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## Resurrectionists' Excursions: Evidence of Postmortem Dissection from the Spring Street Presbyterian Church

Shannon A. Novak and Wesley Willoughby

*In this paper we contextualize two unique individuals recovered from the historic Spring Street Presbyterian Church burial vaults in lower Manhattan (ca. 1820-1846). The crania of one adolescent and one infant display clear evidence of a craniotomy. Both had complete circumferential incisions to remove the calvarium for internal examination. Both crania were sectioned using a saw, though the adolescent underwent further postmortem preparation: thin scalpel marks indicate defleshing, and metal pins embedded in the frontal and occipital bones would have facilitated disarticulation and rearticulation of the vault, presumably for teaching. By the early 19th century, the illicit exhumation of graves to obtain cadavers for anatomical dissection was a widespread phenomenon and particularly prevalent in New York City. Though the bodies of criminals, the destitute, and the marginalized were often targeted, resurrectionists were opportunistic in their pursuits. Thus, the presence of two dissected crania in the burial vaults of the Spring Street Presbyterian Church leads us to question how these remains came to be interred alongside members of the Spring Street congregation. Such an inquiry will require a closer examination of the social-historical context of the church and its membership along with the physical evidence from the skeletal remains.*

*Dans cet article, nous mettons en contexte deux individus découverts dans les caveaux de la Spring Street Presbyterian Church à Manhattan (c. 1820-1846). Les crânes d'un adolescent et d'un enfant en bas âge possèdent des traces incontestables d'une craniotomie. Les deux portent des marques d'incisions circumférentielles pratiquées afin d'enlever la calotte crânienne pour procéder à un examen interne. Les deux crânes ont été coupés à l'aide d'une scie, bien que l'adolescent ait subi d'autres opérations post-mortem : de minces traces de scalpel indiquent que la chair a été enlevée et des broches métalliques insérées dans les os frontal et occipital auraient facilité la désarticulation et la ré-articulation, sans doute dans un contexte d'enseignement. Au début du XIXe siècle, l'exhumation illégale de tombes pour obtenir des cadavres afin de pratiquer des dissections anatomiques était un phénomène répandu, particulièrement à New York. Bien que les corps des criminels, des démunis et des marginaux ont souvent été ciblés, les résurrectionnistes étaient opportunistes dans leurs activités. Ainsi, la présence de deux crânes disséqués dans les caveaux de la Spring Street Presbyterian Church amène à nous interroger sur la façon dont les têtes de ces deux individus ont pu se retrouver enterrees avec d'autres corps demeurés intacts. Pour répondre à cette question, il est nécessaire d'examiner de plus près le contexte socio-historique de l'église, en plus des preuves liées aux restes humains.*

The dissected body was nothing but a collection of body parts and waste, a thing; potter's field was a dumping ground, a place of exclusion. ... For working men and women, burial in a cemetery or churchyard symbolized inclusion in the social order.

—Michael Sappol (2002)

### Introduction

The illicit exhumation of bodies to obtain cadavers for anatomical dissection was a widespread phenomenon in Jacksonian America. Indeed, historical accounts confirm that grave robbing was the primary means of specimen procurement for medical student instruction in American universities in the 18th and 19th centuries (Sappol 2002; Washington 2006). Yet,

given the prevalence of illicit dissection, archaeological evidence of "resurrectionist" activities is uncommon. Notable cases of dissected remains are reported in Blakley and Harrington's (1997) study of a 19th-century medical school in Georgia, where the commingled bones of 100 to 400 individuals were found in the basement. Douglas Owsley (2012, pers. comm.) reports another institutional setting, the Richmond Penitentiary in Virginia, where the dissected remains of 18th- and 19th-century inmates were disposed of in a well. Some institutions, however, afforded bodies somewhat more respectable interments after dissection. In New York, the Albany County Almshouse cemetery (1826–1926) contained bodies that had been procured for anatomical study by the Albany Medical College,

including those of inmates, the unclaimed, and the destitute (Lusignan 2004). Similarly, the Charity Hospital Cemetery in New Orleans (1735–1811) held the bodies of 271 individuals coming from the indigent African American and white populations of the city. Many of their bones displayed cuts associated with autopsy and other medical experiments (Owsley 1995).

Such unceremonial use and discard also has been identified in non-institutional cemeteries. In the 20th-century Dallas Freedman's Cemetery, Davidson identified two dissected and incomplete individuals in a single coffin. One individual had a craniotomy and his legs sawed off at the mid-femoral shafts. The second individual was missing their cranium and arm bones (Davidson 2007: 206). Moreover, Davidson (2007: 407) suggests that, as a final insult, the bodies were positioned in a sexually suggestive manner. Also in this cemetery, empty graveshafts and boxes attest to the selective targeting of this marginalized African American population.

Similar targeting may have been directed at the New York African Burial Ground, although only one individual was found to have been altered by postmortem examination. Burial 323 is intriguing for a number of reasons. Based on morphological traits, the adult male was identified as Caucasian and strontium analysis indicated that he was from the local area (Blakey 2004: 10). These characteristics differed from the majority of the remains analyzed, which were determined to be individuals of African ancestry who had migrated to the region. Burial 323 was also distinct in having his calvarium sawed off and in being buried holding the sectioned portion in his right arm (Blakey 2004: 10–11). The rest of his skeleton, however, remained intact and unaltered.

Other cases of postmortem alteration suggest that there was a concerted effort to make the body whole again after scientific examination. One of the earliest cases comes from St. Croix Island, Maine. Here, Crist and his colleagues documented an early 17th-century case of a French settler who died of scurvy and had his skull autopsied by the attending barber-surgeon (Crist et al. 2004). The young man's sectioned cranium was repositioned in anatomical position for burial. Nystrom (2011b) reports on a young adult female from

the Newburgh Colored Burial Ground (1830–1870) in New York who was similarly reconstituted for interment after a craniotomy had been performed.

Similar concern for rearticulating the skeleton is seen in Victorian England. From the crypts of 18th- and 19th-century Christ Church, Spitalfields (1729–1852), Molleson and Cox (1993: 89) identified seven autopsied individuals, including five adults and two children. Brickley (2006: 146) also identified seven autopsied adults from the nearly contemporaneous St. Martin's churchyard, Birmingham. These latter cases are of particular interest because they come from a middling-class congregation that lived and died in an urban area undergoing rapid industrialization. Those attending the Spring Street Presbyterian Church in Lower Manhattan experienced a similar transformation.

