 3 cm above the bottom of Level 2. This post was located 50 cm east of the western unit boundary and 68 cm south of the northern unit boundary. As with Level 2 of XU27, in XU30 a similar soil change occurred that caused lower regions of Level 2 to be divided into sub-levels. Level 2 continues through Level 2b and Level 2c as part of the Level 2 cultural zone. Level 2 ended 23 cm below surface.

Level 2b began with a matrix change to dark compact sand similar to that found in Level 2b of XU27. This level extended down 15 cm to reveal a second post which rose 7 cm above the bottom of Level 2b. This second post was located 24 cm west of the eastern unit

boundary and 26 cm south of the northern unit boundary. The original post found in Level 2 of XU30 extends 18 cm above the bottom of Level 2b. Fragments of human and faunal bone as well as small sherds of broken glass were found scattered across this level. Level 2b ended approximately 38 cm below surface.

Level 2c extended down 12 cm and was characterized by a reappearance to the light-colored sand matrix that was present in Level 2. The post discovered in Level 2 and the second post discovered in Level 2b stood on-end at the bottom of Level 2c. The original post rose 30 cm and the second rose 19 cm from the bottom of Level 2c. Small fragments of human bone and sherds of glass were found within this level. A detached human skull was found isolated at the bottom of Level 2c with no other associated bones or cultural material. This skull was lying face down 44 cm from the southern unit boundary and 60 cm from the western unit boundary 49 cm below surface. Being that Burial 2 of Level 3 was found lacking a skull and overlapped by Burial 1, it is clear that Burial 2 predates Burial 1. During the excavation of sand in preparation of Burial 1, Burial 2 must have been disturbed and the skull removed. After the burial of the body in Burial 1, the skull from Burial 2 was included into the back dirt and buried in what is now Level 2c. Thus, we concluded the detached skull that we recovered at the bottom of Level 2c belongs to Burial 2. A single box-grave brick was located in the northwest corner of XU30. Level 2c ended at the bottom of the level of the brick at approximately 50 cm below surface.

Level 3 extended down 20 cm to include the level of the burials. This level included parts of Burial 1, Burial 2, Burial 3, and Burial 4. The two posts located in Level 2, 2b and 2c did not extend to the bottom of Level 3. The lower portion of Burial 1 including half of the upper legs down to the feet were present in XU30. Burial 2 and Burial 3 are included

almost entirely within the boundaries of XU30 except for the top of the head of each coffin which both run west into XU29. The left side of the head of Burial 4 lies within the boundaries of XU30. A silver Spanish Real was found stuck to the skull of Burial 3 (Figure 2.8). This coin was found with a scrap of fabric in between it and the skull. In many parts of the world a coin is placed in the mouth of the dead or near the head as payment to Charon the ferryman in Greek mythology who provides boat passage for the recently deceased to the realm of the dead. Level 3 ended below the burials at 70 cm below surface.

XU31 This unit was established directly east of the western boundary of XU26 in order to fully excavate Burial 17. Level 1 began at ground surface and included a dark sand matrix. Fragments of faunal bone, sherds of glass and ceramic, and small green fragments of copper were located throughout the level. Level 1 ended 23 cm below surface.

Level 2 began with a matrix change to light colored sand and extended for 24 cm. This level included fragments of faunal bone and sherds of broken glass spread throughout. Level 2 ended 47 cm below surface.

Level 3 extended for 21 cm and was composed of a matrix consistent with that of Level 2. This level included small fragments of faunal bone, small fragments of rusted metal, and sherds of broken glass. Level 3 ended 68 cm below surface.

Level 4 was made up of a matrix consistent with Level 2 and 3. Level 4 continued down 32 cm to include the excavation of Burial 17 from the pelvis to the feet. The remaining portion of Burial 17 was included in XU26. No artifacts were found within XU31 associated or unassociated with Burial 17. Level 4 ended below Burial 17 approximately 1.0 m below surface.

