

## **7. Uncovering the lives of late-eighteenth- and nineteenth-century inhabitants of Bristol through osteoarchaeological and documentary analysis**

Heidi Dawson-Hobbis and Jocelyn Davis

### **Abstract (241 words)**

This chapter presents combined historical and osteoarchaeological biographies for five named individuals, Maria Taylor (1822-1845), Thomas Rokeby Price (1849-1853), Mark Kelson (1801-1857), George Cumberland (1754-1848) and Elizabeth Cumberland (1752-1837), excavated from the nineteenth century cemetery of St George's, Bristol. For this period there is a wealth of documentary evidence relating to occupation, family status and childbirth, and causes of death and injury that can complement osteological evidence of ageing, disease and activity patterns. Maria Taylor and Thomas Rokeby Price both had tuberculosis cited as the cause of death, enabling a comparison with the evidence for any skeletal lesions associated with this diagnosis, and adding to our knowledge of the manifestations of tuberculosis. Mark Kelson had evidence for a healed fracture, with the circumstances of his injury being reported in the local press. This allows a rare comparison between the state of healing of the injury and the known timeframe of the event. George and Elizabeth Cumberland were very elderly when they died: here we undertaken an exploration of the ageing body, outlining some of the problems inherent in osteological methods of age determination. Letters written by George Cumberland also allow a more personal view of his age-related bodily ailments. This exploration of five individuals has allowed us to gain new insights into the lived experience of the inhabitants of Bristol in the nineteenth century and has demonstrated how collaboration between osteoarchaeological and historical research allows the illumination of less studied groups, such as women, children, and those of lower socioeconomic status.

### **Keywords**

tuberculosis; trauma; childbirth; senescence; age determination; degenerative disease; socioeconomic status; burials; named individuals; personal letters

## **Introduction**

The analysis of human skeletal remains informs us about the lives and deaths of individuals from the past. Burials exhumed from nineteenth century cemeteries with well-preserved grave markers or coffin plates recording the name of the deceased, offer the opportunity to integrate documentary evidence with osteological data to create both historical and osteoarchaeological biographies and to explore how these different sources of data complement each other. The aims of this chapter are to use these data to contribute to our understanding of how the lived experience in terms of disease, accident and occupation may manifest on the skeleton. In the introduction to this volume Craig-Atkins and Harvey refer to the importance of personal ‘ego-documents’ as a window into ‘the necessarily intimate, personal, individual and interiorized components of lived experience’ (pp. ref). In one of the cases presented in this chapter we were able to utilise such information, transcribed from letters, which allowed access to George Cumberland’s own thoughts and feelings. This is the first study that integrates the osteological analysis with an exploration of the historical documents available for a nineteenth century cemetery situated within the city of Bristol, and thus explores urban life away from the capital to assist in addressing the London-centric focus seen in other studies. This chapter aims to contribute to a growing focus on a broad range of people in urban communities, not just the middling or elite, and is a general call for osteoarchaeologists and historians to work together to enable a greater understanding of the lives, deaths and disease processes that affected populations living in the nineteenth century. To explore these aims we will present the osteological and historical evidence for five individuals of differing age, sex and socioeconomic status who were buried in St George’s

cemetery, Bristol between 1837 and 1857, with a focus on the evidence for disease (tuberculosis), traumatic injury and the ageing body.

This chapter aims to build on existing work such as the seminal study which utilised this approach on remains from the crypt clearance undertaken at Christ Church Spitalfields, London. This study provided rich and nuanced information on the lived experience of the individuals exhumed as well as a means to test osteoarchaeological methodologies, which were found to be lacking, particularly in the accuracy of assigning an age-at-death for older adults (Molleson & Cox 1993). This work was the first to illustrate how osteological and historical data could be explored in tandem to realise ‘the potential of skeletal variation as an indicator of lifetime activity’ (Molleson & Cox 1993, 214). As the sample came from a crypt clearance, these individuals were all of ‘the middling sort’ and therefore lacked diversity of socioeconomic status. Cemetery excavations, such as that at St George’s, Bristol, which has a mixture of earthen burials and those interred in burial vaults, are more likely to provide us with individuals more representative of the diversity of urban communities and in this chapter we aim to represent a range of people from diverse backgrounds.

The invisibility of women, individuals of lower socioeconomic status, and children in both history and archaeology began to be discussed in the late twentieth century (Bock 1989; Lillehammer 1989) with research now buoyant in these areas in the twenty-first century (Gleadle 2001; Gowing 2003; Newton 2012; Dawson 2014; Gowland *et al.* 2018; Mant 2020). As archaeology deals in physical remains rather than the written word it enables us to make these groups more visible particularly in exploring aspects of physical embodiment (Harvey 2020), such as the effect of disease or trauma to the body, and in the processes of age and degeneration. The increasing rate of clearance of cemetery sites and vaults in advance of development across England creates the opportunity to explore the lives of ordinary people