In this paper we hope to contribute to this relatively diffuse but growing literature by presenting two intriguing cases of craniotomies from a historical abolitionist church in New York City. The evidence for postmortem examination in the burial vaults of the Spring Street Presbyterian Church (ca. 1820–1846) raises a number of questions. In particular we would like to know if these individuals were victims of resurrectionists' excursions, and, if so, how their crania came to be interred in vaults associated with an abolitionist congregation. For such an inquiry, we need to know more about how our cases relate to (1) the prevalence of grave robbing as related to the practice and instruction of medicine, particularly in New York City; (2) the characteristics of those individuals most likely to be exhumed illicitly for postmortem examination, the medical techniques used, and the subsequent fate of such bodies; and (3) the progressive social and political philosophy of the Spring Street congregation.

We begin by briefly summarizing the dramatic physical and social changes taking place within the first half of the 19th century in New York City and the historical landscape from which the Spring Street Presbyterian Church emerged. We then present the physical evidence for postmortem examination in two crania recovered from the church burial vaults, followed by a discussion that contextualizes such embodied acts and objects within an historical frame.

## The Corner of Spring and Varick

In December, 2006, construction crews excavating a foundation for a new hotel in Lower Manhattan unearthed human skeletal remains. The Office of the Chief Medical Examiner (OCME) determined that the remains were historical, and archival research revealed that the property once belonged to the Spring Street Presbyterian Church. Initially established in 1811, the institution was an important part of the community for over a century. It was during the early stages of the church that the burial vaults were in use. Though it is unclear as to when the vaults were first built, historical documents suggest that interments were occurring by 1820 (Meade 2008: III-1). The vaults should have become inactive in 1835 after ordinances prohibiting burials south of 14th Street were adopted. A coffin plate recovered in the vault, however, indicates that one individual was interred as late as 1846 (White and Mooney, this volume).

Four burial vaults were identified at the southeast corner of Spring and Varick Streets by archaeologists from URS Corporation during salvage excavation. Measuring 14 × 9 ft. internally, the four burial vaults were contiguous, the northernmost two being built of stone and the southern two vaults of brick. This difference resulted from two building phases, the first of which produced the earlier stone Vaults 3 and 4, followed by an expansion in 1831 that added brick Vaults 1 and 2. Large numbers of commingled human skeletal remains, associated mortuary artifacts, and fill were found within the vaults. Archaeological excavation and documentary research revealed that this mixing was due, in part, to regulation by sextons, repair of the vaults, and decay and collapse of stacked coffins (Mooney, this volume). Demolition of the church in the 1960s and construction excavation also contributed to the commingling (Mooney et al. 2008). Sixty two partially intact skeletons were identified in the field, and all remaining commingled elements along with surrounding soils were removed from the vaults for further analysis. Since that time, estimates of the number of individuals interred have

increased by fourfold<sup>1</sup>. Most of the remains are those of subadults, including the two individuals discussed in this paper. Although archival sources for the early history of the church are limited, the skeletal remains provide a unique insight into the lives and deaths of members of this congregation during a period of dramatic economic and social change in New York City.

The Spring Street Presbyterian Church began as a modest 30 × 60 ft. shingled wood-frame building in the countryside of New York City in 1811. Over the next two decades, the church and its congregation would be engulfed by expansion, urbanization, and an influx of rural migrants and immigrants. At the turn of the century, New York City had some 60,000 people; by midcentury this number would expand to 600,000, half of whom were foreign born (Gorn 1987: 393). These demographic changes were driven by the "Market Revolution," which included a shift to an industrial economy that relied on cheap and unskilled labor (Sellers 1994). As manufacturing and port activities grew, a flood of immigrants and rural migrants moved to the city in search of work, resulting in an ever more-diverse populace. Competition for jobs was exacerbated by cycles of boom and bust, with race and class differences often magnified during periods of stress.

Emerging from this economic transformation was an embryonic middle class that included "shopkeepers, small master craftsmen, clerks, salesmen, bookkeepers, and bank tellers—who embraced evangelicalism as a way to dissociate themselves from both the dissolute poor and the idle rich" (Burrows and Wallace 1999: 530). These middling families were often clustered in neighborhoods on the periphery of the city, including the Eighth

<sup>1</sup> The skeletal counts for this series are not complete due to ongoing analysis of "disassociated" elements and those remains screened from the vault fill. During excavation, 62 discrete individual interments were identified (Mooney, et al. 2008: 4.26). Laboratory analysis of these designated burials identified further commingling, and, when sorted, a total of 93 individuals were detailed in the final report (Crist et al. 2008: D.11). Since this time, we have screened the fill soils and sorted elements collected and designated during excavation as "disassociated." Analyses of these remains have added a substantial number of individuals to the counts of adults and subadults, but particularly to the latter (Crist, this volume; Ellis, this volume). We estimate that when this analysis is complete, some 200 to 250 individuals will be accounted for in the vaults.

Ward where the Spring Street Church was located. Over the first half of the century, the area became more diverse in character, with blocks of brothels and tenement houses scattered throughout the neighborhood. Census data indicate that the neighborhoods from which the church drew its congregation were working- and middle-class households of Euro-Americans and African Americans (Meade 2008). What drew these diverse people together was a radical ideology of free will and self-improvement, including an aggressive abolitionist stance.

Rev. Dr. Matthew La Rue Perrine was the first to lead the congregation, but it was his successor, the Rev. Dr. Samuel Cox, who drew the public's attention. Cox, who took over the leadership in 1820, was an ardent abolitionist who preached publicly for emancipation. It was Cox who admitted "Phebe, a free woman of colour" to full communion in the church (Church Session Minutes, 1820, quoted in Meade 2008: II-1), and, by the mid-1820s, established a multiracial Sunday school (Moment 1877). Rev. Dr. Cox seceded from the Spring Street Church in 1825 and established the nearby Laight Street Church. Those who remained at Spring Street would eventually install Rev. Henry G. Ludlow as their pastor in 1828. Upon assuming this post, Ludlow described some 330 souls who remained in the congregation as those "who belonged to that class of person who cannot afford to purchase or hire a pew in our city churches" (Ludlow 1828). A popular and endearing figure, Ludlow's congregation grew, drawn to his ardent abolitionist stance. This stance would ultimately result in the destruction of both his home and the Spring Street Church by a mob during the 1834 New York City race riots.

