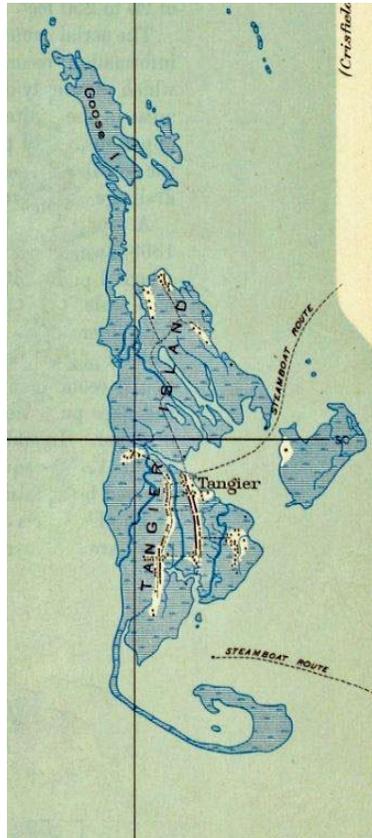


**THE RECOVERY OF HUMAN BURIALS
FROM THE UPPARDS CEMETERY (44AC0571):
TANGIER ISLAND, ACCOMACK COUNTY, VIRGINIA**



**Michael B. Barber, David K. Hazzard, Joanna Wilson Green, Thomas Klatka,
Katherine Ridgway, and Rebecca Bowman**

Virginia Department of Historic Resources

January 2015

Introduction

In late 2012, a television news show and a newspaper article depicted a Tangier Island resident, Ms. Carole Moore, on a beach on the island standing above a human skeleton eroding into the Chesapeake Bay (Image 1). As the Governor's Office was concerned with the island's erosion problems and DHR was considering Tangier for a National Register nomination, the washing away of the burial and cemetery called for some action on DHR's part. Mike Barber, State Archaeologist and Dave Hazzard, then Tidewater Regional Archaeologist, hired a boat and headed for the island on December 4, 2012. If truth be known, both Barber and Hazzard feared that the trip might be their last. The Bay was rough, the boat small, and the boatsman, while



Image 1. Uppards Cemetery (44AC0571), Accomack County, Virginia: Eroding Burial #1, December 4, 2012.

skilled, was in a hurry to complete the foray and get off the bay as he said the day was dangerous. Good start. They arrived at what they soon learned was the Uppards, met Ms. Moore, evaluated the burial, and made plans to return and salvage the remains.

Barber and Hazzard returned to Tangier on December 17, spent 3 days there, attended the Tangiers Christmas parade, excavated the female skeleton, and returned to Richmond. The process was complicated by the tides which allowed only a 3 hour work window. On the morning of the 19th, it was noted that 3 more burials were exposed adjacent to the first and plans were made to come back with a larger team to continue the cemetery removal (Image 2). A team of 4 (Barber, Hazzard, Joanna Wilson Green, and Tom Klatka) returned on April 1, 2013, and spent 4 days removing 4 more burials.



Image 2. Uppards Cemetery (44AC0571): Interface of 4 Burials, December 4, 2012

Background

Tangier Island is found in the middle of the Chesapeake Bay, the largest estuary in the United States providing drainage to numerous rivers including the Susquehanna, Potomac, Patuxent, Rappahannock, York, and James. Due to Pleistocene glaciations, sea level was at its lowest ebb was 100 meters lower than today and the Susquehanna River extended to the edge of the Continental shelf (Image 3). As the glaciers melted at the onset of the Holocene, sea level rose

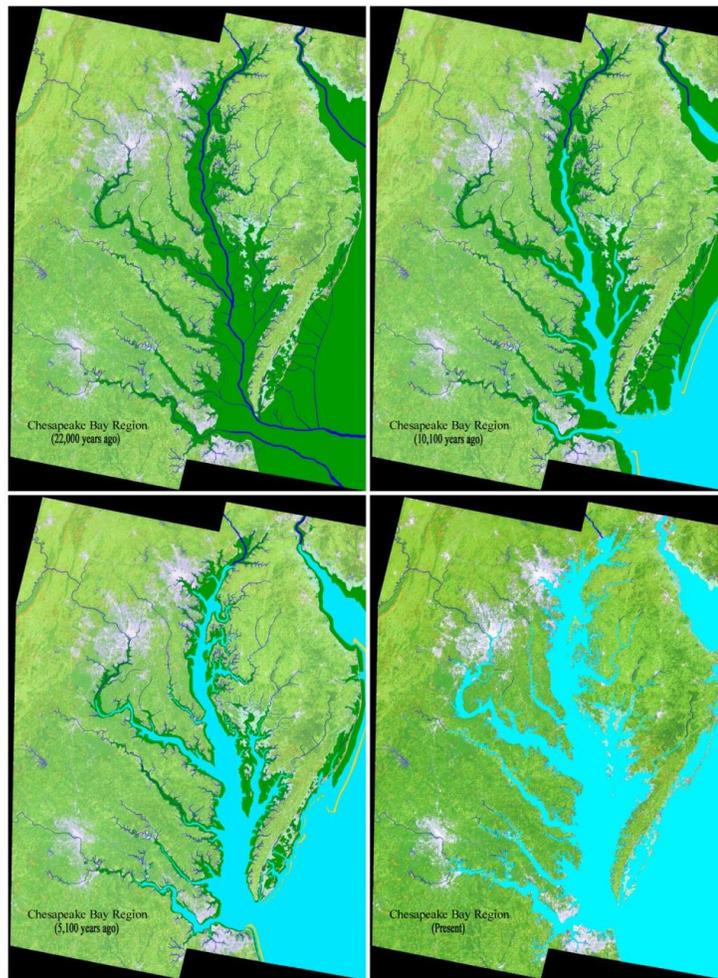


Image 3. Chesapeake Bay Evolution from ca. 22,000 BP to Present (green denotes land) (Courtesy of Darrin Lowery as per Virginia Archaeology Month Poster 2014)

inundating most of the Chesapeake bay basin, leaving many small isolated islands including Tangier Island (USGS 1998, Richards and Cooke 2003:3). Sea level rise continues and accelerates due to human agency, coupled with land subsidence, Tangier is further threatened by rising waters.

The first Europeans to visit Tangier Island were the Jamestown explorers of Captain John Smith and 14 others who were seeking, in a general sense, mineral and fur riches, the Pacific Ocean, and defensible places for settlement, and, in a particular sense, potable water. Setting sail from Jamestown on June 2, 1608, three days later, the expedition found itself on the islands of Tangier and Watts, which Smith named the Russell Islands after the accompanying doctor, searching for drinking water. None was to be had on the islands and their stay was short-lived (Mariner 1999:10; Rountree *et. al.* 2007:83; Thompson 2007:44). Little noteworthy occurred on Tangier through the 17th and most of the 18th centuries with exception of livestock grazing (Mariner 1999:11).

The first permanent settlers to Tangier were Joseph Crockett, his wife Sally, and their 10 children in 1778 (Hall 1931: 10) and the family, by 1800, made up 40 of the island's 89 residents (Walker 1874:159-160) or 33 of 79 according to Shores (2000:71). As settlement on the island continued, the slightly higher elevated ridges formed the backbone of housing and commerce (Richards and Cook 2003:14). These were Canaan, Oyster Creek, Main Ridge, West Ridge, Canton, and East Point with an economy supported by cattle raising and farming. During the Revolution, Tangier was raided not only by the British and Americans but also by "picaroons," local pirate bands of either side (Mariner 1999:15). Both British and American forces congregated their ship in the vicinity of Tangier Island (McManemin 1984) and the Royal Navy

kept its ships in proximity to attack the eastern shores of Maryland and Virginia (Council of Maryland 1783).

Shortly after the Revolutionary War came the invasion by the Methodist Church. Joshua Thomas, “The Parson of the Islands,” was converted in 1808 at a camp meeting in Anamessex, Maryland (Wallace 1870 by Hall 1939: 16). Thomas established his camp meeting grove at the southern end of Tangier Island. Thomas’s church camp became the center of operations for the British during the War of 1812 and their attacks on Baltimore (Hall 1939:18; Shores 2000:57). Establishing Fort Albion on Tangier’s protected south shore, the British troops there numbered 1200 (Hall 1939:18). In addition, several hundred Negroes were brought to Albion and trained in the firing of muskets (Flournoy 1892:333, 337; Watts and Broadwater 2014:12). Recent magnetometer and sidescan sonar data suggest that the presence of submerged features associated with Fort Albion may still exist and should be assessed by diving (Watts and Broadwater 2014:20).

After the War of 1812, the church camps continued as did the island’s agricultural base. However, in the 1820s, oyster harvesting began to accelerate reaching an apex when the railroad reached Crisfield in 1860s. The Civil War came and went with limited impact although the Union aligned Tangier residents did see an increase in smuggling due to their isolated locale (Richards and Cooke 2006:15). The railroad in Crisfield coupled with the steam-canning process brought increased prosperity to Tangier as oysters could now be shipped on a nation-wide basis.