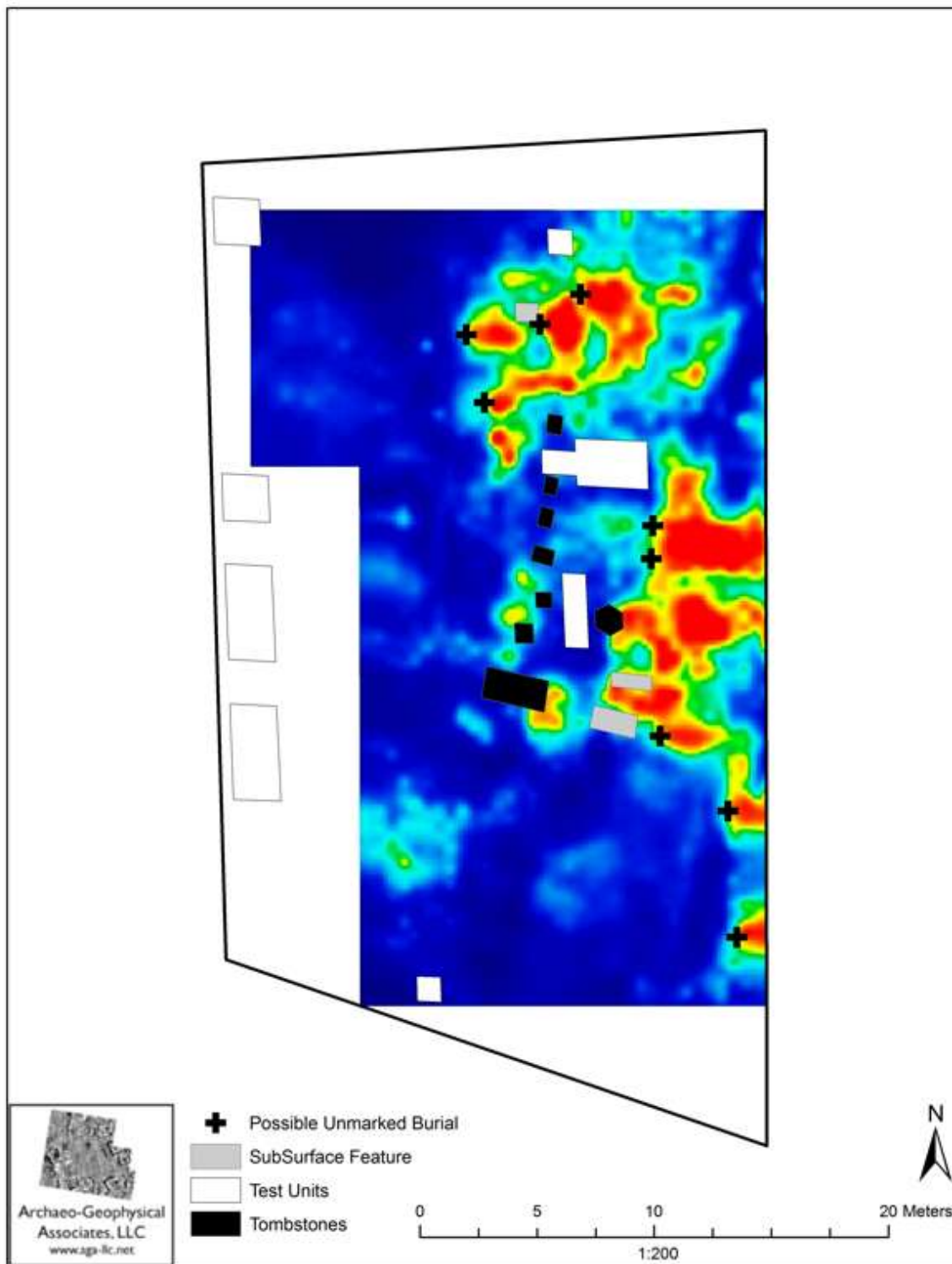


Figure 2.1. Ground Penetrating Radar (GPR) map of St. George's Caye Cemetery.