who lived and died in the nineteenth century and contribute to our understanding of how their lived experience in terms of disease, accident and occupation may manifest on the skeleton. Several named skeletal collections from this period have been explored, but the focus has often been in London (Emery & Wooldridge 2011; Henderson *et al.* 2013, 2015; Miles *et al.* 2008; Miles & Connel 2012; Newman & Hodson 2021; Scheuer 1998). Sometimes only a subsample of the population has been available for study, due to a lack of time and funds provided by developers. In other cases, grave markers have not been in-situ and therefore names cannot always be directly linked to the skeletal remains (Emery & Wooldridge 2011) or the information from the skeletal remains and the information from coffin plates are presented separately (Connell & Miles 2010) with no effort made to link the two sets of evidence. The aim of this chapter is to present the first study that integrates the osteoarchaeological analysis with an exploration of the historical documents available for a nineteenth-century cemetery situated within Bristol. This study will aim to add to the growing body of work (Brickley *et al.* 2006; Adams & Colls 2007; Gowland *et al.* 2018) exploring urban life away from the capital to assist in addressing the London-centric focus. This is important as historical comparisons of life expectancy and infant mortality data from urban centres across the UK in the nineteenth century have suggested that these vary, with Bristol appearing to have a higher-than-average life expectancy, and also a low infant mortality rate, when compared to London and other growing cities of the period (Szreter & Mooney 1998; Williams & Mooney 1994).

### **St George's Cemetery, Bristol**

In 2016 the cemetery to the north-east side of the church of St George's, Bristol was excavated by Avon Archaeology Ltd in advance of building works. The site was purchased in

1819 for use as an overflow burial ground for the church of St Augustine the Less, which was situated approximately 400m to the south-east. The new graveyard was consecrated in 1820, but subsequently, between 1821-23, a new church was built on the same site, being consecrated in the latter year. This was the present St George's, and although originally a chapel of ease to St Augustine the Less, it was elevated to full parochial status in 1832. The parish boundary was very carefully drawn to run parallel to, and tight against, the eastern wall of the church. This meant that the church itself, and everything to its west, was in the new parish of St George's, but the entire eastern side of the churchyard remained in the parish of St Augustine the Less (Potter 2017). Under the Public Health Act of 1848, burials at St George's were restricted from 1854 onwards to only one body in each grave and no burials within five yards of a building (Latimer, 1887, 338); the cemetery remained in use until about 1885. The 2016 excavation was carried out in the eastern half of the graveyard, that portion belonging to the parish of St Augustine the Less, and 384 burials were exhumed and recorded from three areas representing three terraces separated by retaining walls (Potter 2017).

The nineteenth century was a time of rapidly increasing population and urbanisation, with increasing bureaucracy and documentation associated with it. During the nineteenth century the population of Bristol grew rapidly from 64,095 inhabitants in 1801, almost tripling in size to 182,552 by 1871 (Latimer 1887). For the period that St George's graveyard was in use, we have access not only to parish registers, but also street directories, death certificates, census records, and newspaper articles, which provide us with a wealth of information relating to age at death, occupation, family status and childbirth, place of birth, and causes of death and injury. This gives us the opportunity to compare the osteological analysis to these independent sources of evidence for the named individuals, to aid in our

understanding of these individuals' lived experience and how this might manifest on the skeleton.

This chapter will provide the evidence for five named individuals excavated from St George's, Bristol, the first collection excavated from Bristol to have named individuals. The recovery of in-situ well-preserved grave markers and coffin plates, allow the identities of these individuals to be known, facilitating the exploration of the documentary evidence combined with the osteoarchaeological evidence to gain an insight into their lives and deaths. This also creates the opportunity to explore how these different data collection methods, and the information obtained, complement each other. Information obtained on these individuals enables us to reflect on the experience of people who may often be neglected in historical research including those from the working classes, women and children, as well as explore the lives of a more affluent elderly couple. This chapter also aims to be a call for osteoarchaeologists and historians to work together to enable a greater understanding of the lives, deaths, and disease processes that affected populations living in the nineteenth century. Whilst the skeletal and documentary analysis of the St George's skeletal collection, as a whole, is on-going, the individuals presented here represent a mix of socioeconomic status and range in age from three years to 93 years at death. Analysis of osteological and documentary data concerning these individuals is here organised into three case-studies: firstly, the diagnosis of tuberculosis from the death certificates of two individuals and whether these can be confirmed through skeletal analysis; secondly, the evidence both historical and osteological for accidental injury on one individual illustrating how the two strands of evidence give us a more detailed picture of the repercussions of trauma during the period; and thirdly an exploration of the physical changes associated with the natural

processes of bodily events, such as childbirth, and the ageing process in two elderly individuals.

## **Methodology**

The osteological and documentary evidence for each individual will be explored in order to understand more about the lived experiences of these individuals. Can the information provided by the historical evidence be gleaned from the skeleton and vice versa? It is hoped that in bringing together the skeletal and historical evidence for these individuals that they will complement each other and add to our knowledge of both the individuals themselves and to the success and limitations of our methodologies.

Individuals were identified either by the presence of an inscribed ledger slab overlying the grave or vault, or that of an engraved coffin plate (*depositum*) directly overlying the skeleton. These inscriptions provided names, dates of death and sometimes age or date of birth, which were then used to search for additional documentary records related to the individuals and their families. The documentary evidence consulted included, but was not limited to, death certificates (ordered directly from the General Register Office (GRO)); parish registers and census records (accessed via [Ancestry.co.uk](https://www.ancestry.co.uk)); street directories and poll books (accessed via [google books](https://www.google.com/books)); local newspaper articles (accessed via [britishnewspaperarchive.co.uk](https://www.britishnewspaperarchive.co.uk)), and the letters of George Cumberland housed in the British Library and transcribed by Jane Evans (2022). The skeletal remains were initially analysed without any prior knowledge of the documentation that accompanied each individual; this was to ensure there was no bias in the assignment of age and sex determination.