Ludlow was purportedly targeted because he had recently blessed a mixed-race marriage, a charge he adamantly denied. Regardless, the *Courier and Enquirer*, a broadsheet city newspaper known for its support of slavery, commented on the recent attacks:

On the whole, we trust the immediate abolitionists and amalgamators will see in the proceedings of the last few days, sufficient proof that the people of New York, have determined to prevent the propagation amongst them of their wicked and absurd doctrines, much less to permit the practice of them (*Courier and Enquirer*, July 14, 1834).

"Amalgamist" was a common slur used against abolitionists who threatened to blur social and racial divides. A fascination with boundaries and hybridity was also a key concern of scientists of the time (Bowler 2003). Their attention to defining a natural system of relationships in the living world relied upon close examination of the external and internal structure of organisms, including that of the human body.

## Anatomy of a City

The late 18th and early 19th centuries mark an era of new and significant medical achievement influenced heavily by the scientific ideals of the Enlightenment. Indeed, many attribute the foundations for the modern field of scientific biology to this period. Research by Lavoisier and Laplace between 1777 and 1785 conclusively illustrated that respiration in man and other animals was no more than the combustion of carbon and hydrogen in foodstuffs when combined with inhaled oxygen. They thus confirmed what Descartes and a few others had previously suspected: man was basically a machine. A new era ensued where physicians and scientists began implementing a pragmatic and systematic approach towards generating knowledge of the physical and biological world (Malkin 1993).

Anatomy was at the center of this late-18th- and early 19th-century progression in science and, particularly, in medicine (Richardson 1987; Malkin 1993). Virtually no methods existed for "internal examinations" (i.e., measures of body temperature, heartbeat, breathing, etc.) on living patients (Leavitt and Numbers 1997: 129). While dissection has roots that extend well into antiquity, by the late 18th century postmortem examinations had become essential for learning about disease as well as for obtaining detailed knowledge of the body's interior (Park 2006). Advanced anatomical training made surgery respectable, and, by the 1760s, anatomy formed a central core of the medical curriculum and occupied a privileged role in the credentialing process of physicians (Sappol 2002: 51).

During the early part of the 19th century, there were few medical schools in the United States, and many physicians received their degrees from institutions in Europe. London,

Edinburgh, and Paris were noted for their exceptional medical schools and anatomy classes (Malkin 1993; Leavitt and Numbers 1997; Sappol 2002; Moore 2005). However, several notable schools in the U.S. had established medical programs by the early 19th century, including Harvard, Rutgers, the University of Pennsylvania, and Yale. One of the more prominent schools, Columbia College (known as King's College prior to the Revolutionary War and later known as the College of Physicians and Surgeons, which incorporated Columbia's medical program in 1814) was located in New York City. These schools often permitted students to fulfill the dissection portion of their educational requirements at a place of their choice, and, as a result, a number of independent anatomy schools flourished in the early 1800s (Shultz 1992: 18). Physicians in some locales also held anatomy lessons and dissections at their private offices or residences (Sappol 2002: 69).

Although America lagged behind the more prestigious institutions in Europe, anatomy became part of the core medical curriculum of American universities (Sappol 2002: 111). Essential to this curriculum was a ready supply of cadavers to supply the needs of anatomy lectures. Obtaining bodies for anatomical instruction was never an issue for the Parisian schools in post-Napoleonic France, since the French famously had access to an unlimited supply of cadavers through their large charity hospitals (Sappol 2002: 111). Britain and the United States lacked such institutions and relied on other provisions. In 1506, James IV of Scotland set the precedent of provisioning the bodies of criminal offenders when he granted the Edinburgh Guild of Surgeons and Barbers bodies of certain executed criminals for dissection (Richardson 1987: 32). In 1540, codified by royal charter, Henry VIII granted an annual ration of four hanged convicts each year to the barber-surgeons of London (Richardson 1987: 32; Sappol 2002: 100; Moore 2005: 26). The passage of the Murder Act under George II required the hanging in chains or the dissection of the bodies of all executed criminals to add "some further terror and peculiar infamy ... to the punishment of death" (quoted in Ross and Ross 1979: 109).

Following these English precedents, by the 18th century a number of laws were passed in

the United States that provisioned the bodies of executed criminals for use in anatomical dissection. A 1789 New York act ("Act to Prevent the Odious Practice of Digging up and Removing for the Purpose of Dissection, Dead Bodies Interred in Cemeteries or Burial Places") provided the bodies of executed prisoners for dissection at the discretion of the judge. In 1790 a law passed by Congress gave federal judges the authority to add dissection to the death penalty in murder cases (Sappol 2002: 123). Despite such legislation, demand for cadavers was always greater than the legal supply. In the words of an 1826 report of the regents of the College of Physicians and Surgeons, the premier medical college in New York City, the 1789 law "for delivering over for dissection, certain convicts, who are executed, or who die in the state prison, furnishes an insufficient number of 'subjects,' even for the regular course of surgical and anatomical lectures" (quoted in Sappol 2002: 111).

Frustrations over supply were compounded by a general reluctance for individuals to volunteer their bodies for anatomical instruction or scientific research. The notion of having one's body or that of a loved one dissected after death provoked horror and outrage. Dissection was generally perceived to be a desecration of the corpse that would impede resurrection and denied the survival of identity after death (Richardson 1987; Moore 2005; Halperin 2007). As Crossland (2009: 109) has illustrated, "outside scientific circles it was popularly believed that some degree of personhood remained in the corpse after death, this belief was denied by 19th-century anatomists, whose very practice seemed to disprove this possibility." It is, however, important to note the distinction between dissection, particularly that done for the purposes of medical instruction, and autopsy. Though both practices involved opening the body, the latter was a private affair that was less intrusive and focused on the specific organs believed to have been the cause of death (Sappol 2002: 103). Unlike dissection, which separated the body into parts and stripped away social identity, autopsies were seen as an elaboration of the person's biography prior to funeral services (Sappol 2002: 103; Crossland 2009: 110). Yet, as Crossland (2009: 111) and others (Richardson 1987) have pointed out, too fine a line should

not be drawn between these two acts, since the term "autopsy" could be used to mask practices that might be understood by some to be acts of dissection. Consent played a pivotal role in this regard, as it "spoke to an ongoing relationship between the dead and the living, affirming the continuing presence within the community of the autopsied dead, in contrast to the estranged bodies of the dissected" (Crossland 2009: 111). Consent clearly seems to have been lacking in the majority of 19th-century postmortem examinations.