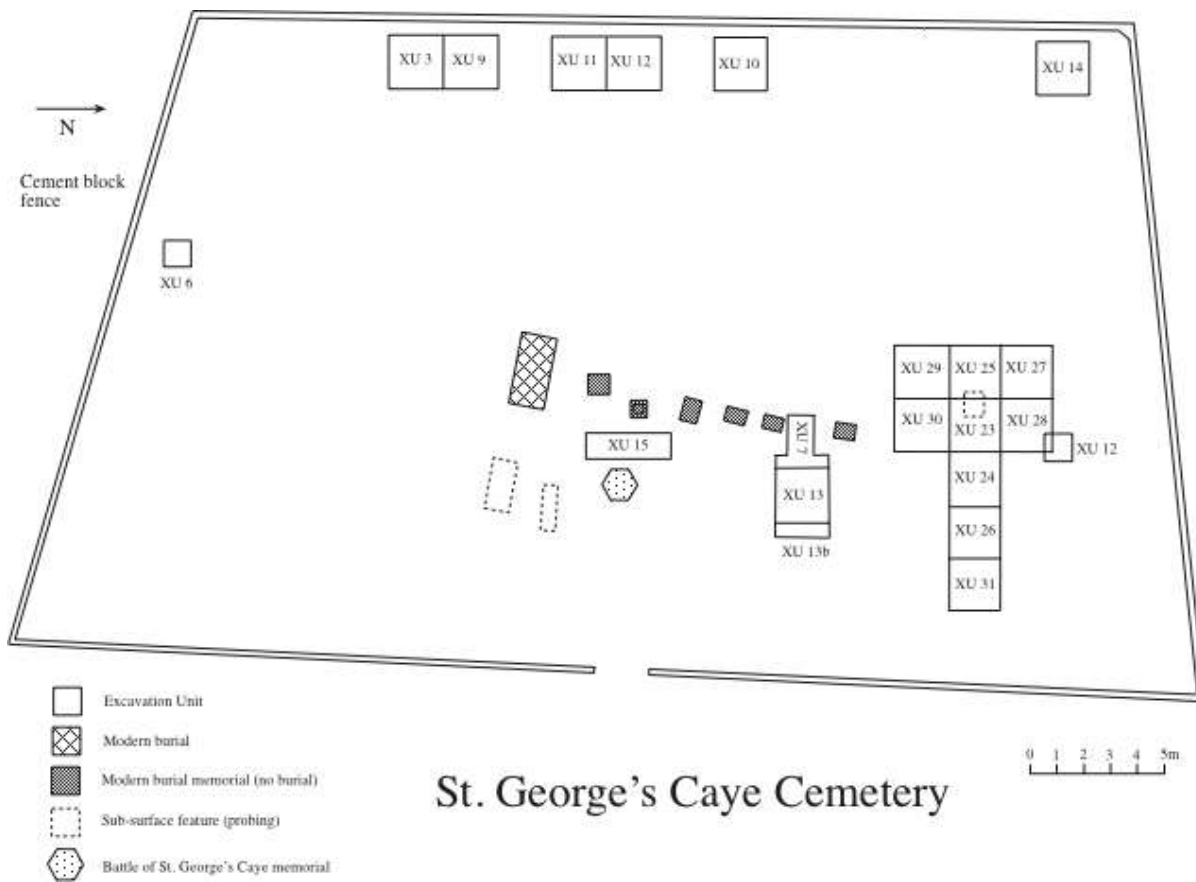


Figure 2.2. Plan map of St. George's Caye Cemetery showing locations of excavation units (XU) and surface features.

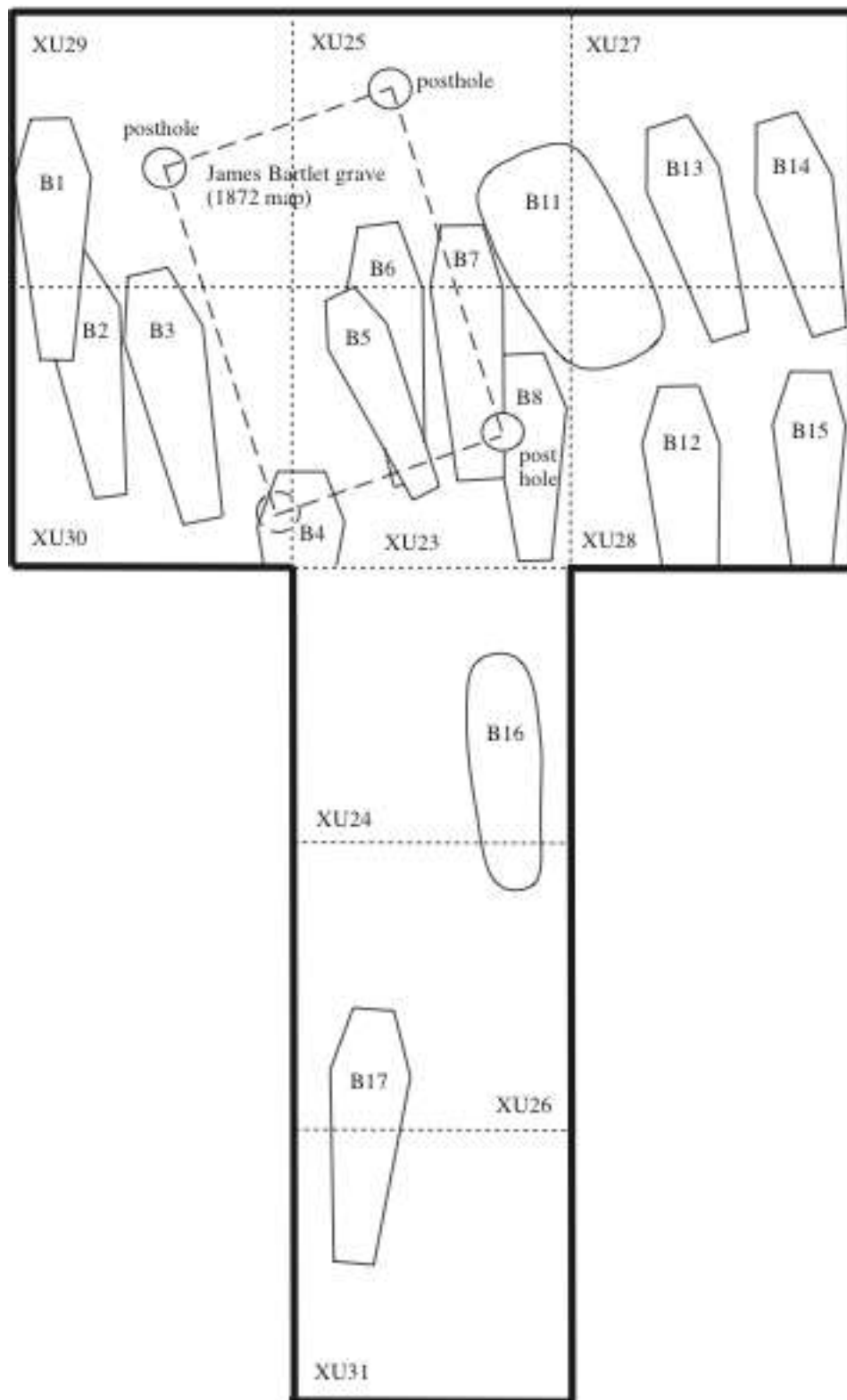
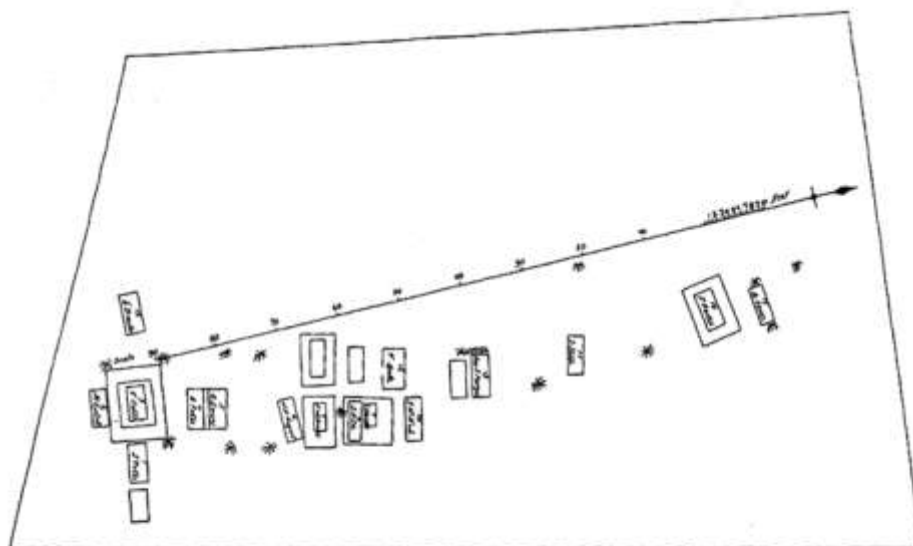