The Site

The Upwards Site (44AC0571), Accomack County, Virginia, is located at the northern end of Tangier Island. Connected by road to the rest of the island until the 1920s, it is now

isolated and abandoned. Through the late 18th and into the first quarter of the 20th century, the settlement of Canaan occupied the slightly higher elevation of 2 L-shaped ridges which as now known as the Uppards. An 1897 map shows the two sand ridges with 5 houses on the western ridge and 8 and 3 structures on the eastern ridge broken by marsh in center (Image 4). There is also one structure further to the southeast. Hall (1939:35) indicated that Canaan had its own store, schoolhouse, and a Sunday school. A class was also found there which was a fundamental unit of the early Methodist society which providing inspiration to a group of 12 or more people led by a lay person. The land was well elevated, drinking water was ample provided by wells, soils were fertile, and landing facilities convenient. The site was also close to good crabbing grounds which saved travel time (ibid.).

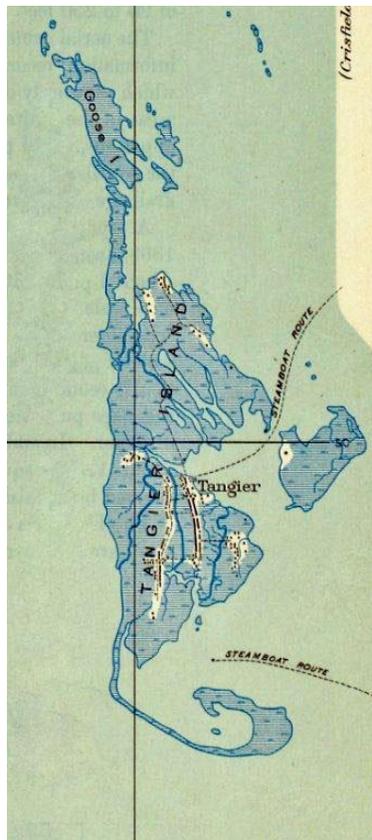


Image 4. Uppards Cemetery (44AC751) Ewell Map of 1876 with Canaan at North End of Island.

The demise of Canaan began in 1905 when a large schoolhouse was built on Main Ridge which Canaan children attended. As the road connecting Canaan to the rest of the island fell into disrepair, the children had to travel to school by boat. Access to medical care became difficult and a number of family moved to the main settlement. The last left in 1928 with many taking their houses with them either by barge or by rolling them on timber over the marsh. The remaining community of Tangiers prospered, turned from oystering to crabbing and by the turn of the 20th century, the island population numbered 1024 and one of the largest communities on the Eastern Shore (Ross 2002:3; Richards 2003:15).

Research Design

As Pearson (1999:198) states, “When we venture to disturb the dead, archaeology requires both meticulous excavation and recording and also sensitive handling and dignified treatment to accommodate the feelings of the living.” He goes on (ibid:199), “When excavating cemetery burials, excavation should be conducted in an atmosphere of respect and dignity.” The field excavation of the human skeletal remains followed these edicts through professionally accepted identification and methodological protocols (after Bass 1971, Brothwell 1972, Buikstra and Ubelaker 1994, and White 1991). The immediate project goal was cemetery removal prior to total destruction by Chesapeake Bay wave action. Based on informant data, several of the burials have already been claimed by the bay. Excavation will took place in 2 phases: first to remove the female burial #1 which was in imminent danger of complete erosion; second, was the removal an additional four as time permitted. The first burial was excavated in mid-December and the remainder removed in April (Image 5).

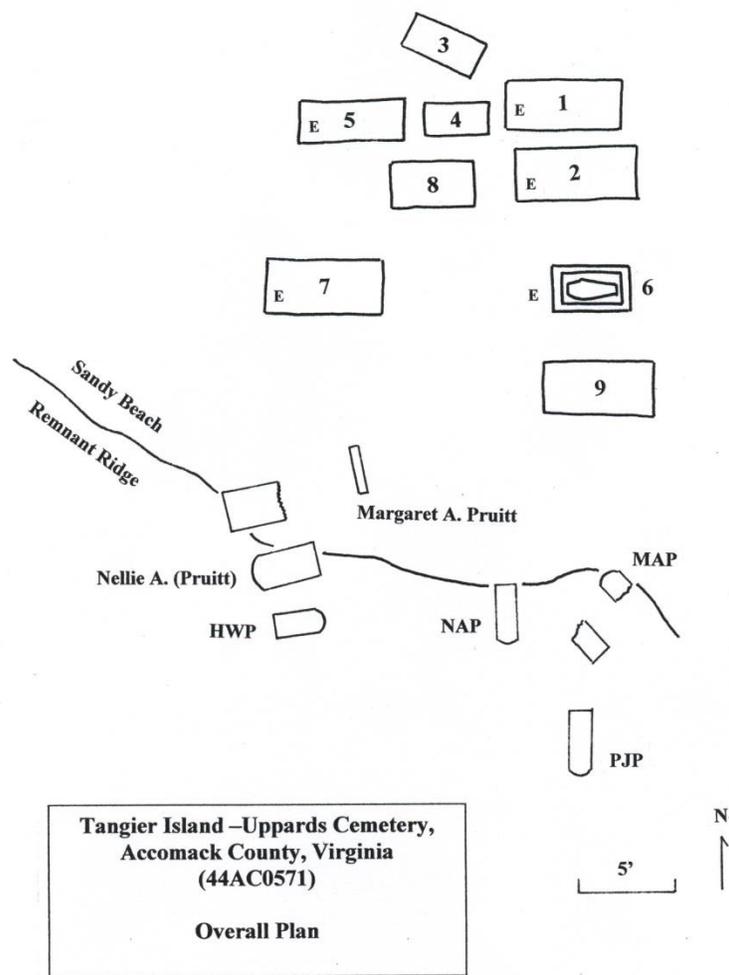


Image 5. Uppards Cemetery (44NH571), Accomack County, Virginia: Overall Plan View (numbers indicated burial number, E = excavated, gravestones are to south with names and initials indicative of stone markings, Bay tides coming from north).

Field methodology was adapted to fit the vagaries of the situation. The graves on the lower beach, Burial #1 being an example, were underwater as the tide rose providing a window of opportunity for just 3 hours per day. Excavation was timed by the tide. In addition, the graves on the upper beach were available for excavation for longer periods but filled with water as excavation continued. As excavated, graves would also fill with sand, oyster shell, and other

debris as the waves inundated them. Time was of the essence as the team had only a week to deal with the cemetery and this was cut short by an impending storm with a forced departure a day early. To maximize the excavation, compromises were made. The adopted goal was set to recover as many individuals as possible. Photographs were taken but detailed drawings were sacrificed for time. No screening was implemented with larger objects recovered as seen. Some block excavations did revealed added cultural nuances. With the goal set on skeletal recovery and the osteological analysis, the careful packing of bone occupied a high project priority. This proved time consuming but fundamental. In addition, breaks were non-existent as any time spent away from the excavation was time lost to the tides.

An added problem not associated with many excavations was transportation. First was the selection and transport of equipment to the island. With a single store on Tangier and its focus on foodways, what was not carried over, was not available. In addition, access to the site had to be by boat on a daily basis. This also provided an upper limit to equipment and personal items. During the team effort in April, seven different boats were utilized.

With regard to human osteology, normal skeletal evaluation will be implemented including age and sex determination, racial affiliation, dental structure, pre-mortem and post-mortem modification, pathologies, and bone inventories for each individual. We further propose three additional studies, based upon the unique character of the cemetery and the population it contains. First, the burial population should be examined for any effects of genetic isolation. Tangier Island is made up of a very limited geographically area with limited access to other communities. It is possible that, like language and the debilitating Tangier Island Disease (limits good cholesterol), isolation has some translation in skeletal dynamics as well. Second, the overall effects of diet should be considered. With heavy reliance on seafood for subsistence,

high protein and low carbohydrates may have some effect on the chemical make-up of the bone. Such differences can be traced through stable isotopes analysis with the prediction that there will be significant increased carbon isotope ratios in collagen and apatite (Tykot 2004). Dr. Douglas Owsley of Smithsonian Institution, who has turned his studies to Chesapeake bioanthropology, has volunteered to implement the forensic analysis. Third, due to the small size of the cemetery and historic documentation, determination of the identities of some individuals may be possible.

The Uppards Cemetery can offer a research potential for intra-island lineal dynamics with the movement of people on the island through time. For example, in the 1920s, the community of Cannan could no longer exist due to sea level rise and frequent flooding. In abandonment, where did these families relocate? Did they settle in the town which contains the totality of Tangier Island population, surrounding islands, or the mainland. A fiercely independent population, did the displaced families settle with kin in Tangier? Local cemeteries would reflect this change.

The Uppards Cemetery also offers comparative study potential at the regional level. These studies have proven successful with regard to prehistoric populations (Gold 2004), seventeenth century Colonials (Owsley, Bruwelheide, and Kardash 2001), and Civil War soldiers (Owsley, Hanna, and Burgess 2002; Owsley, Richardson, and Gailey 2002). The cemetery on Tangier Island presents an opportunity to compare the dynamics of a small island multiple family plot with patterns on the mainland and among other islands. One prime example for comparison would be Little, Lanphear, and Owsley's (1992) study of the Anglo-American cemetery in Manassas, Virginia, where the competition for status was seen in a diachronic fashion related to cyclical change of cemetery rules and values. A portion of the study related to coffin hardware and headstones, a technique which may be applicable at Tangier. Other aspect of cultural

systems can be viewed as well such as trading networks tied to the importation of tombstones, coffin design, and the local translation of the Victorian values of the day.