Age estimation for the immature individual was established using standard osteological methods for the dentition (Moorrees *et al.* 1963a, 1963b; Smith 1991; and bony skeleton (Scheuer & Black 2000). Age and sex determination for the adult remains utilised

(Brooks & Suchey 1990; Buckberry and Chamberlain 2002; Buikstra & Ubelaker 1994; Iscan as cited in Bass 1995; Lovejoy *et al.* 1985; and Meindl & Lovejoy 1985). Stature estimation was calculated using the prediction equations of Trotter & Glesser as cited in Brothwell & Zakrzewski (2004, 33).

## **1: Tuberculosis**

Two of the five individuals examined in detail in this study, Maria McVey Taylor and Thomas Rokeby Price, provide an opportunity to explore the impact of tuberculosis on the skeleton in association with historical evidence for their socioeconomic status. Tuberculosis (TB) is commonly a disease of the respiratory system caused by *Mycobacterium tuberculosis* (and sometimes by other member species of the *M. tuberculosis* (MTB) complex), also known as consumption (Magyar 1999). Tuberculosis was the leading cause of death at the beginning of the nineteenth century (Roberts & Buikstra 2003, 16), and in 1839 was responsible for 17.6% of all deaths in England (Lane 2001, 142). The disease can manifest in a variety of different ways in the skeleton and both bone destruction (Martini and Boudjemaa 1988) and periosteal bone formation (Eyler *et al.* 1996) have been observed in clinical studies of patients with tuberculosis, however, the former tends to be more readily identified and reported within skeletal remains. The spine is the most commonly affected skeletal region in clinical cases of tuberculosis, for both children and adults (Silva 1980; Thijn and Steensma 1990). Termed “Pott’s disease”, the cause of bony destruction is from a focal abscess at the anterior surface of the body of one or more vertebrae. The pressure applied can cause localised resorption of the vertebral body creating a scalloped and eroded appearance to the spine (Aufderheide and Rodriguez-Martin 1998; Ouahes and Martini 1988). If the destruction of the bone becomes severe this will eventually lead to collapse and curvature of the spine known as a pathological kyphosis. Roberts & Buikstra (2003, 225) note that in the past the



signs and symptoms of TB could be mistaken for other pulmonary diseases and ‘one cannot ever be certain that what is being described in historical data is actually tuberculosis’. The name tuberculosis was assigned in 1839 by Schoenlein who defined all of the diseases associated with tubercles under this term (McMillen 2016, 75). Padiak (2009) discusses the retrodiagnoses of TB and the variety of terms used for the disease, in historical documents, due to the manifestation of the disease being variable and the terminology being focused on the part of the body affected. Therefore, socially these individuals were diagnosed as having TB whether that fits a modern diagnosis of the presence of the tubercle bacillus or not. Indeed, the tubercle bacillus was not recognised as the specific cause of pulmonary TB until 1882 (Lane 2001, 142).

### **Maria McVey Taylor (SK293)**

Upon excavation, SK293 was found to have a well-preserved depositum or coffin plate, which enabled the individual to be identified as Maria Taylor, who died on the 4 January 1845 (see Figure 7.1a). Maria was the wife of George Edward Taylor, a leather seller. Her cause of death as noted on the death certificate was of consumption (see figure 7.2) and her husband was present at the death, which took place at 8 Host Street. Maria was buried on the 12 January.

[figure 7.1 near here]

[figure 7.2 near here]

The remains of Maria Taylor were well preserved and her skeleton was more than 75% complete, with only a few small bones of the hands and feet being absent. Copper alloy staining was present on her left parietal (skull bone), left mandible (lower jaw), left femur (thigh bone) and one vertebral body indicating the presence of copper funerary dress pins. Her skeleton was generally very gracile and features of the pelvis and skull both indicated a female individual matching the identity from the coffin plate. Her estimated stature was calculated to be  $158 \pm 3.66$  cm (5 foot 2 inches). The osteological methods suggested an age between 18-25 years at death with the sternal end of the clavicle (collar bone) still in the process of fusing, and the death certificate confirmed that Maria Taylor died on the 4 January 1845, aged 23. Although still a young adult this individual had evidence for poor oral health with antemortem (before death) tooth loss of three upper premolars. She also had carious lesions in six teeth; four small interproximal caries on the upper dentition and two large cavities on the lower second molars. The presence of grade 2 healed cribra orbitalia (as defined by Stuart-Macadam, 1991) may indicate a stress or malnutrition episode earlier in this individual's life. Cribra orbitalia is thought to be associated with iron deficiency anaemia (Mensforth *et al.* 1978), vitamin B12 deficiency (Walker *et al.* 2009), parasitic infections (Lewis 2007, 113), or possibly a combination of all three.

Pathological lesions that are of interest here, related to the cause of death as consumption, are the destruction of bone on the inferior surface of the fifth lumbar vertebrae and on the superior surface of the body of the sacrum (see figure 7.3). The destruction of the bone is most marked on the left side and there is the presence of small cloacae (pus-containing abscess cavities) at the centre of both elements. There is no evidence for bone formation on either element and none of the other vertebrae are involved.