By the late 18th century, grave robbing provided the chief means of cadaver procurement in both Britain and the United States (Ross and Ross 1979; Richardson 1987; Shultz 1992; Sappol 2002; Hight 2005; Moore 2005). Clearly, only a fraction of the bodies dissected at the College of Physicians and Surgeons was obtained legally, leaving body snatching as its primary means of supply. During the early 19th century, New York City may well have had one of the more prominent markets in this underground trade (Sappol 2002). Historian Michael Sappol (2002) suggests that New York body snatchers helped fill much of greater New England's demand for medical cadavers. For example, estimates suggest that at least 400 cadavers were necessary to meet the needs of 1,600 students who attended medical school in Vermont between 1820 and 1840. During that time only one to two bodies, on average, were legally made available per year (Shultz 1992: 15). Trafficking became such a problem that New York City made it a felony in 1819, though this proved to be little deterrent (Sappol 2002: 112). Even with severe penalties, grave robbing was too lucrative to resist, with a going rate of between \$5 and \$25 for a resurrected body, compared to a typical skilled journeyman's weekly wage of \$20 to \$25 in around 1820 (Sappol 2002: 113).

### Osteological Findings

Two individuals from the Spring Street burial vaults display evidence of postmortem examination in the form of a craniotomy. Both subadults were identified when bulk soils from within the vaults were screened in the lab, and both appear to be represented solely by cranial elements. No cuts or saw marks

have been identified on any of the postcranial elements in the collection.

### Individual A

Four cranial fragments (two frontal, a left parietal, and an occipital) were recovered from the fill of Vault 4, an earlier vault in the sequence of four (Mooney et al. 2008). The fragments were determined to be from a single individual based on preservation, age, articulation, and the presence of saw marks. There is no evidence of shroud-pin stains or adherent cloth, coffin wood, or hardware. The bone is a light golden brown, well preserved, and lacks maggot casings.

The individual is an infant, estimated to be between 6 and 12 months in age. This age range is determined by developmental indicators and size seriation with other subadult crania in the series. The squamous and lateral portion of the subadult's occipital has not yet fused. This process typically occurs between one and three years of age (Schaefer, Black, and Scheuer 2009: 15). The *sutura mendosa*, a small suture on the lateral margin of the squama, also remains open; this suture tends to close within the first year of life (Baker, Dupras, and Tcheri 2005: 34; Schaefer, Black, and Scheuer 2009: 15). The sex and ancestry of this individual are indeterminate, and there is no evidence of pathology, though vascularization is present on the right side of the frontal.

All four of the cranial fragments display clear evidence of sharp-force lesions consistent with the use of a saw. The horizontal cuts penetrate through to the endocranium, intersecting in the left lateral occipital (FIG. 1). The typical circumferential calvarium cut on this individual occurs well above the orbits and temporal squama. The cuts are very clean, though chipping and false-start kerfs are present on the left frontal and parietal near the coronal suture (FIG. 2). On the occipital, fine microstriae mark the surface of the cut, and false-start kerfs indicate that a very thin (0.9 mm), fine-toothed saw was used to remove the calvarium (McFarlin and Wineski 1997; Symes, Berryman, and Smith 1998).



Figure 1. Occipital of Individual A, illustrating overlapping craniotomy cuts. (Photograph courtesy of Anthony Faulkner.)



Figure 2. Left lateral (frontal to the left and parietal to the right) of Individual A illustrating a false-start kerf and break-away spur at the coronal suture. (Photograph courtesy of Anthony Faulkner.)

### Individual J

The nearly complete cranium of an adolescent was screened from the soils of Vault 2, one of the later structures built after 1831 (Mooney et al. 2008). Cranial fragments and elements were associated through preservation, articulation, and sharp-force lesions. There is no evidence of shroud-pin stains, coffin abrasion, or other mortuary practices. Nondescript oxidized iron is present on the frontal and occipital at the midline near the postmortem incision. Radiographs of these bones reveal metal pins embedded vertically within the diploe of both elements. These unusual artifacts will be discussed later in this article.

The cranium is estimated to be an adolescent probable male who is 13½ to 14½ years in age. This estimate is based on dental calcification standards (Moorees, Fanning, and Hunt 1963) for the maxillary second (apex ½+) and third molars (cleft initial). The second molars are erupted and root development is directly observable in the maxillary sinus. The third molars are unerupted, though visible in the crypts. While the determination of sex is problematic for subadults, the Spring Street skeletal series displays pronounced sexual dimorphism, particularly in tooth size and robusticity. As such, this individual is estimated to be a male, based on the pronounced muscle attachments and large permanent dentition. Ancestry indicators for this individual are predominantly European: the mastoid process is vertical and pointed, the nasal aperture is long and narrow, the nasal sill is sharp, the zygomatico-maxillary suture is S-shaped, the malars are retreating, and the lateral incisor is spatulate and has a distinct cingulum. Other traits, however, are less consistent with European ancestry, including a parabolic dental arcade, a straight palatine suture, and the shape of the nasal root (Rhine 1990; Gill 1998). Unfortunately, discriminant function analysis could not be used due to the age of the individual and postmortem warping.

This adolescent exhibits antemortem pathology, though the manifestation is quite mild. Bilateral cribra orbitalia is present, and small lytic lesions are located on the frontal and maxillae. On the frontal, a lozenge-shaped patch of porosity is seen just above the right orbit. Similar small lytic patches are located

bilaterally on the body of the maxilla, just superior to the first molar. Such lesions are consistent with tuberculosis and syphilis, but are difficult to differentiate without the postcranial skeleton (Ortner 2003; Roberts and Manchester 2005; Waldron 2009). This individual also has dental anomalies that may be related to the skeletal lesions.