A final consideration with regard to the human skeletal material was the problem of slat removal. As the bones had been inundated by the bay's salt water, much sodium had been absorbed by the skeletons. As cracking and deterioration would occur during the normal drying procedures, it was necessary to immerse the bones in de-ionized water for long periods. These protocols are discussed under conservation.

Gravestones

Gravestones are placed above the interment of an individual as both a marker of where that individual's body has been interred but also as a point of return for the living where can connect with the deceased individual. By the end of the nineteenth century, markers were of stone and even in isolated areas such as Tangier Island spoke to the Victorian culture of the day, albeit somewhat muted. Seven disturbed marble stones were noted at the Canaan Cemetery: three headstones with inscriptions and four foot stones with initials (Images 6 & 7). Identified individuals included Carlton Bowden who was born August 19, 1898 and died in 1901 at the age of three. Margaret A. Pruitt was born in 1836 and died in 1901, aged 65, and Nellie A. Pruitt born in 1893 and died in 1895 at age two (Image 8).

The most haunting stone was that of a two year old with the following inscription:

Nellie A.
Beloved Daughter of S.E. and Eva I. Pruitt
Born March 10, 1893
Died January 23, 1895
*Oh yes we're coming to meet you
When the sorrows of life will be o'er
We'll find you our darling Nellie
Where you'll never be sick anymore*

The upper portion of the stone depicts the unflowering bud icon which denotes a life which was unable to blossom. There is a high possibility that Burial #6 is that of Nellie A. Pruitt.



Image 6. Canaan Cemetery (44AC0571) Gravestones on Beach in Random Distribution caused by Tide and Humans.



Image 7. Uppards Cemetery (44AC0751) All Gravestones Arranged on Beach.



Image 8. Uppards Cemetery (44AC571) Gravestone of Nellie A. Pruitt.

Although a part of the inscription on the Margaret A. Pruitt stone is lost to erosion and break, it remains of interest:

MARGARET A. PRUITT
BORN
Apr. 2, 1836
Died Dec. 2, 1901
*Dear wife you have gone
From earth and it's xxxxx xx xxxxx
No one knew thy suffering and pain
But thee and God alone
And must we forever part:
No we shall meet again,
In that bright world where all is love
xxxxxxxxxx*

The upper portion of the Margaret A. Pruitt stone is carved with the open book motif indicative of religiosity and the deceased dedication to the bible.

Excavation

Three visits were made to the Canaan Cemetery by DHR archaeologists: the reconnaissance visit on December 3, 2012; the excavation of Burial #1 on December 17-18, 2012; and the excavation of Burials #2, #5, #6, and #7 on April 1 – 4, 2013. Four others were noted but time do not allow for recovery. The first 2 visits were by Barber and Hazzard with the full team (Barber , Hazzard, Klatka, and Wilson) on the third visit.

Burial #1

Burial #1 was that of a female in the age in the mid-30s (Image 9). The head was facing the west as is the norm in western religions with the arms bent outward to the sides and upward at the elbow towards the head. The rectangular wooden coffin was still partially intact with sides and bottom remaining. Slats from the lid were also recovery leaving brown stains on the bones,

particularly the femurs and tibias (Image 10). The coffin lengths was ca. 6.0' and ca. 2.0' wide. A zinc plaque fragment, probably attached to the coffin lid were recovered in the pelvic area. The grave shaft itself was of a lighter-colored grey silty fill and was an added 0.50' longer than the coffin. The female interred showed evidence of childbirth but displayed no evidence of injury or disease. Just above the cranium were found two tortoise shell plastic back combs and black rubber hairpin. A copper ring was found on the right hand with a small colorless stone attached, probably a diamond. Shell buttons were also recovered from the burial.



Image 9. Uppards Cemetery (44AC0571): Burial #1 Skeleton Exposed.



Image 10. Uppards Cemetery (44AC571): Burial #1 Lid Slats In Place over Legs.

Burial #2

Burial #2 was that of an adult male in a relatively poor state of preservation (Image 11). Again the head was to the west but with arms extended downward to the sides. The rectangular wooden coffin appeared to be in the range of 6.0' in length. The shaft was ca. 7.0' in length and ca. 2.0' in width. The cranium had been heavily impacted by wave action. A zinc medallion was again found in the pelvic area and was likely a coffin lid accoutrement. Material culture of a personal nature was confined to one bone button.



Image 11. Uppards Cemetery (44AC571) Burial #2 Skeleton Exposed.

Burial #5

Burial #5 was that of an adult female with ca. 40% of the skeleton eroded away, particularly the cranium and lower legs and feet (Image 12). The head is to the west, arms downward and folded over the pelvis (although the left radius and ulna are missing). The burial shaft was roughly 2.0' but length could not be determined due to erosion. Above the cranium was found a tortoiseshell plastic back comb similar to that recovered from Burial #1. Clothing was represented by 23 dark green glass buttons, shell buttons, a white metal button, and preserved clothe. Coffin handles, coffin nails, and coffin wood fragments were also recovered.



Image 12. Uppards Cemetery (44AC0571) Burial #5 Skeleton Exposed.

Burial #6

Burial six was a child's burial in unusual circumstances (Image 13 - 15). The grave shaft was just over 4.0' in length and 2.0' in width. Within the shaft was a rectangular wooden coffin which measured 3.5' long by 1.25' in width. Within the box was a hexagonal coffin 3.0' in

length by 1.0' wide at the shoulder and ca. 0.67' (i.e. – 8") at the ends. Hence, the burial was the deceased placed in a hexagonal coffin placed in a rectangular wooden box placed in the grave shaft. In addition, the head was to the east, not the west as is traditional to view the second coming. Finally, the scapula, pelvis, humeri, and femora were out of anatomical place in a jumbled fashion. The skeleton was that of a toddler in the age range of 2 years based on an unfused mandible and unfused intervertebral disks. Nellie A. Pruitt was 2 years old at death.

One possible explanation for the Burial #6's movement of the bones out of anatomical context is found in *Beautiful Swimmers* (Warner 1976:250). Here, Warner references a Smith Island local describing the effects of Hurricane Hazel on the island just north of Tangier:

Course, it's true Hazel come over us, too, and all them coffins went adrift. You remember that, Stanley? But the people put on their boots and fetched the coffins back all right, they did. And you know the water didn't stay very long.

It is quite possible that an earlier similar event took place on Tangier Island as well. While the first three 20th century decades were relatively quiet, the Chesapeake-Potomac Hurricane of 1933 would be a candidate for such an event (Eastern Shore Mitigation Planning Committee 2005:2) where it was documented that "Tangier Island was inundated and children jumped from second story windows to swim. When the water receded parts of the island were gone (Mariner 1999)." A child's coffin would be interred at less depth than an adult's, would be much lighter, and, hence, more prone to float. If this were the case, after retrieval, it is hypothesized that the hexagonal coffin was placed in the rectangular wooden box or coffin as a privacy seal. Then, when interred, the orientation of the internal coffin had not been marked and deceased placed facing west, not east.



Image 13. Uppards Cemetery (44AC0571) Burial #6 Unexcavated Showing Shaft, Rectangular Coffin, and Hexagonal Coffin.



Image 14. Uppards Cemetery (44AC0571) Burial #6 with Excavation in Progress.



Image 15. Uppards Cemetery (44AC0571) Burial #6 Excavated Showing Disarticulated Elements.

Burial #7

Burial #7 was that of an adult female with head to the west and bent outward and hands resting on pelvis (Image 16). The skeleton was in relatively poor condition with the cranium partially missing, the left arm and shoulder eroded away, and the bones deteriorating. One board from the lid remained over the upper pelvis. The individual appeared to be of relatively high age as the lower jaw had no remaining teeth. No evidence of injury or disease was noted. Material culture associate with Burial #7 consisted of buttons of copper alloy, black plastic, shell, and white glass.



Image 16. Uppards Cemetery (44AC0571) Burial #7 Excavated.

Coffin Hardware and Personal Items

As indicated by the photographs included in this report, conditions at Uppards Cemetery were not conducive to recovery of items in situ. The presence of a large amount of flotsam and mechanical debris, erosion of the burials themselves, and heavy corrosion caused by exposure to salt water and air renders it nearly impossible to discriminate between coffin fastenings and random hardware. Much of the coffin materials and other items discussed in this section were recovered from the beach or from fill surrounding the identified burials, and as such the provenience of these items is indeterminate. Items definitively associated with individual burials are marked accordingly.

It is interesting to note that Tangier Island had its own coffin source, located in the J.E. Wallace Store that originally sat on the West Ridge of the island. Owner John Wallace (1855-1926) sold coffins as part of his larger inventory of merchandise and also served as the island's undertaker. It is not known whether Wallace imported entire coffins, or imported the components and constructed them on the island, but the use of multiple different types of fastenings as well as mass-produced commercial fittings and decorations is consistent with construction on demand. The site of the Wallace Store is now memorialized with an historic marker.

Coffin Fittings:

Funerary items recovered from the Uppards Cemetery, including handles and ornamental attachments of various kinds, are consistent with mass-produced commercial fittings available and commonly used in the late 19th and early 20th century. Such fittings were applied to the bodies of wooden coffins, and served both utilitarian (lifting, closing, etc.) and decorative functions. Types of fitting recovered from 44AC0571 are listed and discussed below.