Figure 2.3. Plan map of burials recovered in the 2011 field season - St. George's Caye Cemetery.



*A Plan
of
The Cemetery at Saint Georges Caye.
Surveyed and Drawn on a scale of Six feet to an Inch, by
Robt Hume, Surveyor General
August 29th 1872.*

Figure 2.4. 1872 plan map of St. George's Caye Cemetery by Rob Hume.



Figure 2.5. Bricks and posts from James Bartlett grave.



Figure 2.6. Artifacts: top, coconut shell buttons; center left, lead musket ball and Minnie ball; center right; silver button 5th West Indian Regiment - Duke of York; bottom, copper candle snuffer.



Figure 2.7. Lead coffin plate from Burial 1:2011, St. George's Caye Cemetery.



Figure 2.8. Silver Spanish Real on skull of Burial 3:2011, St. George's Caye Cemetery.

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Bentley, J. Heath, James F. Garber, and Lauren A. Sullivan
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Chapter 3: Results of the Skeletal Analysis for the 2011 St. George's Caye Archaeological Field Season

Lauren Springs

The skeletal remains of individuals excavated from the cemetery at St. George's Caye were analyzed to estimate their biological profiles and provide preliminary baseline health and demographic data. A total number of eighteen individuals were excavated during 2011. The individuals recovered comprised what appeared to be fifteen discrete burials, two of which were subsequently discovered to be commingled and containing elements belonging to more than one individual. The remaining individuals were in single, unmarked graves and had no identifying artifacts associated with them. The only exception was in Burial 1, which had a partially legible coffin plate found in association with the burial.

Preservation and Taphonomy

Most of the burials were clearly articulated and major areas of the skeletons were visible during excavation. However, the extreme water-logged nature of the elements made it difficult to remove the bones from the ground and transport them to the lab. Many elements crumbled upon removal. Those most affected included the bones of the face, scapulae, ribs, vertebrae, sterna, innominates, and sacra. The long bones maintained the highest degree of integrity, although the articular surfaces were frequently damaged or destroyed during removal and transport to the lab. Because the water table had to be lowered each day to excavate the site, the burials were subjected to soaking at night and drying over the course of the day, which had a negative effect on the preservation of the bone. Other common taphonomic changes encountered included root damage and soil staining, as well as unintentional fracturing via excavation.

The effect of constant water submersion on the burials may have functioned as a preservative of organic matter. Of all burials excavated, only those reaching the lowest depth were found with organic coffin remnants. In each case, only the bases and portions of the sidewalls of the coffins remained. It is likely that the organic materials situated above the absolute lowest height of the water table were subjected to accelerated decay rates resulting from constant wetting and drying over an extended period of time. Those that remained completely submerged appear to have been afforded additional protection from the decay process.

Age of the Burials

Three posts were identified in XUs 23, 25, and 29 and are believed to represent the corners of a burial present on the 1872 map drawn by Rob Hume. Loose brick was found in the sand between the posts at a depth just superior to the level of the 2011 burials. The placement of the three posts closely correspond to the two western corners and the northeastern corner of the then above ground burial of James Bartlet, which is dated to 1800 by the memorial epitaph on his grave (Usher 1907). Accordingly, the burials, all of which were located inferiorly to that of James Bartlet's grave, were estimated as being interred prior to 1800.

The mortuary style of the burials excavated during the 2011 field season also indicated a pre-1800s age of the cemetery. The type of coffin that was used in the cemetery at St. George's Caye was wooden, hexagonal in shape, and showed very little evidence of adornments. This style of coffin is referred to as a "pinch toe" or "shoulder" coffin and remained popular until the Beautification of Death Movement of the nineteenth century (LeeDecker 2009). During the early to mid-nineteenth century, mortuary behavior in North

America and Europe change dramatically. The Beautification of Death Movement began in the late eighteenth and early nineteenth centuries and was marked by a cultural and material shift of attitudes towards the dead. Stylish grave markers, monuments, and coffins were popularized, as were elaborate epitaphs for individuals who had passed away (LeeDecker 2009). With the exception of Burial 1, the only hardware found in the graves excavated in 2011 included the plain, wooden coffins, held together by nails. Burial 1 had a heart-shaped metal coffin plate associated with it and may be representative of the beginning of a shift towards the Beautification of Death Movement.