Though the entire maxillary palate is present, only some of the teeth are present in occlusion. On the right, only three molars are present; the rest of the teeth were lost postmortem. On the left, only the central incisor and canine are missing postmortem. All of the teeth have a band of grey/brown enamel discoloration, and linear enamel hypoplasias are present in the third maxillary molars. The left lateral incisor has a notch in the occlusal surface of the crown. After microscopic examination, it was determined that the notch was not due to activity, but a developmental anomaly. Both the discoloration and deformity are consistent with congenital syphilis, a condition being seen with some frequency in the Spring Street series. Notching (Hutchinson's incisors) typically manifests in the central incisors of those infected with congenital syphilis (Hillson, Grigson, and Bond 1998) though some evidence seems to be accruing for the involvement of the lateral incisors as well (Molleson and Cox 1993: fig. 4.16; Nystrom 2011a). Indeed, in the Spring Street series, those individuals with Hutchinson's incisors and deformed permanent molars (mulberry or Moon molars) tend to have deformities in the lateral incisors. Because Individual J lacks central incisors, has normal permanent molars, and lacks a postcranial skeleton, the determination of congenital syphilis remains inconclusive.

What is clear about Individual J is that, like the infant above, this subadult displays evidence for the postmortem removal of the calvarium (FIG. 3). Saw cuts encircle the vault from 35 mm superior to nasion, horizontally across the right parietal and left temporal, and intersect in the occipital just superior to the external occipital protuberance. The cuts along the lateral surfaces of the skull are asymmetrical, with the incision bisecting the temporal squama on the left side (FIG. 4) and the parietal more superiorly on the right.



Figure 3. Frontal of Individual J, illustrating craniotomy incision and facial morphology. (Photograph courtesy of Anthony Faulkner.)



Figure 4. Left lateral of Individual J, illustrating craniotomy incision. (Photograph courtesy of Anthony Faulkner.)

Like the infant's cranium, the fine striations along the cuts and the width of several false-start kerfs (0.5 to 0.85 mm) indicate that a thin, fine-toothed saw was used. Individual J has more false-start kerfs as well as more wastage between the superior and inferior surfaces of the cuts. A particularly large cluster of non-penetrating striae appear to the left of the midline above the orbit. Additionally, the occipital has a number of false-start kerfs and chipping lateral to the midline (FIG. 5). In general, this dissection process seems to suggest more haste and less skill.

### Benevolent Society

If these two craniotomy cases are considered within the historical context of early 19th-century medicine, the physical evidence suggest that at least one of these individuals was the victim of illicit body trafficking for anatomical dissection. In particular, the presence of an iron pin imbedded in the center midline of both the frontal and occipital bones of Individual J is quite suggestive (FIG. 6). Although they are highly corroded, the pins appear to have originally been embedded to hold the skull-cap on and to close the cranium after dissection. These pins seem to have

served as a mechanism that would allow the cranium to be opened and closed repeatedly during osteological instruction, similar to instructional specimens available today (FIG. 7). Moreover, thin cutmarks are present on the ectocranium and endocranium, consistent with the use of a scalpel to remove soft tissue and prepare the specimen for instruction.

Pathology in Individual J may have also played a factor in the selection of his corpse for dissection. Diseased bodies were frequent

targets for body snatching and were particularly sought-after commodities for anatomical dissection, often commanding a premium (Sappol 2002: 14; Moore 2005: 40). John Hunter, a famous London anatomist and surgeon during the late 18th century, left notes detailing numerous cases in which he obtained, most often illicitly, the bodies of his own patients after they expired to study the effects of various diseases and his treatments (Moore 2005). Several of Hunter's disciples were known to have exported his anatomical methods to the Americas during this period (Moore 2005). Sappol (2002: 13) notes one case where the parents of a young woman who died of a rare degenerative disease took special care to bury her on their property just below a window for fear that she "would be stolen by doctors who would dissect her in front of an audience of colleagues and students."

Neighborhood and class may have also been contributing factors to the desirability of Individual J's remains. The Spring Street Church supported a racially and economically mixed congregation, but the church was some distance from the poor working-class district near the historic Five Points neighborhood. Typical victims of body snatching came largely