Coffin handles: Handles and handle components were recovered from direct association with buried coffins and human remains and from the beach surrounding the identified burials. The coffins containing Burials 1, 2, 5, and 7 were fitted with double-lug short swing-bar handles. This type of handle is characterized by the presence of a straight bar-shaped grip attached at either end to stationary arms. The grips are finished at either end by ornamental finials. The handle itself is attached to the coffin with decorative lugs, from which the handles swing vertically. Adult coffins had between two and four handles per side. This particular handle was in most common use between 1880 and the early 20th century (Pye).

The decorative aspects of the handles and handle components recovered from the Uppards Cemetery burials and the surrounding beach represent several styles popular during the late 19th and early 20th centuries. All metal components are of white metal (likely a lead- or zinc-based alloy), while wood components appear to be oak. Four different styles of lug are present, including a shield-shaped lug with Art Deco-style borders, a squared lug with an Art Nouveau design and beaded border, a squared lug with a stylized floral design, and a squared lug with a rope border. Three different styles of finial were recovered from the Uppards Cemetery. All are dome-shaped, with the two simpler styles differentiated only by the presence or absence of a decorative boss at the tip. A third, more ornate style includes an embossed floral border. Two types of grip are present, including a simple, cylindrical dowel as well as a grip scribed to resemble braided rope. All of the above are consistent with the styles available in hardware catalogs produced by coffin manufacturers and foundries at the turn of the 20th century.

The single juvenile coffin (Burial 6) was fitted with double-lug swing bail handles, which is characterized by two decorative lugs attached to a semicircular, one-piece handle designed to swing vertically. This type of handle was used for both adult and juvenile coffins and was in most common use from the late 1870s through the early 1900s (Pye). The metal alloy used to form the handles recovered from Burial 6 was badly degraded by exposure to air and salt water, and only one lug was recovered. It is squared and contains a stylized floral design, and is also consistent with styles advertised in catalogs of the period.

Thumbscrews: These fittings are designed to both close and ornament the coffin. The earliest styles were helical screws with rounded or domed heads, first used ca. 1850s. The thumbscrews recovered from the Uppards Cemetery burials are a later form, consisting of a flat ornamental flange set upright atop the screw component, and were in common use between 1875 and 1910 (Pye, Mainfort and Davis). The Uppards Cemetery thumbscrews are of white metal and consist of square plaques supported on either side by stylized columns with finials. The screw components are missing in all cases. An exact match could not be found in available references, but similar styles are present in catalog offers from the last decade of the 19th century.

Caplifters: In common use from ca. 1880 through the end of the 19th century (Woodley). These fittings consist of a decorative finial on a helical screw, and were designed to provide a grip so that the coffin lid could be lifted for viewing. Caplifter designs range from simple knurled domes to ornate and gilded ornaments. One fragmentary caplifter was recovered from Burial 6. It is of the simpler dome style, with traces of gilding still present.

Studs: These fittings are purely ornamental in nature and consist of short pins with decorative heads or finials. They were used both to attach linings to the interior of the coffin and to beautify the exterior. Studs were often of base metal with gilding or a coating of silver, and were in use from the late 1870s through 1920 (Hacker-Norton and Trinkley). The only examples of studs recovered from the Uppards Cemetery were found in the interior of the hexagonal coffin associated with Burial 6. The studs take the form of six-pointed, terraced stars stamped from copper-alloy sheet metal.

Plaques or plates: As with studs, these fittings are entirely ornamental in nature and were usually attached to the middle or upper middle portion of the coffin lid. Plaques/plates could be simple or ornately molded and embossed, and were often inscribed with the name of the deceased or with a sentiment. Iron-alloy plaques/plates have been recovered from burials as early as 1850, while white metal plaques/plates are a later innovation (ca. 1880) (Woodley). White metal plaque fragments were recovered from Burials 2 and 6, and an iron-alloy fragment of what may be a plaque was recovered from the pelvic region of Burial 5.

Miscellaneous fasteners: A large number of corroded iron alloy fasteners (nails, screws, etc.) were recovered from both the beach and the fill above the graves. Certain items were recovered in direct association with human remains, however, including wood screws, cut and wire nails, and iron-alloy strap.

Personal Items:

Personal items recovered from the Uppards Cemetery interments are consistent with products and materials commonly available from the last quarter of the 19th century through the first quarter of the 20th century. Items recovered from the burials at 44AC0571 are discussed below.

Clothing: Burials 5, 6 and 7 contained fasteners of various forms and materials:

Buttons: 4-hole Prosser molded, white, hard-paste ceramic, in use post-1840

Buttons: 4-hole gutta percha or vulcanized rubber, black, friable, in use post-1850

Buttons: 2-hole shell, in use throughout the 19th and early 20th centuries

Buttons: white metal, flat, ring shank, in use throughout the 19th and early 20th centuries

Collar stud: bone, in use from the early 19th through the early 20th centuries

Jewelry: Burials 1, 5 and 6 contained elements of personal jewelry:

Ring: copper alloy with colorless stone, date unknown.

Beads: colorless glass, seed, in use from the early 19th century onward

Beads: colorless glass, barrel, in use post-1840 through end of 19th century

Beads: black glass, round, intended to mimic jet, in use in the very late 19th century

Faux “gem”: Green glass, faceted, mounted in a gilded, pronged base metal mount

Brooch: Hollow pressed metal bar (pin missing), common from mid-19th through mid-20th centuries

Hair ornaments: Burial 5 contained one tortoiseshell-patterned celluloid back comb (comb placed at the back of the cranium to hold a twisted hairstyle in place). Two similar combs and a tortoiseshell-patterned celluloid hairpin were recovered from the beach. Ornaments of this type were common from the mid-19th through the mid-20th centuries.

Straight pins: Burials 2, 5 and 6 contained fragments of copper-alloy straight pins. Such pins may represent fasteners for items of clothing, or may have held the edges of winding sheets closed.

Among the items recovered during conservation of the skeletal remains were what appear to be several examples of lead shot. For the most part these items were identified during laboratory excavation of block lifts of the upper and lower torsos of Burials 1, 2, 5, and 7. Two pieces of lead shot were also recovered during wet screening of Burial 6 coffin fill from beneath the coffin lid itself. The individual pieces of shot are of various sizes from 1.2 through 4 mm in diameter. Even assuming some variation in shot size due to manufacturing differences, a wide variety of shot diameters is represented in this assemblage. Most was recovered from soil collected from the midsections of the adult burials as well. Given the limited nature of non-marine food sources on the island, it is likely that the inhabitants of Uppards were likely exploiting available sea- and shorebirds as part of their diet, occasionally ingesting birdshot in the process. The considerable

difference in diameter may reflect time spent in the digestive system, the shot eroding gradually with exposure to digestive acids, or may simply be an artifact of different manufacturing processes.

Discussion of Items Recovered, by Burial

Burial 1: This burial consisted of a rectangular wood box containing the remains of an adult female. No fittings such as handles were recovered from this burial, although three heavily corroded cut nails were recovered during laboratory treatment of the remains and were likely used to fasten the coffin together. A portion of a white metal memorial plaque was recovered from above the pelvis. The plaque has scrolled edges with an arabesque pattern, and an oval window that likely held a photograph of the deceased.

Personal items recovered from Burial 1 include three 2-hole shell buttons, one tortoiseshell-patterned celluloid side comb, and one brown celluloid hair pin. A gilded copper-alloy ring with a colorless stone was recovered from the right hand, where corrosion had attached it to three phalanges. Miscellaneous items include one piece of lead shot, multiple ceramic sherds (glazed redware, glazed gray stoneware, and refined red stoneware) and one olive green wine bottle sherd.

Burial 2: This burial consisted of a rectangular wood box containing the fragmentary remains of an adult male. As most of the coffin had eroded away by the time recovery began, most coffin-related hardware had disappeared. A portion of one swing-bar handle finial and two partial flat-

head thumbscrews were recovered from the fill surrounding the burial. Two fragments of a white-metal memorial plaque were recovered from the midsection of the burial as well.

Personal items recovered from Burial 2 were limited, and include a single bone collar stud and three fragments of copper-alloy pin(s), which may have been used to fasten clothing items or a winding sheet. Miscellaneous items include four pieces of lead shot recovered from torso block lifts, and eight fragments of heavily corroded lead of unknown origin and utility.

Burial 5: This burial consisted of a rectangular wood coffin containing the partial remains of an adult female. The lower portion of the coffin, along with the lower legs and feet of the interred individual, was missing. The coffin was constructed with a combination of iron-alloy cut and wire nails, flat-headed wood screws, and dome-headed coffin screws. One relatively intact double-lug short swing-bar handle was found in situ at the upper right of the coffin, adjacent to the interred individual's right shoulder. Two fragments of an iron-alloy memorial plate were recovered from the pelvic area of the interment. A copper-alloy tack was recovered during wet-screening of the fill.

Personal items recovered from Burial 5 included a white metal button with ring shank, seven 2-hole shell buttons, an open copper-alloy ring with a stud on one side (possibly a jewelry fitting), 23 round, black glass beads, and 15 copper-alloy pin fragments. One tortoiseshell-patterned celluloid hair comb was recovered from below the cranium. Miscellaneous items include five pieces of lead shot recovered from torso block lifts.