[figure 7.3 near here]

The skull for this individual was very fragmented, but endocranial lesions (lesions on the internal surface of the skull bones) could still be recorded. These were most marked on the frontal bone (see figure 7.4), and also occurred on fragments of the parietal and occipital bones.

In assessing the skeletal lesions present on the remains of Maria we can suggest a diagnosis consistent with TB. Whilst the lesions on the spine are only present at the very base this localised resorption does permit a diagnosis of TB. Areas of bone formation and resorption termed endocranial lesions (Lewis 2004) or *serpens endocrania symmetrica* (SES) (Hershkovitz *et al.* 2002) are also thought to be an indicator of tuberculosis and especially linked to tuberculous meningitis in children (Roberts and Buikstra 2003: 101). Hershkovitz *et al.*'s (2002) research focused on adults from the Hamann-Todd collection, where they found the frequency of lesions observed was eight times greater in individuals known to have died from tuberculosis. These lesions fit the description of those seen on the skull of Maria and give further skeletal evidence for a diagnosis of TB which matches the cause of death noted on the death certificate. However, while in conjunction the lesions do suggest a diagnosis of TB neither represent lesions that are pathognomonic (uniquely diagnostic) of the disease and without the diagnosis from the death certificate other types of non-specific infectious disease such as osteomyelitis of the lower spine could not be ruled out (Waldron 2009, 93).

[figure 7.4 near here]

So whilst Maria had a relatively short life, in which time she contracted and died with tuberculosis, access to the documentary sources in association with her skeletal remains can provide us with greater insight into her life than the skeletal remains alone allow. Maria McVey was born on the 3 February 1822, and was baptised on the 3 March of the same year, in Canterbury, Kent, and recorded as the daughter of William and Mary McVey. The baptism took place in an Independent chapel, which suggests that the McVey family were Nonconformists. Her parents had had previous children, with the baptism of a daughter in 1813 giving William's occupation as that of a Bombadier in the Royal Artillery (the equivalent of a Corporal); indeed, four McVey children, including Maria, are listed in Royal Artillery baptism records, two baptised in Canterbury, two in Weedon, Northamptonshire (National Archives, AB91 Army Births and Baptisms, Findmypast.co.uk accessed 2021).

A William McVey who served in the 3<sup>rd</sup> battalion of the Royal Artillery has been discovered who may be the same person as Maria's father. He enlisted in 1804, was promoted to Bombadier in c.1812, promoted again to Sergeant around 1823, and was finally pensioned off in 1825. He was discharged from the Army at Manchester and returned to Glasgow, the place of his birth. The military record notes that he died in October 1826 aged 40 (Findmypast.co.uk, British Army Service Records, accessed 2021). If this is Maria's father, the McVey family would have moved frequently in Maria's early childhood, and the loss of her father may have reduced their circumstances substantially. The family had probably returned to the south of England prior to 1838 as one of Maria's sisters was married in Canterbury in that year. It is possible that Maria's mother moved back to her own parish for poor relief. The loss of her father at a young age, and the reduction in circumstances as a consequence, is in line with the evidence for nutritional deficiency likely during her childhood reflected by the presence of cribra orbitalia.

In 1841, the census records Maria living with her mother and two sisters in Canterbury (Ancestry.co.uk, accessed 2021; all born in Kent). Her mother, Mary, is recorded as a dressmaker, and while no occupation is recorded for the three daughters, it seems unlikely that young women aged between 15 and 26 had no employment of any sort; it is possible that they assisted their mother in her work. Dressmaking was one of the few respectable occupations available to women in the mid-nineteenth century, but was often poorly paid (Thackrah, 1831, 31). Additionally, long hours, often in poor lighting, and sedentary occupation, with ‘a bent posture’ (ibid.), frequently resulted in ‘destroy[ing] the health of the young women [...] the digestion especially suffers, and also the lungs’ (Evidence taken by Children’s Employment Commission February 1841, Appendix to the Second Report 1842, f208).

Maria married George Edward Taylor of Bristol, then a leather cutter, and the son of a bootmaker, on the 16 September 1843, at St Marylebone, Westminster. Her father’s occupation was recorded on the marriage certificate as ‘spirit merchant’ (Ancestry.co.uk, accessed 2020). A William McVey has been found in a Glasgow directory of 1825 described as a vintner, which may fit with the soldier described above (McFeat, 1825, 165). There are no McVeys in Canterbury in the Pigots Directory of Kent for 1824 (Pigot, 1824, 378-382). No occupation is given for Maria herself on her marriage certificate, which is not unusual at this period. On the 1851 census, Maria’s widowed mother, who is living with her eldest daughter’s family, is recorded as a former laundress who was born in Canterbury (Ancestry.co.uk, accessed 2021). There is no evidence to suggest that Maria and her husband had any children in the short time they were married; no baptisms are recorded with their names.

Maria's story presents us with a young child who loses her father and, in consequence, her family were likely to have suffered from a reduction to their socioeconomic status. She appears to have moved around the country during her life, possibly between Glasgow and Canterbury, until her final resting place in Bristol. These are all urban centres and it is likely she worked indoors for long hours to aid her mother in supporting the family until her marriage in 1843. The circumstances of her life led her to contract TB and perhaps her poor health and nutrition during childhood led to her early demise from this disease at the age of 23 years. Our second case illustrates how TB could equally affect individuals from more wealthy backgrounds and the impact that the disease could have on young children.