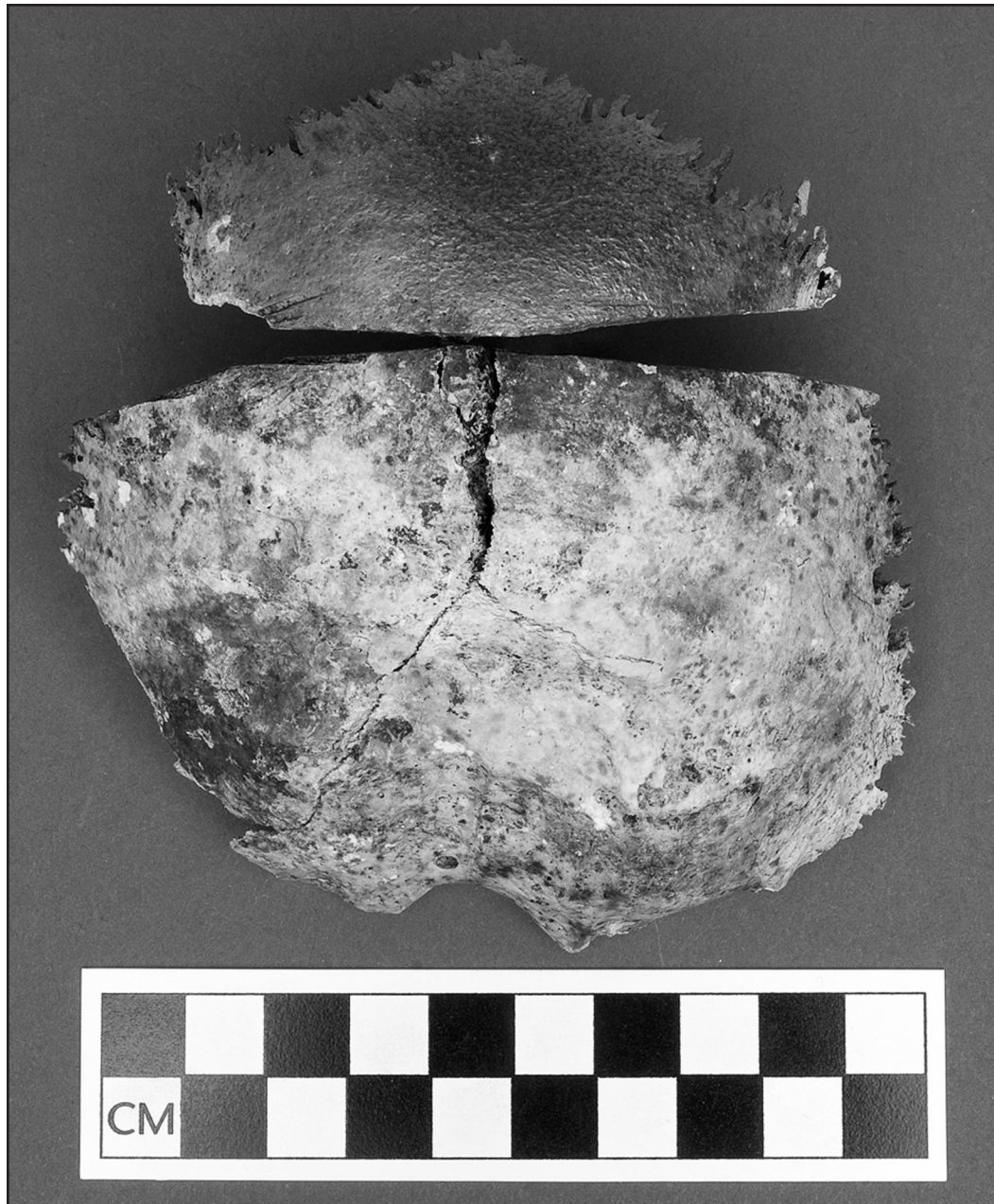


Figure 5. Occipital of Individual J, illustrating false-start kerfs and saw marks (Photograph courtesy of Anthony Faulkner.)

from lower-socioeconomic and marginalized-racial groups. A large proportion of cadavers was supplied by the “Negro Burial Ground” (prior to its abandonment in 1795), as well as by other public burial grounds and potter’s fields (Sappol 2002; Blakey 2004). Although

less-frequently targeted, private churchyards were not exempt from such desecration. Wealthier individuals were often able to pay for a number of deterrents and preventative measures, such as brick vaults and lead or iron coffins (Sappol 2002; Moore 2005; Halperin

2007). At Christ Church, Spitalfields, for example, 30 of the coffins from the vaults were reinforced with iron bands, and another coffin had a chain wrapped around it (Reeve and Adams 1993).

Though no such extravagances were seen at Spring Street, the proximity of the vaults to a number of medical institutions would have made them enticing. The church is approximately 1.2 mi. from where the College of Physicians and Surgeons was located between 1813 and 1837, and only 0.8 mi. from its location after 1837. The Negro Burial Ground, a frequent target of body snatchers prior to its abandonment, was approximately 0.7 mi. from Physicians and Surgeons, suggesting that Spring Street is likely within the range of targeted sites (FIG. 8). Beyond these larger institutions, however, were numerous private physicians who practiced and taught anatomy in their homes. They too would have been in need of teaching specimens.

Regardless of opportunity, there is one troubling question about our case whose answer remains elusive. Why, if this individual was the victim of illicit body trafficking and dissection, were the cranial bones found in a church burial vault? Such vaults were one of a series of burial methods designed to prevent grave robbing, as they generally had

thick walls with stout doors that were usually kept locked. Although it was not unusual to bribe cemetery caretakers (Sappol 2002), this does not explain why, if the corpse was removed for illicit anatomical dissection, the remains were returned to the burial vault. In other such archaeological cases, nearly all dissected remains, particularly those with attached hardware, were found in direct association with instructional institutions—buried in areas beneath the floors of basements or in pits located outside buildings that housed anatomy labs (Blakey and Harrington 1997; Chapman 1997; Hull 2003).

An explanation for the interment of the sectioned infant’s cranium is equally ambiguous. This craniotomy was performed with greater skill than that of the adolescent, and no hardware or defleshing marks are seen on the bone. Recall that these two crania were located in different vaults—the infant in the earlier and the adolescent in the later—suggesting the potential for different motives and processes. Therefore, there are at least four broadly framed scenarios that may apply individually or to both cases.

The first possibility, as discussed above, was that the bodies were illicitly removed from the burial vault, dissected, and the crania returned and reinterred. This seems unlikely

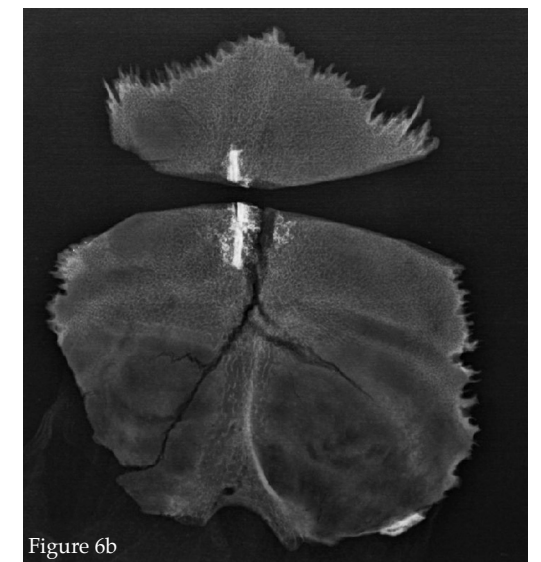


Figure 6. Radiograph image of Individual J illustrating metal pins embedded in the (a) frontal and (b) occipital bones. (Image courtesy of Oneida Medical Imaging.)