Burial 6: This burial consisted of a rectangular wood box containing a hexagonal wood coffin, in turn containing the intact remains of a ca. 2-year-old child. The exterior coffin or container was constructed with wire nails and was devoid of other hardware or ornament. The hexagonal coffin inside was constructed with cut nails and other iron-alloy fasteners, most too corroded to identify, and was originally coated in white lead-based paint. When the overburden was removed the lid of the inner hexagonal coffin was found to be in situ, although it had been pressed down into the coffin itself, leaving the contents of the coffin intact.

The headboard and footboard of the hexagonal coffin were decorated with ornamental tacks with hollow, bell-shaped copper-alloy heads. Smaller but stylistically similar copper-alloy tacks were located at the top and bottom corners of the interior coffin. Two sets of double-lug swing bail handles were located at the shoulders and feet of the hexagonal coffin. These handles were constructed of white metal which had decomposed considerably, leaving the handles in fragmentary condition. One decorative lug with a stylized floral design and rope edging was recovered relatively intact. Two flat white-metal thumbscrews, three fragments of a white-metal memorial plaque, and a fragment of a gilded caplifter were also recovered from the exterior of the hexagonal coffin. The interior of the hexagonal coffin produced sixteen ornamental copper-alloy studs, the heads of which were in the form of hollow, terraced six-pointed stars. Given that the studs were recovered from the interior they may have been used to secure a lining.

Personal items associated with this burial included 20 clear glass seed beads, 11 fragments of larger, blown-glass barrel beads, a hollow, bar-shaped copper-alloy brooch (missing its pin), 4 four-hole porcelain Prosser buttons, and a faceted green glass faux gem in a gilded, base metal setting. The midshaft of a copper-alloy pin was also recovered, which may be

associated with the brooch or may have been used to fasten clothing or a winding sheet. Two pieces of lead shot were recovered by wet-screening coffin fill.

Burial 7: This burial consisted of a rectangular wood coffin containing the partial remains of an adult female. The upper left portion of both the coffin and the interred individual had eroded away. The coffin appears to have been constructed with a combination of iron-alloy cut and wire nails and flat-headed wood screws. The coffin was fitted with double-lug short swing-bar handles. The three lugs recovered display a stylized Art Nouveau design, while the finials consist of hollow domes with decorative bossing at the tip. The grips were plain wooden doweling sheathed in thin sheets of white metal. Two white-metal, flat-head thumbscrews were also recovered.

Personal items associated with Burial 7 include one fragmentary 4-hole button of black gutta percha or vulcanized rubber, one copper-alloy rivet, one 4-hole shell button, and one 4-hole porcelain Prosser button. One piece of lead shot was recovered as well.

Human Osteology (Rebecca Bowman)

Burial #1 (Lab 5002)

Preservation: The completed inventory of burial 01 is located in excel under 44AC0571_Burial_Database. Missing elements include the proximal epiphysis of the left humerus, and the distal epiphyses of the left ulna, left tibia, right femur, and right fibula. The proximal third of the right humerus is also missing. The long bones are in relatively stable condition; however there is an abundance of dark staining, primarily on both femurs and tibias, due to resin seepage from coffin wood lying on top of the legs. The cranium is fragmented and

incomplete. The missing cranial bones include the mid-facial bones (left and right maxilla, nasal bone, frontal bone, left parietal, left temporal, left and right zygomatics) and a portion of the occipital bone. The mandible is present, as is some of the lower dentition (see below). The ilium and ischium are both present, though fragmented. The right pubis is fragmented and the left pubis is missing. All vertebrae are fragmented and incomplete, as are both right and left ribs. The remains of a copper alloy ring is corroded on the right metacarpal and a single left phalange shows staining related to copper oxidation from being in contact with copper alloy material. There is also a circular pigmented marking on the anterior aspect of the right femoral head and greater trochanter. This marking may be attributed to coffin wood pressing down on the proximal femur.

Biological Sex Determination: The ilium has an unembellished greater sciatic notch. This means that the angle of the notch is wide instead of pinched). Based on these observations, the remains are consistent with those of a female (Singh and Potturi 1978).

Age Determination: Based on the auricular surface of the ilium, noting the reduction of billowing and striation, the individual's approximate age was likely between 25-35 years old (Lovejoy, et al. 2005). Other evidence for age estimation includes the presence of both mandibular third molars ("wisdom teeth") with an undeveloped root, suggesting an age between 16-30 (Mincer, et al. 1993).

Dentition: The maxilla is not present. Slight wear is present on the mandibular central incisors and also on the right and left first and second molars. The wear patterns for an estimated young individual are consistent with a high grain diet, similar to one that would be found on Tangier Island (Kim, et al. 2000). Appended below is a photograph depiction of the wear pattern of the teeth (figure 1). No wear is present on either mandibular third molars. Buccal pits can be seen

(figure 1) on both right and left first molars; this is a rare genetic anomaly which can give indication of belonging to a specific population and lineages (Abrams, 1992). While the specific population is unknown, the individual likely retained this trait genetically. Two carious lesions are present on the occlusal surface of the right and left first and second molars. The left and right second molars both possess a wide concave groove extending buccolingually. Black objects were observed at the intersection of the mandibular right canine and 2nd premolar. Upon closer microscopic inspection, it was noted that these were buried in the surface of the dentition, but easily removable, and likely represent the remains of eggs from some sort of marine life.

Burial # 2 (Lab 5003)

Preservation: A completed inventory is located in excel under 44AC0571_Burial_Database. The cranial bones and joint surfaces are highly fragmented. The left occipital is partially present, as is the right temporal and right mandible. The right clavicle and scapula are both incomplete and os coxae are highly fragmented. Both patellas are present and complete. The cervical vertebrae are present and intact; however C7 is missing its centrum. The manubrium of the sternum is present, though not the body. Most of the long bones are missing and/or fragmented. There was also difficulty determining the side of the hands due to similarity in curvature, though most of these bones are present. Almost all of the medial portions of the long bones are present, but the proximal and distal thirds of the majority are fragmentary. The femoral heads exhibit protruding muscle attachments, indicative of stress associated with physical activity.

Biological Sex Determination: Biological sex was assessed from analysis of cranial fragments and partial mandible as the pelvis is too fragmented to be useful. The nuchal crest is moderately expressed and the right mastoid process is several times the width and length of the external auditory meatus, which is a feature typically expressed in males. The mental eminence protrudes moderately. Based on the maximal levels of expression using the cranial features present, the remains are consistent with those of a male (Rogers 2005). Additionally the long bones are

robust, which is also consistent with biological male characteristics (Işcan 2005).

Age Determination: Though biological sex can be estimated from the above criteria, age determination cannot be obtained from the remains because the cranium and pubis are too fragmentary to provide meaningful data. The individual's dentition indicates an age of 20-40 years old (Lampe 1994). The long bones are more porous than normal, though no extreme signs of osteoporosis are noted. This indicates the individual was likely older than 30 years (Nirody, 2015).

Dentition: The maxilla and maxillary dentition is not present. The mandibular right canine, right 1st premolar and 2nd premolar, root of the first molar, and the complete second molar are present. The right third molar (wisdom tooth) was extracted or naturally lost during life and the bone healed over. There are significant carious lesions on the right canine and first premolar and infection into the jaw bone is evident (McClanahan 2003). The resulting infection of the third premolar caused the bone to erode. The distal and mesial sides of the right 2nd premolar exhibits carious lesions and the pulp of the right 2nd premolar also exhibits deterioration of the mandibular bone as a result of infection (McClanahan 2003). The enamel is flaking on the right 2nd molar and dentine is exposed likely due to environmental conditions postmortem. The crown of the right first molar is missing, also likely due to environmental conditions postmortem. There is slight wear on right canine, 1st premolar, and 2nd premolar. There is more significant wear present on right second molar. This is consistent with an adult individual (Kim, et al. 2000).

Burial #5 (Lab 5004)

Preservation: A completed inventory of Burial 05 is located in excel under 44AC0571_Burial_Database. The cranial bones and joint surfaces are fragmented. Only the right temporal can be accurately identified. The post cranial bones and joint surfaces are also heavily fragmented and incomplete, including the vertebrae and ribs. Only the middle third of the left humerus and the distal third and distal epiphysis of the right humerus are present. The proximal

and distal epiphyses of the left radius are present, although the shaft is missing. The proximal, middle, and distal thirds of the right and left femur are both present. The hands represented by the carpals, metacarpals, and phalanges but could not be identified by side due to the general curvature of the features. No tarsal bones are present.

Biological Sex Determination: The degree of fragmentation renders biological sex assessment difficult and results general at best. The right mastoid process is present, though is not wider and longer compared to the external auditory meatus (Rogers 2005). In conjunction with the gracile nature of the remaining elements, the remains are generally consistent with those of a female (Işcan 2005). This estimation is further supported by presence of funerary objects recovered with burial 05 consistent with a female individual, such as a decorative hair comb and glass bead jewelry, that are also consistent with a female individual.

Age Determination: Not possible due to the fragmentary nature of the remains.

Dentition: No dentition is present

Burial #6

Preservation: Burial 6 was more complete than any of the other remains present at VDHR (burial 1, 2, 5, or 7). The cranial bones are highly fragmented, though the left and right parietal can be identified. The mandible is present and contains all of the deciduous teeth. All of the maxillary teeth are present, though the maxilla is not. The left and right clavicles are complete, though the scapula is only partially complete. The left and right os coxae are present although the left and right ischia are missing. The vertebrae are fragmented, as are the ribs. The proximal, middle, and distal thirds of all long bones are present, with the exception of the left fibula, which

is entirely missing. The bones of the hands and feet are partially present. These remains are generally in good condition.