### **Thomas Rokeby Price (SK7)**

On initial excavation of Area 1 (the uppermost terrace), three previously unknown ledger slabs were uncovered, including one recording the names and dates of Rhys Uvedale Price, born 18 August 1851, died 20 February 1852, and Thomas Rokeby Price, born November 1849 (date illegible), died (month and date illegible) 1853. Upon excavation of the location of this ledger, two coffin voids were found, a larger one on top of a smaller. A single juvenile skeleton was found collapsed into the lower coffin void (see figure 7.1b). SK7 was found on osteological analysis to be a child of approximately 2-3 years, and was therefore identified as the older of the two children memorialised, Thomas Rokeby Price. His death certificate stated that he died on 27 March 1853, aged 3 years, of tuberculosis and 'convulsions following hooping [sic] cough' (see figure 7.2).

The skeletal remains of Thomas Rokeby Price were well preserved and more than 75% complete, with only some of the small bones of the hands and feet, some epiphyseal ends of the long bones, and part of the pelvic girdle being absent. Two circular patches of

greenish copper alloy staining were seen on his skull (right and left parietal bones) indicating the presence of shroud pins. Pathological lesions were recorded on the skeleton as a marked fine layer of porous woven bone on the shafts of both femora (thigh bones), the right tibia (shin bone), and the left and right ilia (pelvis). Lighter patches of woven bone were also noted on several of the rib ends. No other indicators of disease were noted on the skeleton.

Instances of woven bone growth are fairly common findings on infant and child skeletons; in many cases these are recorded as periosteal new bone growth, periostitis, or non-specific infection and the aetiology is unknown.

The range of skeletal lesions on Thomas are quite different to those manifest on the skeleton of Maria. Some of these have been associated with TB in the literature, however, on their own would not be confidently diagnosed as TB. Periosteal new bone formation has been seen on the ribs of both adults (Santos and Roberts 2006) and immature individuals (Santos and Roberts 2001) of known identity where a cause of death related to tuberculosis was documented, especially where it occurs on the visceral (inner) surface of the ribs. Santos and Roberts (2006) have cautioned that care needs to be taken in diagnosing rib lesions in archaeological remains, as although they appear more common in those with tuberculosis they are not pathognomonic of this disease. Indeed, other pulmonary infections that have been shown to cause similar rib lesions in clinical settings include pneumonia and actinomycosis (Lambert 2002). In the case of Thomas, the rib lesions are not on the visceral surface so a diagnosis of TB from these cannot be attempted here. The other lesions across the skeleton are also non-specific although cases of children with periosteal new bone formation in association with other evidence for TB have been seen. New bone formation has been observed on the long bones (Lewis 2011; Santos & Roberts 2001) and in particular the

femora (thigh bones) (Dawson & Robson Brown 2012; Santo & Roberts 2001), and the ilium and ischium (pelvis bones) (Stirland 2009).

Thomas Rokeby Price, born November 1849 in Holtby, Yorkshire, was the second child and eldest son of Thomas Charles Price and his wife Ellen (nee Taylor). By 1852, Thomas Charles Price was the vicar of St Augustine the Less, Bristol, the parish to which the north-eastern part of the graveyard at St George's belonged. The Rev. Thomas Charles Price was a grandson of Sir Charles Price, 1<sup>st</sup> Baronet (1747-1818) (Ancestry.co.uk, accessed 2020).

There is surviving documentary evidence that both Maria Taylor and Thomas Rokeby Price suffered from tuberculosis. The evidence from the death certificates recording tuberculosis allows us to recognise that the lesions described on their skeletal remains are likely to be associated with this disease. This is important as often when diagnosing such lesions palaeopathologists would tend to err on the side of caution unless the more classic presentations of destructive lesions to the spine and joint surfaces are in evidence. So here the documentary evidence is key and can provide an insight into the more subtle lesions that occur as a consequence of TB, particularly on young children, but also young adults, such as Maria, where the lesions are clearer but still not pathognomonic.

## **2: Trauma and occupation**

The next individual discussed provides us with information on a traumatic injury and leads us to consider how this would have affected their occupation and lifestyle. Usually when presented with healed trauma in the archaeological record the cause of the injury is unknowable and can only be inferred by the type of fracture. Ives *et al.* (2017) explored hip fractures in skeletal remains from urban cemetery excavations from the eighteenth and



nineteenth centuries, determining that accidental falls, both of low and high impact were often the cause, although underlying conditions such as age-related loss of bone density were also a factor. For the long bones, different types of forces can create different fracture patterns. Oblique fractures tend to occur due to an angulated and rotated force, whilst spiral fractures occur due to rotational and downward loading stress to the bone although when healed Lovell (1997) notes that they can be difficult to distinguish from each other. Therefore, determining the ultimate cause of the fracture from the skeletal evidence alone can be problematic, with fractures of the leg bones often being attributed to accidental injuries in the past such occupational hazards associated with farm work and manual labour (Judd & Roberts 1999; Burrell *et al.* 2018). In this case study we not only have the evidence for the healed trauma on the skeletal remains but a vivid account of the cause of the fracture.