The burial styles found in the 2011 excavations contrast with the cemetery descriptions, photographs, and the epitaph inscriptions recorded by Usher in 1907. These clearly demonstrated mortuary attitudes on the caye that correspond to a significant transition towards the Beautification of Death Movement. As opposed to being buried in wooden, hexagonal coffins, burial plots were composed of concrete, above-ground tombs that were topped with marble lids. The tops of the lids were etched with epitaphs including identifying information and often poetry or biblical verses (Usher 1907). The majority of these burials were dated to the nineteenth century and a few were dated to the last decade and a half of the eighteenth century. Because both the grave depth and style of the 2011 burials seem to predate the previously located and described graves, the plots excavated during the 2011 season are estimated to be from the mid to late eighteenth century.

Burial Analyses

Burial position and orientations were described following the standards outlined in Sprague's *Burial Terminology: A Guide for Researchers* (2005). In total, eighteen individuals were excavated from fifteen burials. Only one individual, represented by a single

fibula in Burial 15, was too incomplete to be analyzed. Although age, sex, stature, and health were estimated skeletally, ancestry was inferred from multiple historical texts and it is believed that the cemetery contains mostly individuals of European descent.

Burial 1. Burial 1 was represented by 468 skeletal elements. Burial 1 was located on the southern edges of XUs 29 and 30. The base of the burial sat at a depth of approximately 70 cm below the ground surface. There were no wooden coffin remains associated with the burial. However, a heart-shaped metal coffin plate was found resting on the chest and crossed arms of the individual. The plate contains identifying information about the individual interred, including name, age, and dates of birth and death. The plate was heavily corroded and most of the etching was illegible. The only identifying information that was readable at the time of analysis was the probable age of the individual at their time of death. The inscription “Aged (?)1” was legible, but it only provided the last digit of the age for the individual. The individual was extended on their back in the burial with their right arm crossed over their stomach and left arm at their side. The burial was oriented to the west and was facing the right. Skeletal analysis indicates that the individual was a young adult male, aged approximately 18-30 years old, and estimated to have been between 166.5 and 181.3 cm tall during his life. Based on the biological data available and the historic record provided by the coffin plate, it is likely that the individual was 21 years of age at the time of their death.

Burial 2. There are 274 skeletal elements associated with Burial 2. The base of Burial 2 was lying at approximately 75 cm below ground surface in XUs 29 and 30. The remains of a wooden coffin base were present. The upper right half of the individual was buried beneath the individual in Burial 1, which had to be completely cleared before full excavation of Burial 2 could be completed. The individual was oriented west and was

extended on their back with their arms at their sides. Burial 2 most likely belonged to a middle aged male, estimated as between 35 and 45 years of age at the time of death, with an estimated stature of between 151.0 and 171.2 cm tall. The skeletal analysis for Burial 2 did not include the skull found in close proximity to the burial.

Burial 3. Burial 3 is made up of 386 skeletal elements. Burial 3 was situated in the center of XU 30, just north of and at a slightly higher elevation than Burial 2. The partial remains of a wooden coffin were recovered underneath the skeleton, which was oriented west. The individual was in extended position with their arms at the sides and their head tilted back. A coin was found adhering to the cranium of the individual. It was located on the right frontal, about six mm lateral of the anterior sagittal landmark. The coin was removed and visually inspected. It is believed to be a Spanish Reale. Upon the removal of the coin, a thin layer a woven fabric was identified and is still adhering to the bone. The fabric has not been identified. Burial 3 included the remains of a male, aged 40-59 years old at time of death, with a stature of between 158.9 and 173.7 cm tall.

Burial 5. Burial 5 consists of 596 skeletal elements and was primarily located in XU 23, with the upper edges of the burial extending slightly into XUs 29, 30, and 25. It was overlaying the southeastern portion of Burial 6. Burial 5 sat at a maximum depth of approximately 60 cm. The skeleton was oriented west and in extended position on their back with their hands positioned over the pelvis. The individual was facing the right and there were no coffin remains found in association with the burial. The individual in Burial 5 was most likely an adult male between 24 and 75 years old, and between 159.8 and 179.6 cm tall.

The individual in Burial 5 had seven documented endocranial lesions on the left and right parietals. The smaller lesions were approximately 1 mm in diameter and cluster around

the interior sagittal suture. Four of the larger lesions were approximately 3-4 mm in diameter and were roughly circular in shape. One was located on the right parietal approximately 2 mm lateral of the midpoint on the sagittal suture. Two were on the left parietal approximately 4 mm lateral to the anterior sagittal landmark. There was a final large lesion located on the left half of the frontal bone, about 30 mm superior to the most medial aspect of the left eye orbit. The defects were smooth-edged and did not extend through the exterior surface of the crania. Their morphology is consistent with that of pacchionian pits, which are very common and become more prevalent with increased age (Mann and Hunt 2005). The pits are formed by the erosion of the endocranial vault by arachnoid granulations, and have not been significantly linked to any adverse health conditions.

Burial 6. Burial 6 is made up of 425 skeletal elements. The base of Burial 6 was at a depth of approximately 70 cm below the ground surface. The majority of the burial was in XU 23, with only the easternmost portion extending into XU25. The skeleton was situated on top of a wooden coffin base in extended position and on their back. The individual was oriented to the west with their head tilted back and arms resting on the pelvis. The bottom right portion of the burial was overlaid by Burial 5. This individual was estimated as a male, aged 25 to 39 years old, and standing 157.6 to 177.6 cm.