Biological Sex Determination: We assigned this burial a designation of “female” based on the presence of a single headstone with an age range consistent with that of the remains and the recovery of what appears to be a post earring. This should not be used as definitive proof of biological sex; however, determining biological sex in subadults this young is difficult at best.

Age Determination: The remains may represent those of a 3 year old referenced on an inscribed headstone found near the grave site, however this is conjectural. Most of the epiphyses are missing.. The stage of union in the epiphysis of the head, distal and medial epicondyle on the left and right humerus remains open, as does the proximal and distal epiphysis of the left and right radius and left and right femur. The dentition gives the best evidence of age.

Dentition: All maxillary and mandibular deciduous teeth are present. The crowns of the primary left and right mandibular first molars are present. This is consistent with an age of 2-5 years. The crowns of the permanent left and right maxillary first molars are partially formed and partial crowns of the permanent left and right central incisors are also present. The crown of an un-sided permanent maxillary canine is present as well. The mandible shows evidence of additional permanent molars forming inside the bone chamber, which can be seen through holes in the mandible which likely occurred from postmortem ecological conditions. No caries are present in the dentition. The presence of all deciduous dentition and the stages of growth in the permanent dentition are evidence that the remains are consistent with those of a child between the ages of 2-5 (Al-Batayneh, et al. 2015)

Pathology: Narrowing of the left ear canal, relative to the right, may represent evidence of bone remodeling due to ear infections.

Burial #7 (Lab 5006)

Preservation: A completed inventory of burial 07 remains is located in excel under the name 44AC0571_Burial_Database. The cranium was fragmentary, although partial frontal bone, occipital bone, and both temporal bones are present. Significant staining is present on most of the cranial bones from mold growth, now cleaned, which occurred during the drying process. There is an unidentifiable shiny secretion on the outside of some cranial fragments, also likely obtained during the drying process. Active mold observed on a cranial fragment was swabbed and dried with ethanol. A finishing nail was fused to one cranial fragment and a cut nail was fused to another cranial fragment. These fragments are both bagged separately from the other portions of the cranium. Many of the remains were bagged with incorrect labels and were reanalyzed and issued correct labels. The remains found with incorrect labels were both fibulas, both feet, and both hands. There is a bone spur present on a single right and left metatarsal though there are no assumptions on how these anomalies may have occurred.

Biological Sex Determination: Sex assessment was based on portions of the cranium and the greater sciatic notch on the ischium. The mastoid processes on the left and right temporal bones were not longer or wider than their respective external auditory meatus, which represents a proportion consistent with females. The glabella and the mental eminence on the mandible are not exaggerated which are also characteristics consistent with females. The greater sciatic notch on the ischium was wider than what is typically seen in males, also a female characteristic (Potturi and Singh 1978).

Age Determination: Age assessment was based on the auricular surface of the ischium. The auricular surface indicates an age older than 50 years due to the smooth surface and absence of striations and billowing (Lovejoy 1985a).

Dentition: The mandible displays edentulism. The absence of dentition could also give evidence to remains consistent with an older individual (Abrams 1992).

Conservation Report (Katherine Ridgway)

At the beginning of the project it was agreed that the human remains would be made available for isotopic analysis. This meant that it was unclear if or when the remains would be reburied. Because there were some questions about how long the remains would be cared for above ground, they had to be dried. It was decided that at a minimum they had to be desalinated before drying. If the soluble salts that were now in the bones were allowed to re-crystallize this would have the potential to cause severe damage to the bones. When salts are allowed to form inside a porous artifact or skeletal remains, they can cause irreparable physical damage. To prevent this, the remains would have to be soaked in a series of de-ionized water baths to slowly remove the salts.

The first set of remains entered the lab in December of 2012, before I started working in the lab. Emily Williams, Archaeological Conservator for Colonial Williamsburg, graciously came and helped set up the desalination process for Burial 1. The skeletal remains were separated into several containers by section of the body. Image 1 shows the feet from Burial 1. The process involved a fair amount of handling of the remains every time the water was changed because every bone was removed from the bath and replaced after the water was changed. This burial also took up a large amount of space in the lab.



Image 1

When it was known that four more set of remains would be coming to Richmond, another process had to be developed. Window screen was purchase and then cut to fit the more robust remains. They were labeled with Tyvek™ tags marked with Sharpie. The plastic window screen pouches were sewn shut with monofilament, and the tags were attached with the same (Image 2). If the remains were very small or more fragile, then they were placed in plastic containers that had holes drilled into them to allow water to flow in and drain out when the water was changed (Image 3). These pouches and small containers were then placed into a larger container that would hold the water (Image 4).



Image 2



Image 3



Image 4

Each set of remains got its own large container. This helped to make the process of changing the water go much more quickly. It also helped to reduce the likelihood of damaging the bones as it required less direct handling. At one point it might take several hours for one person to change all the water on Burial 1 where Burials 2, 5, 6, and 7 could be changed in less than an hour.

When the process was started with Burial 1, the lab had a Total Dissolved Solids (TDS) tester. This gives a very general result of how much solids are dissolved in the water in parts per million. The concern with this method was that more than just chlorides were being measured, so the bones might be soaked longer than was necessary. Deionized water is slightly acidic (pH 5) so the longer the bones were soaked, the more they were being dissolved in this mild acid. Therefore, the TDS testing was replaced with the LaMotte Chlorides test. This test measured just the chlorides that are present and made the desalination process go much more quickly, limiting any damage from unnecessarily long periods of soaking in slightly acidic water.

The limited time that was available for excavation while the tide was out and the fragmentary nature of the skeletal material meant that the best course of action for some of the most fragile remains was to block lift them and take the blocks to the lab. This allowed for more time to be taken for excavation so that the best preservation of the material could be assured. Here you see the scapula, ribs and vertebrae of Burial 5 that were lifted as a unit (Image 5).



Image 5 (White arrows point to artifacts to be photographed)

As a part of the documentation process some of the block lifts were x-rayed. This was not particularly helpful with distinguishing bone as the density of the dirt was similar to the bone. But it did help with identification of any metals in the block lift. Here you see an x-ray of part of the spine of Burial 7 and a fragmentary lead star shaped piece of coffin hardware is clearly evident along with fragments of lead that had spread throughout the block lift during burial (Image 6).



Image 6

To give you an idea of the physical damage to some of the skeletal material, here the scapula of Burial 5 is shown (Image 7). It had been broken into dozens of pieces. You can see the cracks and breaks throughout. It's likely that a certain amount of damage was sustained from the hurricane in the 1940s when the coffins came to the surface, as well as during other storms and from wave action.



Image 7 (White arrows point to artifacts to be photographed)

The block lifts were extensively recorded using photography and annotations so that once the remains were removed there was as little loss of information as possible. With the most complicated block lifts, Joanna Wilson Green was contacted to review each new level that was revealed and to discuss the next steps for removal of the dirt, just to be sure that nothing was overlooked. To do this work in the lab, a black screen was used to shield the remains from view when they were being worked on near the front of the lab, as the lab has a completely glass front wall for public observation. This was out of respect for the remains and to prevent any member of the public from seeing human remains if they were sensitive to them. Once removed from the block lifts, the remains were desalinated as discussed above for the non-block lift remains. Despite the great amount of physical damage to the remains, there was some preservation of organic materials due to the waterlogged environment. In particular, there was preservation of coffin wood and the lining fabric of the coffin. Some of the organic preservation, mostly of fragments of coffin wood, was due to close association with iron nails. The textile you see here (Image 8) was determined to be cotton, plain weave fabric under high magnification. Where it was found coarse hair wadding was also found, so it was determined that it was more likely to be

from the lining of the casket than from burial clothes. The dark lines on the block lift from Burial 5 (Image 9) are the remnants of coffin wood found once the remains were removed. The small white arrows are there to point out artifacts in the block lift that needed detailed photography.



Image 8



Image 9 (White arrows point to artifacts to be photographed)

Other items were also found with the remains:

Burial 1:

Gilded copper ring with small clear, colorless stone (possibly a diamond) corroded to right hand

phalange
Lead coffin hardware
Synthetic turtle shell hair comb
Plastic(?) hair pin
Shell buttons
Lead shot
Wooden coffin fragments

Burial 2:

Bone button
Lead shot
Copper wire fragments
Coffin wood fragments
Lead coffin hardware fragments

Burial 5:

23 dark green glass beads
Shell buttons
Copper wire, pins and other copper fragments
Coffin nails
Lead coffin hardware fragments
Coffin wood fragments
Synthetic turtle shell hair comb
Textile fragments
Iron fragments and iron coffin nails
White metal button
Lead shot

Burial 6:

Gilded copper coffin hardware
Clear, blown glass beads
White glass buttons
Gilded copper earring with cut green glass rhinestone

Burial 7:

Textile fragment
Copper alloy button
Iron coffin nails
Copper alloy fragments
Glass fragments
Earthenware pottery sherds
Porcelain sherd
Black plastic button
Shell button
White glass button
Lead shot

Once the desalination was complete the remains were placed in polyethylene zip top bags that had been pierced with holes so that they could slowly dry. The remains were checked every few days to see if they were dry or needed to be rotated to allow other parts to dry. Cotton wool in small open containers was soaked in ethanol and placed in the bags to prevent mold growth. The ethanol was replenished as needed. Very few of the bones had any mold growth and any mold was removed using ethanol and a cotton swab after drying was complete.