### **Mark Kelson (SK48)**

Upon excavation, SK48 was found to have a well-preserved depositum or coffin plate, with a legible inscription, which identified the individual as Mark Kelson (see Figure 7.1c). Mark Kelson was born in or before 1801, and was baptised on the 26 July 1801 in Iron Acton, Gloucestershire, 9 miles northeast of Bristol. He was the son of William Kelson/Kelston and Sophia Pullen, and his father was recorded as a Labourer.<sup>1</sup> As was Maria McVey Taylor, Mark Kelson was recorded as having died at Host Street (no. 24), St Augustine parish, on the 8 July 1857, indicating he was between 55-56 years old. Host Street in the mid nineteenth century seems to have been considered a relatively poor area. Latimer (1887, 174) notes that in 1831 large quantities of stolen goods were retrieved from a house on this street, and the

---

<sup>1</sup> The Iron Acton parish register of baptisms records the father's profession, uncommon before 1812, and the mother's maiden name, unusual at any time. Accessed at Ancestry.co.uk, 2020.

street is associated in his account with ‘the slums of the city’. This reinforces the relevance of these cases for understanding the lives of the labouring poor.

The remains of Mark Kelson were well preserved with the skeleton being more than 75% complete with only a few small bones of the hands and feet, and the right patella (knee cap) being absent. Copper alloy staining was observed on the frontal bone, lower right ribs, and the right femur, showing a similar pattern to Maria Taylor (SK293) in the placement of inferred shroud or funerary dress pins. His age at death based on skeletal degeneration was more than 50 years old; with the Lovejoy *et al.* (1985) auricular surface method suggesting the most precise age of between 50-59 years, while that of Buckberry and Chamberlain (2002) gave a range of 39-91 years with a mean age of 66 years. Features of the pelvis and skull were consistent with a male individual.

His estimated stature was calculated to be 172cm  $\pm$ 2.99 cm (5 foot 7 inches). He had lost at least nine teeth antemortem, and the upper wisdom teeth were also missing but appear to have been congenitally absent (i.e. they never erupted). Only one carious lesion was noted in the remaining dentition. There was some evidence for enamel hypoplasia on four teeth suggesting an episode of stress or malnutrition in childhood, something more common in individuals of low socioeconomic status (Hillson, 2003). At St Martin’s, Birmingham, a higher prevalence of enamel hypoplasia was observed on individuals from earth-cut graves (73%) than those from the burial vaults (47%) (Brickley *et al.* 2006). Some slight degenerative joint disease (osteophytes) was seen on the spine, both shoulder joints, the left knee joint and the right thumb, with more marked degeneration (including porosity) on the left ankle joint. Healed trauma was observed on the left tibia which appears to have broken in more than one place. The line of fracture appears to be oblique though the fracture may also have been comminuted (comprised of multiple fragments); however, the fracture callus

obscures this (Lovell 1997). There is some misalignment of the distal (lower) shaft towards the lateral side of the healed bone (see figure 7.5). There are still plaques of lamellar (healing) bone observable as well as a cloaca in evidence on the posterior shaft although the fracture is well-healed.

[figure 7.5 near here]

Mark Kelson married Mary Colston on 14 November 1836 at Frome, Somerset. On the 1841 census he and his wife were living on East Street in Bedminster, and he was described as a ‘hallier’, which is thought to be someone hauling coal or iron ore from the mines.

On Saturday 18<sup>th</sup> February 1843 a local newspaper, the Bristol Mercury (BNA), reported Kelson to have been riding a horse at the top of Union Street, when the animal stumbled and fell upon him. This fall broke his leg, a break which was described as a compound fracture – a fracture in which there is an open wound or break in the skin near the site of the broken bone. He was taken to the Bristol infirmary on the evening of Tuesday 14 February 1843, and treated there. The record of his treatment for a compound fracture survives in the Bristol Archives (BRO 35893, Outpatient admission registers, fiche pages 20-21). The Bristol Royal Infirmary logbooks record the name, age, parish, subscriber, dates of admittance and discharge, distemper and the result/outcome (Witkin, 2011, 9). In the case of the ‘subscriber’, Mark Kelson’s record states only ‘Casualty’ rather than a name, meaning that he was admitted as an emergency, which did not require a letter of recommendation from a subscriber (Ibid., 49); additionally Witkin (ibid., 43) states that most casualty patients were

surgical cases, which suggests that amputation may have been considered; Mant (2020, 445) notes that this was often the case for compound fractures in the London General Hospitals. His injury is described in the logbook as a ‘comp[oun]d fracture’, he was admitted on the 14 February, and discharged in June (possibly the 6<sup>th</sup>; unfortunately the date is indistinct in the record), indicating his stay was for approximately 112 days. The result is recorded as MOP, which probably signified ‘made outpatient’ (Witkin 2011, 47). It is possible that this information was duplicated from Inpatient records. The healing process appears to have taken approximately three months which appears standard for an adult fracture (Ibid., 248). Mant (2020, 451) notes the average stay for a compound leg fracture in the London hospitals of the eighteenth century was 121 days, indicating a similar level of care and recuperation. It is unknown whether casualty/emergency patients were required to pay for their treatment.

In this case, we have the cause of the trauma being associated with a horse riding accident, perhaps indicating a rotational force to the foot and lower leg as it was caught in the stirrup as the horse fell and/or the direct trauma of the weight of the horse to the lower leg. The recording of this incidence in the local papers and subsequent hospital record along with a known date of death also provides us with a very accurate timeframe for how longstanding the fracture is (14 years and 4 months) and it is interesting that, whilst this is well beyond the time suggested for the remodelling to occur, Lovell (1997) suggests a range of 6-9 years for remodelling of fractured long bones, there were still plaques of lamellar bone present on the shaft. Unfortunately, the right tibia was too damaged to allow a metrical comparison to assess the shortening that had occurred due to the misalignment.