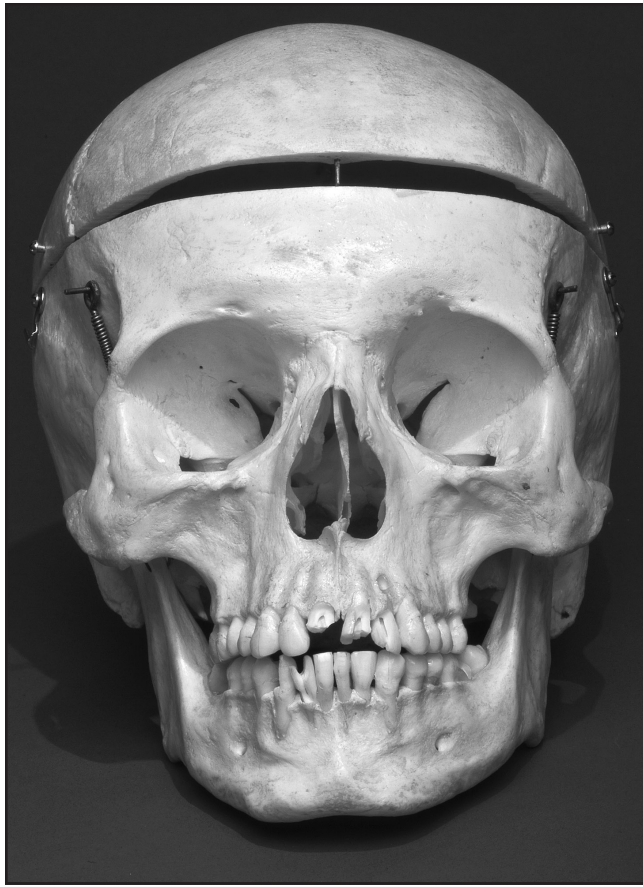


Figure 7. Modern teaching specimen with articulation pin in frontal. (Photograph courtesy of Anthony Faulkner.)

for either case given that, in the first half of the century, anatomists had little interest in gathering together parts of dismembered bodies and subsidizing burial. Resurrectionists exhumed remains but were not known for reburying them. It was not until 1854 that anatomy legislation finally passed in New York that required “the remains of the dissected to be interred in a wooden coffin” (Sappol 2002: 134). Many of these burials continued to be found in association with public institutions such as almshouses, prisons, or hospitals, though on occasion anatomized bodies were buried in private cemeteries (Davidson 2007; Nystrom 2011b).

The second possible scenario for our cases is that legitimate autopsies were performed. The examination would have been a more private affair that only briefly interrupted the

funerary process of a known person. This kind of postmortem would have been more focused on a particular anatomical region, which in both of our cases was the head. Thus cuts on postcranial elements should not be expected. These elements, therefore, might be commingled in the vaults with other sub-adults’ remains and not be distinguishable as belonging to either of these individuals. This explanation seems more likely for the infant, but less likely for the adolescent. The postmortem performed on the infant, moreover, is similar to that seen in a young child from the crypts at Christ Church, Spitalfields, London (1729–1857), who Molleson and Cox argue had been autopsied. The 10-month-old child had no skeletal pathology, but had been subjected to a craniotomy. The child, they note, “was the son of a surgeon” (Molleson and Cox 1993: 89).

A third possible explanation for the crania presented here is that the heads were relinquished to the care of the congregation by a benevolent doctor in the community or congregation. According to a church publication celebrating the 140th Anniversary of the Old Spring Street Presbyterian Church, 1811–1951,

Joseph Hanson, M.D. is listed as one of the elders in 1822 (Hintz 1951). Rev. Samuel Cox’s brother, Abraham Cox, M.D., was also active in the abolitionist movement in the city though it is unclear to what congregation he belonged (Headley 1873: 88). Additionally, there is an intriguing entry in the financial records of the church. Meade transcribed the handwritten treasurer’s minutes (1818–1828), which list some activities relating to the burial vaults. The fifth of 51 entries in these minutes reports that on July 23, 1821, a fee of \$3.50 was paid for “[fresh bone?] in vault” (Meade 2008: A-1). This entry is the only one of its kind, while 26 others refer to a “child” by surname, or simply “child” or “children.”

Though any of these entries could have been the infant presented here, if “fresh bone” or a previous anatomical specimen