There were two unexpected parts to this treatment. First, a living worm was found in the pelvis of Burial 1 while it was being desalinated and had to be removed. Ultimately, it had to be poked on both sides with a wooden skewer to convince it to flatten out for careful removal with minimal damage to the bone.

Second, the femur of Burial 1 had high TDS reading far longer than any other bones and it was decided to remove them to prevent damage to bones from the deionized water. When they started to dry, a clear ooze formed on areas of the femurs. It was tested for arsenic because of a concern that it was arsenic laced wax that was used at the time as embalming fluid. It was negative for arsenic and after talking to State Archaeologist, Dr. Mike Barber, it was decided that this was resin from the coffin wood. It turned black when it was exposed to air and oxidized. Dark stains from the coffin wood having rested on the bones can be seen and the ooze was concentrated in those stained areas.

Overall the treatment seems to have been successful. The bones are very fragmentary and fragile. Care should be taken when handling. They have been identified and packed in polyethylene zip top bags which were placed into small boxes to prevent crushing. These boxes were placed into larger boxes with the larger bones for long term storage and transportation.

The Uppards Cemetery: Conclusion

The work at the Uppards Cemetery was unique in many ways. Logistically a nightmare, our efforts were limited by tides, boat availability, weather, erosion, and available time. Excavations were controlled by the tides with a 3-4 hour window of opportunity. With the cemetery at the north end of the island, cut off from the town by the waterway, transport to and from the Uppards was through the dedication of Carole and Lonny Moore who made sure we not only arrived at the cemetery but also returned from it. When Dave and I were involved in the excavation of Burial #1, Carole's boat broke down. As luck would have it, a storm blew in and we took refuge in a broken down hunters' trailer. The time of exit came and went and, without cell phone connectivity, it was not possible to contact anyone. Eventually, a Marine Police boat appeared and we wondered if they were involved in some emergency. We soon found out that the emergency was us and they kindly took us back to the town. It was an adventure in many but, thanks to the Tangier Islanders, all went well.

Tidal erosion and sea level rise eventually took the ultimate toll on the cemetery and it is now part of the Chesapeake Bay. We did save five burials from the sea but lost many more I am sure. Time is not on the side of Tangier Island.

References Cited

- Abrams, Jordan
1992 *Kraus' Anatomy and Occlusion*. Walter Bailey and sandy Reinhardt (eds.), Mosby-Year Book, Inc., St Louis, Missouri.
- Al-Batayneth, O.B., A.I. Shaweesh, and E.S. Alsoreeky
2014 Timing and Sequence of Emergence of Deciduous teeth in Jordanian Children. *Archives of Oral Biology*, 6(1), pp. 126-133.
- Aultman, Jennifer and Kate Grillo
2012 DAACS Cataloging Manual: Buttons. Digital Archaeological Archive of Comparative Slavery, Department of Archaeology, Monticello.
- Bass, William M.
1971 *Human Osteology: A Laboratory and Field Manual of the Human Skeleton*. Special Publications, Missouri Archaeological Society, University of Missouri, Columbia.
- Bell, Edward L.
1990 The Historical Archaeology of Mortuary Behavior: Coffin Hardware from Uxbridge, Massachusetts. *Historical Archaeology* 24(3): 54-78.
- Berryman, H.E., E.F. Harris, H.H. Mincer
1993 The A.B.F.O. Study of Third Molar Development and its Use as an Estimator of Chronometric Age. *Journal of Forensic Science*, Vol 38, pp. 379-390.
- Brothwell, D. R.
1972 *Digging Up Bones*. British Museum (Natural History), London.
- Buikstrat, John E., and Douglas H. Ubelaker
1994 Standards for Data Collection from Human Skeletal Remains. *Arkansas Archaeological Survey Research Series 44*, Little Rock.
- Crow, Michael Scott
2004 Mortuary Practice in Sociohistorical and Archaeological Contexts: Texas, 1821-1870. Unpublished Master of Arts Thesis, Texas A&M University.
- Davidson, James Michael
1999 Freedman's Cemetery (1869-1907): A Chronological Reconstruction of an Excavated African-American Burial Ground, Dallas, Texas. Unpublished Master of Arts Thesis, University of Texas at Austin.
- Eastern Shore Hazard Mitigation Planning Committee
2005 Hazard Mitigation Plan: Eastern Shore of Virginia.
- Flournoy, H.W. (editor)

- 1892 *Calendar of Virginia State Papers and Other Manuscripts from January 1, 1808, to December 31, 1835; preserved in the Capitol at Richmond.* Vol. 10, Commonwealth of Virginia.
- Glover, Amy Suzanne
 2009 Coffin It Up: The Influence of Social Status and Ethnicity in an Historic-Era Los Angeles Cemetery. *Society of California Archaeologists Proceedings*, 22.
- Gold, Debra L.
 2004 *The Bioarchaeology of Virginia Burial Mounds.* The University of Alabama Press, Tusculosa.
- Grillo, Kate and Jennifer Aultman
 2014 DAACS Cataloguing Manual: Beads. Digital Archaeological Archive of Comparative Slavery, Department of Archaeology, Monticello.
- Hacker-Norton, Debi and Michael Trinkley
 1984 Remember Man Thou Art Dust: Coffin Hardware of the Early Twentieth Century. Research Series 2, Chicora Foundation, Columbia, South Carolina.
- Historic New England
 2016 "Not Lost but Gone Before: Mourning Jewelry". Online article available at <http://www.historicnewengland.org/colections-archives-exhibitions/online-exhibitions/JewelryHistory/themes/Mourning.htm>
- Hall, S. Warren, III
 1939 *Tangier Island: A Study of an Isolated Group.* University of Pennsylvania Press Philadelphia.
- Kim, Y.K., H.S. Kho, Lee
 2000 Age Estimation by Occlusal Tooth Wear. *Journal of Forensic Science*, Vol. 45, pp.303-309.
- Little, Barbara J., K.M. Laphear, and D.W. Owsley
 1992 Mortuary display and Status in a nineteenth-Century Anglo-American Cemetery in Manassas, Virginia. *American Antiquity*, Vol. 57, No. 3, pp.397-481, Washington DC.
- Lovejoy, C.O., R.S. Meindi, T.R. Pryzbeck, R.P. Mensforth
 1985 Chronological Metamorphosis of the Auricular surface of the Ilium: A New Method for the Determination of Adult Skeletal Age at Death. *American Journal of Physical Anthropology*, Vol. 68, pp. 1528.y
- Mariner. Kirk
 1999 *God's Island: The History of Tangier.* Miona Publications, New Church, Virginia.

- McManemin, John A.
 1984 *Captains of the State Navies During the Revolution*. Ho-Ho-Kus Publishing Co., Ho-Ho-Kus, New Jersey.
- Owsley, Douglas W., K. Bruwelheide, and R. Kardash
 2001 Recovery and Analysis of the Jamestown Rediscovery South Churchyard Burials from the 1999 Field Season. *Journal of Jamestown Rediscovery Center*, No. 1, Jamestown.
- Owsley, Douglas W., M.L. Richardson, W.F. Hanna, and L.E. Burgess
 2002 Biological and Physical Investigation of the Soldiers plot, Emmanuel Lutheran Church Cemetery, New Market, Virginia. *Archaeological Society of Virginia Special Publication 41*, Spectrum Press, pp. 1-60, Richmond.
- Owsley, Douglas W., M.L. Richardson, and C.K. Galley
 2002 Military Service identification of Soldiers buried in a Church Cemetery in New Market, Virginia. *Archeological Society of Virginia Quarterly Bulletin*, Volume 57, No. 4, pp. 218-220, Richmond.
- Pearson, Mike Parker
 1999 *The Archaeology of Death and Burial*. Texas A7M University Press, College Station.
- Potturi, B.R., S. Singh
 1978 Greater Sciatic Notch in Sex Determination. *Journal of Anatomy*, Vol. 125, pp. 619-624
- Pye, Jeremy
 2010 Typology and Analysis of Burial Container Hardware Recovered from the Excavation of Rambo Cemetery, Rome, Georgia. CRM report prepared for Brockington and Associates, Inc., Norcross, Georgia.
- 2011 Typology and Analysis of Mortuary Artifacts Recovered from Excavations in the 20th Century, New Home Cemetery, Fort Bend County, Texas. CRM report prepared for Geo-Marine, Inc., Plano, Texas.
- Richards, Lily, and John P. Cook
 2003 An Assessment of Cultural Resource Potential within “Uppards” and Goose Island, Tangier Island, Accomack County, Virginia. On file with US Army Corps of Engineers, Norfolk District, Norfolk, Virginia.
- Rountree, Helen C. , Wayne E. Clark, and Kent Mountford
 2007 *John Smith’s Chesapeake Voyages 1607-1609*. University of Virginia Press, Charlottesville.