The left fibula also has an oblique fracture in evidence but at the proximal (upper) end also with some slight misalignment and a small projecting spicule of bone to the anterior. Fractures of the fibula have been associated with accidental injuries involving rotation of the

foot (Tucker *et al.* 2017). It is likely that the degenerative joint disease (DJD) observed on the left ankle has occurred in relation to this incident, this may be due to rotation of the foot during this incident, certainly a possibility if the foot becomes caught in a stirrup. It is also possible that the DJD is secondary to the trauma, with a change to the mobility of Mark Kelson and the misalignment of the lower leg bones causing stress to the ankle joint. Musculoskeletal stress markers, associated with physical activity, are present on some areas of his skeleton, such as the radial tuberosity (lower arm), and costo-clavicular area (shoulder), along with marked enthesophytes (ossification at tendon insertion sites) on the proximal ulnae (lower arm), and right calcaneus (heel bone). This evidence is indicative of a physical lifestyle (Hawkey & Merbs 1995), likely to be associated with his occupation as a ‘hallier’.

The injury and its repercussions appear to have created long-lasting impacts on Kelson’s working life. In the newspaper report from 1843 he is described as being in the employ of a Mr Rowe of Redcliff Street. This may have been Charles and Thomas Roe, who were corn factors at Redcliff Street (*Bristol Poll-Book*, 1841). Between 1848 and 1849, five years after the horse riding accident, Kelson was listed in city directories as keeping a coffee and eating house, which is described in a newspaper as ‘the Tiger’s Head Beer-house’ (*Canterbury Journal, Kentish Times and Farmer’s Gazette*, Saturday 10 June 1848, BNA).<sup>2</sup> This seems to have also been known simply as the ‘Tiger’ (Bristol’s Lost Pubs website, accessed 2020), and was situated at 57 Redcliff Street (Hunt & Co., 1848, pp78 and 82). It is possible that his injury and associated conditions as discussed above had required him to find alternative employment at least temporarily, since on the 1851 census, he was once more described as a labourer and living as a lodger, in the house of Edward Colston, on Lawrence

---

<sup>2</sup> Mark Kelson was a witness in a trial regarding hops stolen from a farmer in Kent; the defendant in the case had rented a room at the Tiger’s Head in which the hops were stored for some time. There was, however, no suggestion that Kelson was implicated in the crime.

Hill, and recorded as married (although his wife was not present) (Ancestry.co.uk, accessed 2020).

[Figure 7.6 near here]

On the 8 July 1857, Mark Kelson died at 24 Host Street, St Augustine parish. His death certificate describes him as a Corn Porter, and the cause of his death was recorded as being ‘Bronchitis Ch. [chronic]; Hydrothorax [fluid in the pleural cavity]; Anasarca [generalised oedema or fluid retention, caused by organ failure]’ (see figure 7.6). His wife Mary was present at the death. The account of the accident and hospital records alongside the evidence for the injury on Mark Kelson’s skeletal remains provide us with a rare example: from the historical record we know the specifics of the cause of trauma and we can also identify this through osteoarchaeological analysis from the healing process to the bone. In this case, the two types of evidence complement each other well and illuminate the repercussions of the accident for Kelson’s life.

### **3: Changing bodies due to childbirth and senescence**

The final two individuals that will be presented are unusual in terms of the old age that they both managed to attain, and in the fact that there is a wealth of historical documentation for the pair including letters written in their own hands. It is unusual when dealing with archaeological skeletal remains to contemplate that the individuals may have reached much further than the sixth decade of life as most osteological techniques can only age confidently up to around 50 years of age. The presence of an elderly couple of known age at death can

offer us an insight into the degeneration of the skeleton, how this compares to current ageing techniques, and allows us to touch on the personal experience of these individuals and their own ageing bodies. When dealing with females where we have records of the children that they bore we can also assess the pelvis for areas of degeneration associated with parturition scars (Kelley 1979; Tague 1988).

### **Elizabeth (SK272) and George Cumberland (SK273)**

SK272 and SK273 were excavated together in a location underlying a ledger slab with the following inscription:

SACRED  
to the Memory of  
ELIZABETH CUMBERLAND,  
who died 2nd. Feby 1837  
in the 86th. Year of her Age.  
Also  
GEORGE CUMBERLAND,  
Born 27th. Of Novr. 1754,  
Died 8th. of Augst. 1848,  
In the 94th. Year of his Age.”

One skeleton overlay another, and both were found with poorly preserved depositum plates which enabled the uppermost and later burial to be identified as George Cumberland, and the lower, earlier burial that of Elizabeth (see Figure 7.1d).

Elizabeth Cumberland was born in about 1752 as Elizabeth Price, the daughter of Rice and Sarah Price. Almost nothing is known about her parents and their status, however, a letter exists which refers to her ‘fortune’ of £500;<sup>3</sup> this is a significant sum at a time when only one in five families had an annual income of more than £50 (Probert, 2009, 432). An income of fifty pounds per annum has been suggested as the minimum sum ‘at which it was possible to aspire to membership of the middling sort’ (Langford, 1998, 62); a ‘fortune’ of ten times this amount suggests that Elizabeth’s family should be regarded as such. She died at the Lodge, Culver Street, Bristol, aged 85 or 86 (*Bath Chronicle and Weekly Gazette*, Thursday 9 February 1837, BNA). Unfortunately, no death certificate exists as she died just before the commencement of civil registration on 1 July 1837.