Schmorl's nodes and slight vertebral lipping were seen on four of the vertebrae recovered from Burial 6. Schmorl's nodes are identified as variously shaped and sized depressions on the surfaces of vertebral bodies (Waldron 2009). They are fairly common and are most likely to be found in the lower thoracic and lumbar vertebrae. The presence of Schmorl's nodes increases with age and they may also be linked to the application of stress to

the lower spine as a result of heavy lifting or strenuous and habitual activities (Mann and Hunt 2005; Waldron 2009).

Vertebral lipping is commonly associated with osteoarthritis, which occurs commonly in the spine with advancing age or the presence of applied physical stress (Ortner 2003). Because the age of the individual in Burial 6 is estimated as a younger to middle adult, the presence of the previously described pathologies is consistent with that of physical stress to the lower spine and not advancing age.

Burial 7. Represented in Burial 7 are 460 skeletal elements. Burial 7 was situated parallel to Burial 6, in the center of XUs 23 and 25. The maximum depth of the burial was approximately 52 cm and there were no coffin remains associated with the burial. A wooden post had been driven into the burial at the position of the left lower leg, which was not recovered. The extended burial was oriented to the west, facing right, and with the arms at the sides. Burial 7 was estimated to contain the remains of a subadult, aged 11-18, with a stature of 151.5 to 167.9 cm.

There was a slight, smooth-edged depression superior to the right eye orbit on the frontal bone of the individual in Burial 7. The defect was not penetrating but was visible both endo- and ectocranially. On the ectocranial aspect, the defect was roughly circular and had an uneven, undulating surface. The endocranial view of the defect was crescent-shaped and also had a slightly uneven surface. There was a second defect just lateral to lambda along the lambdoidal suture on the right parietal. The lesion was circular in shape and the base was slightly pitted. The edges and base were smooth, and while it was not penetrating, the depth of the pit at its base nearly reached the endocranial surface.

It is unknown whether or not the two defects are related to one another. The frontal defect had the overall appearance of a healed compression fracture and the morphology of the parietal lesion was consistent with that of a lytic lesion. Mann and Hunt (2005) note that characteristic “pond”-like compression fractures that are often found on the skull are commonly indistinguishable from healed infectious lesions. While the frontal defect appeared to be consistent in morphology with a healed compression fracture, it could also represent a lytic lesion similar to the one found on the right parietal but at a more progressive state of healing.

Burial 8. Burial 8 is comprised of 234 skeletal elements. Burial 8 was situated along the northern border of XU 23, slightly east of but parallel to Burial 7. The burial was overlaid on its north and south borders by Burials 7 and 9, at sat at a maximum depth of approximately 62 cm. The skeletal remains were enclosed by the base of a wooden coffin, they were laid out on their back in extended position, and oriented to the west. The individual contained in Burial 8 was estimated to be an adult aged 24 to 75 years at their time of death.

Six of the nine vertebral bodies recovered from Burial 8 displayed Schmorl’s nodes and vertebral lipping. When viewed in conjunction with the degree of mandibular resorption observed, the vertebral pathology likely indicates that the individual in Burial 8 had reached middle to older adult age status. Additionally, there was a mid-shaft defect observed on the lateral side of the right radius. The area was characterized by a large groove running approximately 13 mm down the side of the shaft. The groove ran a maximum of 7 mm wide and reached a depth of 1.5 mm. The bone along the surface of the defect was striated and

compact. The striations ran perpendicular to the length of the groove. This defect has not been linked to any known health or pathological processes.

Burials 9 and 10. There are 577 fragmented to complete skeletal elements associated with Burial 9 and Burial 10. Their commingled nature made it impossible to determine with certainty which fragmentary remains were associated with each burial and they were therefore counted together. The lower limb bones for Burials 9 and 10 were partially overlapping and upturned, also making a definite determination of which bone belonged to which individual impossible. All following analysis pairs limb bones with individuals based on the relative positioning and articulation of the elements. Lying along the northern edges of XUs 23 and 25 at a depth of 55 cm is Burial 9. Burial 9 was part of a group of three burials (9, 10, and 11), two of which were commingled with each other (Burials 9 and 10), and all of which were commingled with faunal assemblages. The faunal bones present included the long bones and pelvises of what is believed to be a bovid. The faunal elements were clustered near the cranial remains on the western borders of the burials. There were no coffin remains associated with the assemblage. The burials were oriented to the west, partially articulated, and had elements of the skeletons upturned in the graves. Burial 9 was in extended position but resting in the grave on their stomach. Burial 10 was lying at the intersection of XUs 23, 25, 27 and 28. It was parallel to and commingled with Burial 9. The maximum depth of the burial was 59 cm and there were no wooden coffin remains found in association with it.

Burial 9 was estimated to be a younger adult of at least twenty years of age at the time of death and sex estimation based on the cranium and sciatic notch yielded ambiguous results. The individual in Burial 9 displayed an unusual suture closure pattern. The sagittal

suture was completely obliterated and the lambdoidal sutures were near obliteration. The areas along the previously mentioned suture lines were depressed, resulting in a pronounced bulbous appearance of the cranial vault. In contrast to the sagittal and lambdoidal sutures, the coronal and metopic sutures remained completely open. While it is possible that the abnormal pattern of suture closure for this individual is pathological in nature, it could simply be a result of normal human variation.