- Shores, David L.
2000 *Tangier Island: Place, People, and Talk*. University of Delaware Press, Newark.
- Springate, Megan E.
2015 Coffin Hardware in Nineteenth-century America. Left Coast Press, Inc., Walnut Creek, California.
- Tykot, R.H.
2004 Stable Isotopes and Diet: You are what You Eat. *Of the International School of Physics "Enrico Fermi" Course CLIV*, M. Martini, M. Milazzon, and M. Piacentini (eds.), IOS Press, Amsterdam.
- Wallace, Adam (Reverend)
1870 The Parson of the Islands. *Methodist Home Journal*, Philadelphia.
- Warner, William W.
1976 *Beautiful Swimmers: Watermen, Crabs, and the Chesapeake Bay*. Littleton, Brown, and Company, Westford, Massachusetts.
- Watts, Gordon P., and John D. Broadwater
2014 Fort Albion Remote-Sensing Off Tangier island, Chesapeake Bay, Virginia. On file with Threatened Sites Program, Virginia Department of Historic Resources, Richmond.
- White, Tim D.
1991 *Human Osteology*. Academic Press, San Diego.
- Woodley, Philip J.
1992 The Stirrup Court Cemetery Coffin Hardware. *Ontario Archaeology* 53:45-64.

Appendix 1: Grave and Personal Items

Burial 1				
Artifact Type	Subtype	No.	Description	Other
Coffin – ornament	plaque	1	white metal, arabesque border with oval window	
Coffin – fitting				
Coffin – fastening	nail - cut	3	heavily corroded	
Personal				
	button	3	2 -hole, shell	13.9
	hair pin	1	brown celluloid	
	hair comb	1	tortoiseshell-patterned celluloid	side
	ring	1	copper alloy, gilded, colorless stone	right
Miscellaneous				
	ceramic	1	redware, Albany slip	front
	ceramic	1	gray stoneware, salt glaze	front
	ceramic	1	refined red stoneware, red exterior glaze, cream interior glaze	front
	glass	1	olive green wine bottle	front
	shot	1		tors

Burial 2				
Artifact Type	Subtype	No.	Description	Other
Coffin – ornament	Plaque - fragments	2	white metal, rope edge, copperplate engraving	possibly "At Rest", but not legible
Coffin – fitting	Thumbscrew	2	white metal, plaque style	
	Handle - finial	1	partial, white metal	
Coffin – fastening				
Personal	Pin	3	copper alloy (fragments)	longest section 14.92 mm
	Stud	1	bone, collar	head diam: 13.16 mm
Miscellaneous	Shot	4	lead, various degrees of erosion	
	Sprue	2	lead	
	Strap	1	iron alloy	
	Wire - drawn	4	copper alloy	
	Iron fragments		multiple, heavily corroded	
	lead	3	unidentifiable, heavily corroded	

Burial 5				
Artifact				
Type	Subtype	No.	Description	Other
Coffin - ornament	Plate	2	Iron alloy, badly corroded	Recovered from pelvis block lift (two distal phalanges attached)
Coffin - fitting	Handle - partially intact	1	Wood grip, white metal bracket and finial with bossed tip	
	Tack	1	copper alloy	resembles upholstery tack
Coffin - fastening	Nail - finishing	1	iron alloy, recovered from interior of right femur	emerged during desalinization
	Screw - coffin	2	iron alloy, domed heads	
	Screw - wood	1	iron alloy, slotted flat head	
	Nail - cut	3	iron alloy	
Personal	Pin	5	copper alloy	
	Pin	6	copper alloy	found in cranium block lift
	Pin	4	copper alloy	found in torso block lift
	Button	1	copper alloy, ring shank	diam: 15.06 mm
	Button	7	shell	two-hole, diam: 10.07 - 10.9 mm
	Open ring	1	white metal with a stud on one side	possible jewelry fitting? Diam: 12.35 mm
	Bead	23	black glass, round	possibly meant to evoke jet/mourning jewelry
	Hair Comb	1	tortoiseshell celluloid	back comb
Miscellaneous	Nail - roofing	1	iron alloy, wide flat head	

Wire - drawn	1	copper alloy	
Shot	10	lead, varying degrees of erosion	recovered from torso block
shot	5	lead, varying degrees of erosion	recovered from fill

Burial 6

Artifact Type	Subtype	No.	Description	Other
Coffin - ornament	Plaque	3	Molded wreath design, white metal	Elements of a frame
	Stud	2	Bell-shaped, one fragmentary, hollow with pin attached to rear, copper alloy	Found on exterior (center ends)
	Stud	16	Terraced stars, 4 levels (2nd level beaded), hollow with pin attached to rear, copper alloy	Found on interior of coffin, may have been used to attach lining
	Escutcheon	1	Brass, shield design, flat with pin attachment at back	
Coffin - fitting	Caplifter	1	Domed (fragmentary)	Remnants of gilding present
	Handle - bail	3	fragments, white metal	Originally located at shoulders and feet of interior coffin
	Handle - lug	2	stylized floral with rope design, white metal	1880-1920 (Hacker-Norton, Tricklely 1985)
	Thumbscre w	2	Caps only, flat, urn design, white metal	1875-1900 (Davidson 2006)
	Thumbscre w	2	caps only, flat, wreath design, white metal	
Coffin - fastening	Nail - cut	3		
	Nail - wire	4		

	Screw - wood	4		
	Sheet metal	4	iron alloy, fragmentary	
	Misc	26	Iron alloy fasteners, too corroded to identify	
Personal				
	Pin	1	copper alloy, midsection only Hollow rectangular bar, pin missing, gilded base	may have been engraved or embossed on its face
	Brooch	1	metal, stepped design	
	Bead	20	Seed, colorless glass, diam. 2.07 - 2.71 mm Barrel style with tubular openings, fragments only,	
	Bead	11	colorless glass, blown Faceted "gem", green glass, in gilded base metal	appears to have been soldered to something (earring post?)
	Jewelry	1	pronged setting	
	Button	6	4-hole, ceramic, Prosser	10.84 - 11.02 mm diam
Miscellaneous				
	Penny	1	dated 1905	Found in fill
	Painted coffin wood	1	coated in white lead paint	
	Coffin wood	9		
	Shot	2	lead	recovered after wet-screening coffin fill

Burial 7				
Artifact Type	Subtype	No	Description	Other
Coffin - ornament	plaque	8	white metal, rope border	found over pelvis
Coffin - fitting	Handle - finial	7	domed with bossed tip, hollow, white metal	1880-1920 (Hacker-Norton, Trinkley 1985)
	Handle - lug	3	square plaque, arte nouveau design, white metal	attached to coffin with wood screws
	Handle	5	plain cylinder, oak or pine	
	Handle - bracket	1	white metal	attaches plaque to bar handle, swings vertically
	Handle - cover	1	hollow cylinder, white metal	
	thumb screw	2	caps only, flat, plaque design, white metal	1875-1900 (Davidson 2006)

	fabric	1	plain weave, organic fiber	unknown whether clothing or winding sheet
Coffin - fastening	Nail - cut	2		
	Nail - wire	28		
	Screw - wood	3		
Personal	Button	1	4-hole, black vulcanized rubber or gutta percha, fragmentary	
	Rivet	1	copper alloy	
	Button	1	4-hole, shell	
	Button	1	4-hole, porcelain, Prosser	
Miscellaneous	metal			found under pelvis, appears to be functional rather than decorative
	plate	5	fragments, white metal	
	textile	1	fragment	found near cervical region
	glass	1	yellow, clear, molded	from fill
	glass	1	clear, container	from fill
	whiteware			
	e	1	tableware fragments	from fill
	redware	3	unglazed or glaze eroded away	from fill

**Surface
Finds**

Artifact Type	Subtype	No.	Description	Other
Coffin - ornament				
Coffin - fitting	Lug - shield	3	White metal, embossed terracing	located near eroded B. 3 beach
	Lug - shield	1	White metal, embossed terracing	
	Lug - arte nouveau	5	White metal, beaded border	located near B. 2
	Lug - arte nouveau	7	White metal, beaded border	beach
	Lug - floral	3	White metal, floral design with beaded border	beach

Lug - square	2	White metal, rope border	beach
Finial - round, boss at tip	2	White metal	located near B. 2
Finial - round, boss at tip	1	White metal	beach
Finial - round, no boss	4	white metal, knob -shaped	located near eroded B. 3
Finial - round, no boss	2	white metal, knob -shaped Wood, still covered in fragments of white metal	beach
Grip - plain	4	sheathing	located near eroded B. 3
Bracket	3	White metal, simple design	located near eroded B. 3
Bracket	3	White metal, simple design	located near B. 2
Intact bar handle	2	Wood grips, white metal fittings	grip scribed to resemble rope, located near B. 2
Intact bar handle	1	Wood grip, white metal brackets, 1 finial (round, bossed)	beach
Intact bar handle	1	Wood grip, white metal brackets, 1 finial (round, bossed), art nouveau lug	beach
Intact bar handle	1	Wood grip, white metal final with floral design, no bossing	beach, wood scribed to resemble rope
Partial bar handle	1	Wood grip, art nouveau lug	beach
Partial bar handle	1	Wood grip, finial (round, bossed)	beach
Thumbscrew	4	White metal, plaque style	located near B. 2

Coffin -
fastening

Nails	2	iron alloy	located near B. 2
-------	---	------------	-------------------

Personal

Back comb	2	Tortoiseshell celluloid	located near eroded B.3
-----------	---	-------------------------	-------------------------

Miscellaneous

s

Pottery

1

Shell-tempered, cordmarked ceramic

beach