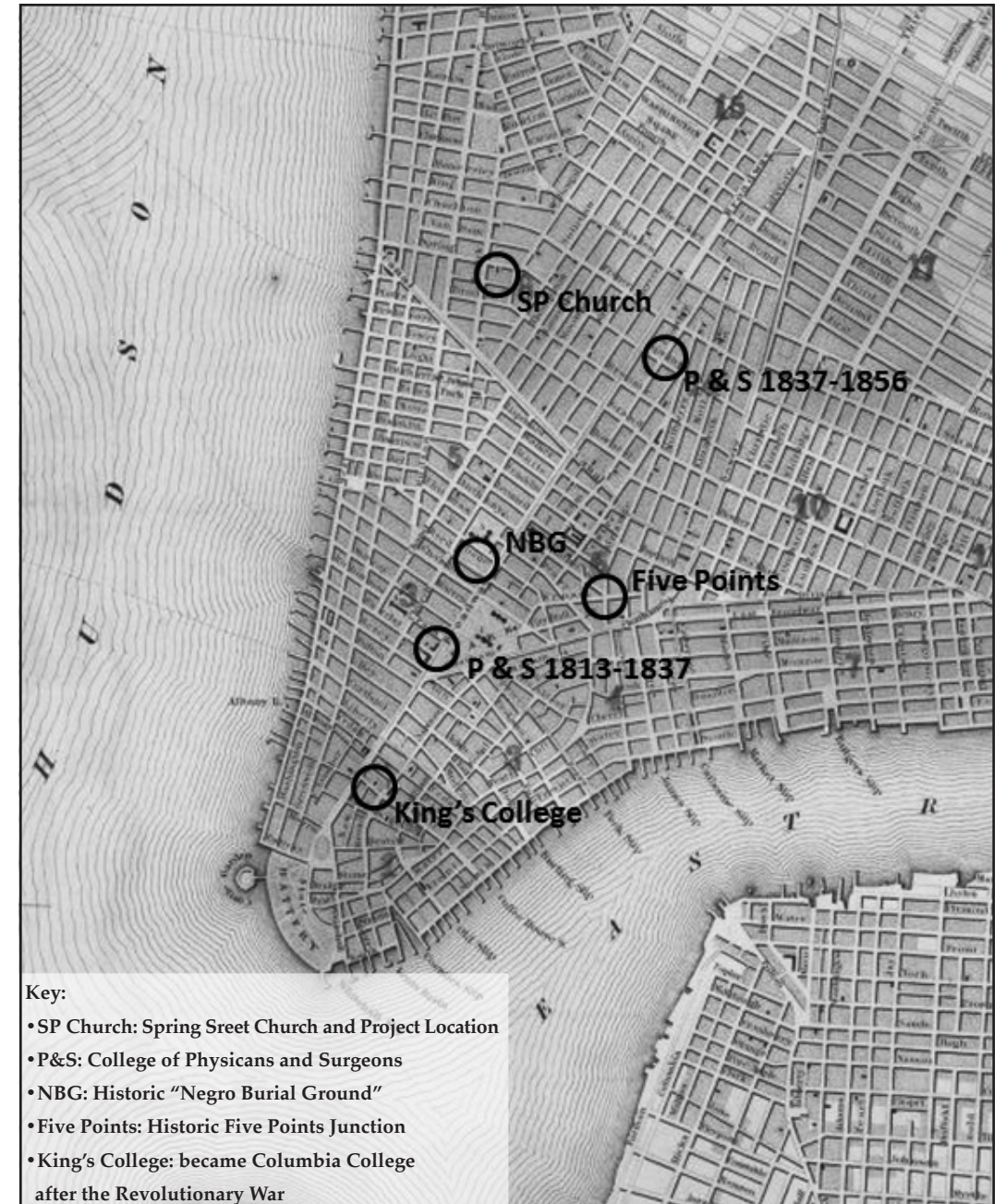


Figure 8. Map of 19th-century Manhattan with locations of medical schools relative to the Spring Street Presbyterian Church. (Adapted from 1838 Map of New York by Thomas Bradford) (Map courtesy of the David Rumsey Collection.)



were relinquished, it is likely that these would have been nameless dead that were from elsewhere and most likely acquired through illicit means. Corpses were known to be transported into the city from upstate New York as well as between other urban centers (Sappol 2002: 113, 115). "Foreign" bodies of sailors were also desirable, as many travelers died in port lacking resources or social ties (Sappol 2002: 116). While an unlikely explanation for the presence of the infant's remains, a young man of nearly 15 years might have participated in such ventures.

Finally, the presence of unknown foreign bodies in the vaults might also be the result of a more radical act: the crania may have been recovered by angry sympathizers during a raid. The stigma of dissection and its association with immorality and crime were seen to be perpetrated by a privileged bourgeois class on the disadvantaged. In general, there was a disdain for the practice of dissection by the majority of the public. As a result, attacks on doctors and raids of anatomy labs by mobs occurred with some frequency in the 18th and 19th centuries. These raids could result in the reclamation of dissected elements.

In 1824, for example, outraged citizens in Connecticut took up arms and retrieved the body of the daughter of a West Haven farmer from the Yale Medical College (Wang 2005). Sappol (2002: 106) lists 11 such crowd actions against medical colleges that occurred between 1765 and 1830. The best known of these cases is the New York City Doctor's Riot of 1788, where a large mob descended on an anatomy lab after children witnessed a medical student waving a severed arm out of the window (Shultz 1992). The following day, before the militia was able to disperse them, the mob had grown to 5,000 individuals intent on hunting down physicians, medical students, and cadavers (Sappol 2002: 108).

Reclamation acts were certainly within the ideological realm of doctrine propagated at the Spring Street Presbyterian Church. The pastors, in particular, were known to be socially progressive and actively involved with the abolitionist movement. Middle-class reformers were, in general, opposed to the "skin" trades of prostitution and slavery, and "rejected anatomy acts as ghoulish and undemocratic—a vampirical form of seigneurial privilege"

(Sappol 2002: 4). From the 1830s until the passage of the 1854 "Bone Bill," prohibitionists, moral reformers, and antislavery Whigs would rally against anatomy legislation in New York (Sappol 2002: 133). This legislation would allow bodies of the "unclaimed"—primarily immigrants and the poor—to be given over to medical schools for teaching and dissection.

The congregation of the Spring Street Presbyterian Church was primarily composed of working-class and lower-middle-class people. Husband (2010: 3) has argued that these people were "drawn to the movement, in part, because they saw in the slave's exploitation a parallel to their own." She also points out that such class sentiments were deeply entangled with domestic discourse that expressed anxiety over market-driven changes to their own families through narratives of the dissolution of slave families. The domestic sphere was, therefore, to be vigorously defended. That sphere clearly extended to the dead. "The unearthing and dissection of bodies," notes Sappol (2002: 3), "was seen as an assault upon the dead and an affront to family and community honor." Such slander would not be taken lightly, given that radical abolitionists encouraged rebellion, martyrdom, and civil disobedience by men and women alike (e.g., Garrisonians, the Grimke sisters). Whether congregants of the Spring Street Church engaged in such reclamation acts has yet to be confirmed by historical accounts.

### Conclusion

While there is uncertainty regarding the nature of events that resulted in the two sub-adults presented here being interred in the Spring Street Presbyterian Church vaults, it is clear that Individuals A and J were subject to some form of postmortem examination. Each displays clear evidence of a craniotomy, though the infant's incision appears to have been performed with greater skill than that of the adolescent. Additionally, the latter underwent further postmortem preparation, while the cranium of the infant appears to have been simply opened up. Finally, the infant exhibits no skeletal pathology, while the adolescent has skeletal and dental lesions characteristic of infectious disease.

Because dissection carried a social stigma associated with immorality, poverty, and

criminality, it seems unlikely that the Spring Street congregation sanctioned such post-mortem acts. Their socially progressive attitudes, moreover, included an aversion to the skin trades, which transformed the body into a commodity and subjected it to the whims of the market. Thus, it is not surprising that this congregation might "adopt" anatomized crania, as these objects represented something they themselves feared and with which they empathized: fragmentation and dissolution of the body, family, and moral society.

When these social and historical variables are juxtaposed with the osteological findings—metal pins embedded in the cranium of Individual J, infectious disease indicators, and lack of associated postcranial elements—it appears that we may have identified at least one relinquished or reclaimed victim of resurrectionists' excursions. Regardless of the path by which the sectioned crania made their way into the vault, the fact that they were interred with other members of the congregation is telling. Whether these children were church members while living, or whether their bodies were simply incorporated into the benevolent society after death, is unclear. In death, however, their bodies (or parts thereof) were embraced by the community and afforded funerary rites, thereby recognizing a continuity of identity within a moral society.

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