The bones of the lower limbs were all bowed both medio-laterally and anterior-posteriorly, with the tibiae exhibiting a classic saber-shin appearance, as shown in Figure 7. The interosseous crests of the tibiae were oriented vertically in a straight superior to inferior line. There was significant woven bone formation at the anterior sites of bowing. The femora were cortically thicker and heavier at the sites of bowing than the remaining areas of the shaft. The femora also exhibited additional woven bone in their distal shafts. The right fibula exhibited two sites of possible periosteal infection where woven and porous bone growth and remodeling was marked. The postcranial traits were all consistent with changes seen to adult skeletons that had residual rickets as children (Brickley and Ives 2008). Additional differential diagnoses could include osteomalacia, Paget's disease, Blount's disease, trauma, infection, and childhood stress.

The individual in Burial 10 was estimated as an adult male between 24 and 75 years old and had an estimated stature of 149.7 to 165.1 cm. The central incisors of the maxillary teeth from Burial 10 each had circular defects with what appear to be radiating fractures. The edges of the defects were smooth and the left central incisor was missing the inferior aspect of the tooth just below the defect. Both defects penetrated the enamel and extended into the core of the tooth. A similar radiating fracture was present on the left lateral incisor

and the inferior margin of the tooth, which was well worn, appeared to mimic the morphology of the medial incisor's defects. The anterior and inferior halves of the incisors were significantly whiter than the superior portions and the lingual surfaces were covered with pitted hypoplasias. Much of the posterior mandibular dentition has been lost and the alveolus resorbed. On the left horizontal ramus, the alveolus tapered to a sharp ridge where the dentition once was. The right side remained broad and flat.

Burial 11. Burial 11 contained the remains of two individuals and was situated in the southeast corner of XU 27. The individuals present in Burial 11 are represented by 98 skeletal elements. The grave had a maximum depth of approximately 55 cm below the ground surface. While there was no evidence of a coffin in Burial 11, five whole conch shells were found placed in a straight line, extending east from the location of the cranial remains. One of the conch shells that appeared to be associated with the burial was found in the southwest corner of XU 28.

Cranium 1 from Burial 11 was estimated as a male between 24 and 75 years old. Cranium 2 most likely belonged to an adult female. While it is clear that the innominate found in Burial 11 belonged to an adult, the fragmentary nature of the pelvic remains made it impossible to confidently estimate sex.

Burial 13. Burial 13 is made up of 385 skeletal elements. Burial 13 was located near the center of XU 27 and extended slightly into the western margins of XU 28. The skeletal remains were in extended position inside the base of a wooden coffin at a maximum depth of approximately 62 cm below the ground surface. The individual was oriented to the west, facing left, and lying on their back with their right arm at their side and left arm resting on

their pelvis. The individual in this burial was estimated to be a female, between the ages of 28 and 49 years old, with an estimated stature ranging between 157.7 and 175.2 cm.

The individual in Burial 13 had lost the majority of their posterior mandibular dentition antemortem. The left side of the resorbed alveolus exhibited a very clear, sharp ridge where the sockets for the dentition would be. The right side, although resorbed, did not display a ridged alveolus.

Burial 14. Parallel to Burial 13 and at a maximum depth of 60 cm was Burial 14. The skeletal elements associated with Burial 14 number 650. It extended from the eastern half of XU 27 into the western half of XU 28. The skeletal remains were in extended position on their back and there were no remnants of a coffin found in the grave. The burial was oriented to the west and facing left. The individual's right arm was crossed over their pelvis and the left arm was at their side. The remains of Burial 14 were estimated to be those of a subadult, aged 11 to 18 years old at time of death.

Each humerus from Burial 14 had two linear and grooved defects on the anterior aspect of the proximal ends of the shafts. The defects ran roughly parallel to each other and were oriented lengthwise from the proximal to distal ends of the bone. The defects on the right humerus were approximately 4.5 mm wide and 3 mm deep. They varied in length with the longest running 40 mm long and the shorter only 35 mm. The defects of the left humerus were generally slighter than those of the right. One defect was 35 mm long, 3 mm wide and 1.5 mm deep. The other was 27 mm in length, 5 mm in width, and 2 mm deep. The bone surfaces in and around the grooves were irregular and porous with areas of plaque-like bone growth consistent with a non-specific bone infection (Roberts and Manchester 2005).

Burial 15. The individuals contained in Burial 15 were represented by 335 skeletal elements. Burial 15 was located at a maximum depth of 60 cm along the northern wall of XU 28. The burial remains were not enclosed in a coffin and represent three separate individuals. The individuals were all commingled and the bones were slightly scattered. At least two of the burials were oriented to the west and the third burial, which is represented by a single bone, was in an undetermined orientation and was likely displaced from its original context.

The first individual identified in Burial 15 was estimated as that of an adult, aged 40 to 44 years at their time of death. Individual 2 consists of the remains of a subadult with an estimated age and stature of 16 to 23 years old and 154.9 and 1801.3 cm tall, respectively. No skeletal analysis could be performed for Individual 3, who was represented solely by a fragmentary fibular shaft.

Burial 16. The individual in Burial 16 is represented by 603 skeletal elements. Burial 16 was found outside of the main burial concentration in XUs 24 and 26 at a maximum depth of 55 cm. The remains were located on the north edges of the unit and consist of an individual in extended position on their back, oriented to the west. The individual was facing left and had their right arm resting over their pelvis and left arm at their side. There were no coffin remnants or associated grave goods found in the burial. The individual in Burial 16 was estimated as an adult, aged 30 to 39 years old at time of death, with a stature of 164.5 to 181.1 cm.

Burial 17. Burial 17 is comprised of 332 skeletal elements. Burial 17 was also located away from the central mass of burials. It extended through XUs 26 and 31 at a maximum depth of 99 cm below the ground surface. The remains were oriented to the west

and appear to have been in extended position but have been moderately disturbed. The base of a wooden coffin was found underneath the individual. Burial 17 was estimated to belong to a male adult aged 30 to 46 years at the time of death, with an estimated stature of 162.3 to 177.0 cm tall.

Sex and Age Distributions

More males than females were excavated from the eighteenth century cemetery at St George's Caye as 47% (n=8) of the individuals in the cemetery were estimated as male and 12% (n=2) were estimated to be female. Of those remaining, 12% (n=2) were sexually ambiguous, 12% (n=2) had too few diagnostic features from which to estimate sex, and 17% (n=3) were subadults. Despite the scarcity of females in the sample, it is possible that the sex distribution observed in the cemetery at St. George's Caye is consistent with the sex distribution of the eighteenth century living population at the caye. However, no documented demographic data or census records have been found from the Bay Settlement that could be used test this hypothesis. Alternatively, given that the initial excavations of the cemetery grounds only covered a very small portion of the total area, it is possible that future excavations will expose more female internments and possibly function to even out the sex ratio of the sample.

Where able, individuals from St. George's Caye were grouped into one or more age classes of subadult (<20 years), young adult (20-34 years), middle adult (35-49 years), and older adult (>50 years). Of the individuals assigned to a specific age group, 27% (n=3) were subadults, 64% (n=7) were younger to middle aged adults, and only 9% (n=1) were middle to older aged adults. Six additional individuals were estimated as adults, but with no clear age group. Again, while the younger age distribution observed in the cemetery at St. George's

Caye could be an accurate reflection of the population at the time, without demographic and census records the relationship remains unclear. It is possible that the relative isolation of the community at St. George's Caye may have acted as an impediment to general healthcare, which could significantly decrease life expectancies. However, there was not a significant presence of disease markers or poor health characteristics detected on the skeletons excavated. In addition, it is possible that due to the small size of the sample the true age distributions of the population are not being accurately represented.

Stature

Significant differences in the statures of biologically similar groups can indicate health disparities between the populations. The total number of individuals from St. George's Caye for which stature could be estimated was twelve. Of those, three were estimated as subadults, seven as adult males, one as an adult female, and one as an adult of ambiguous sex. Average stature for male adults was calculated. The three subadults and one ambiguously sexed adult were excluded from this analysis. The lowest and highest values obtained for a male stature interval were 144.1 and 181.3 cm, respectively. The average stature for the male group (n=7) is 165.3 cm, with a prediction interval of 8.7 cm. An average for the female sample could not be estimated due to the small sample size (n=1). However, it is noted that the single female stature estimate is 166.4 cm with a prediction interval of 8.8 cm, and is very similar to the male average. The average stature and long bone length data for the sample at St. George's Caye was compared to contemporaneous groups of similar ancestry as a means to test for health disparities. The St. George's Caye group was not significantly different from any of the eighteenth and nineteenth century British or American samples it was compared against. Therefore, there is no evidence

indicating that the population in Belize was experiencing a different level of health than similar groups at the time.

Dental Health

Of the individuals with dentition present, 64% exhibited parallel grooved striations or pits on their anterior dentition consistent with enamel hypoplasia. Enamel hypoplasias are disruptions in the formation of dental enamel resulting from an insult or stressor sufficient enough to arrest ameloblastic processes (Aufderheide and Rodriguez-Martin 1998). Another 86% of the individuals had visible caries, with the lesions ranging in size from small (<1 mm wide) to large (covering an entire side of the crown). Eighty-six percent had calculus deposits built up on their enamel or root surfaces. Alveolar resorption was present in 75% of the individuals and another 69% displayed visible antemortem tooth loss. Dental statistics reported for this sample reports the occurrences of particular pathologies per individual analyzed, not per tooth analyzed. Because the pathologies are not reported based on their occurrence per tooth and most individuals were missing data due to postmortem loss of dentition, the results presented are most likely an underrepresentation of the total occurrence of the pathologies.

One individual (Burial 3) had a buccal abscess in the socket of the mandibular right first molar. Localized alveolar porosity was evident on the maxilla of Burial 10, and calculus build up was noted on the root of the maxillary right third premolar of Burial 16. Almost 80% of the individuals represented exhibited varying degrees of wear to the occlusal surfaces of their teeth. Across the population, wear was significantly more marked on the anterior than on the posterior dentition.

Overall, the prevalence of the common dental pathologies observed in the St. George's Caye sample is consistent with those that were observed in contemporaneous British samples, which indicates that they were very similar with regards to their dental health.

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