The skeletal remains of Elizabeth were well preserved and more than 75% complete, with only the sternum and a few small bones of the hands and feet being absent. Copper alloy staining was observed on the right distal radius and iron coffin studs were adhered to the right femur, humerus (upper arm) and iliac crest (pelvis) and to the left radius (lower arm), indicating a decorated coffin. The skeleton was aged using osteological methods to 60+ years old at death from the auricular surface methods of Lovejoy *et al.* (1985), with those of Buckberry & Chamberlain (2002) suggesting a mean age of 72 years. The skeleton was fairly gracile and features of the pelvis and skull both indicated a female individual. Her estimated stature was calculated to be 168 ±3.51 cm (5 foot 6 inches).

George Cumberland was born on 27 November 1754 (according to his gravestone), the younger son of George Cumberland and Elizabeth (nee Balchen), a family described as belonging to the upper middling sort (Greenacre, 2014). From 1769 he was an insurance clerk

---

<sup>3</sup> Letter of 11 Sept 1822 British Library (BL.) Add Mss 36509, f120. [PH.0129], transcribed by Jane Evans (2022).



with the Royal Exchange Assurance Corporation, earning £60 per annum by 1775 (Black, 1912, 86). Cumberland was admitted as a student at the Royal Academy Schools in 1772, where he joined a social circle that included William Blake (the artist and poet 1757-1827), who became a lifelong friend (Greenacre, 2014). In 1784, he received an inheritance which provided him with an annual income of £300, which enabled him to leave his job; between 1785 and 1790 he travelled in Europe, living mainly in Rome (*ibid.*). Cumberland was known to his contemporaries as a ‘gentleman polymath’, and wrote on a broad variety of subjects including geology, conchology, and art theory and history, as well as publishing various works of poetry, fiction and biography (Bentley 1997, 155). He was in addition an artist, engraver and inventor (*ibid.*).

The skeletal remains of George Cumberland were also well preserved and more than 75% complete, with only a few small bones of the hands and feet being absent. Copper alloy staining was observed on the left temporal bone (skull), sternum, parts of the spine, the right side clavicle, radius, femur and tibia, and the left femur and fifth metatarsal (foot bone). Some iron studs were adhering to the left humerus and fibula, indicating the presence of a decorated coffin, the remains of which including the coffin handles can be seen in Figure 7.1d; iron staining was also observed on the left ulna and right humerus.

The skeleton of George was assigned an age of at least 50 years at death from both the auricular surface methods of Lovejoy *et al.* (1985) and Buckberry & Chamberlain (2002); these could not be scored fully due to post-mortem damage on the area. The sternal rib ends confirmed this assessment suggesting an age range between 54-64 years. The ledger slab indicates he died at the age of 93 years. The features of the pelvis and skull confirmed that the individual was a male. Only the humeri (upper arm bones) were complete to enable measurements to be taken to determine estimated stature. Due to some asymmetry of the

humeri stature was estimated at 167cm  $\pm$ 4.05 from the left side and 169cm  $\pm$ 4.05 from the right side (around 5 foot 6 inches).

Though Elizabeth and George were buried together, he was not technically her husband. On 23 February 1773 Elizabeth had married Benjamin Cooper, a builder, in the parish of St Dunstan in the West (the groom being of St Clement's East-Cheap), and they had five children who were registered in the 'Protestant Dissenters' Registry of Births from Dr Williams' Library' on 17 October 1799: Ann (born 8 September 1775), Benjamin (born 11 August 1778), Sarah (born 17 June 1780), Elizabeth (born 9 January 1782), and Georgiana (born 17 November 1784).<sup>4</sup> A sixth child, Jane, was born c.1786, but was apparently not registered. Her existence is known from letters and newspaper notices.<sup>5</sup>

While in London George lodged with the Cooper family (including Elizabeth). Remarkably, in about 1787/88 (certainly before July 1788) he was reported to have taken 'the abused wife and children of his former landlord' back to Italy with him (Stemmler, 1992, fn.20). A letter from George to his mother states that one of the reasons for leaving the country was the 'cold receptions' given to his new family (Stemmler, 1992); this suggests that they may have attempted to live together in England prior to leaving for Italy. The reference to abuse implies that the Cooper's marriage had not been a happy one. However, William George Meredith, the nephew of an associate of Cumberland, recorded an anecdote in his commonplace book of 1829-30 which states that '[t]hey were always very friendly & Cooper used to drink tea with them occasionally' (King, 1972, 155). It is possible that friendly relations were maintained in order to keep in contact with the children left behind

---

<sup>4</sup> The Dissenters' register recorded the children's dates of birth, parent's names and maternal grandparents' names. Information from Ancestry.co.uk, accessed 2020.

<sup>5</sup> Such as a notice inserted in the Public Ledger and Daily Advertiser on Monday 30 September 1822, stating that the partnership between Elizabeth, Georgiana, and Jane Cooper and Aurora Cumberland, milliners, had been dissolved (BNA).

with their father, of which there were three according to Meredith (*ibid.*). Certainly these children wrote letters to their mother and visited occasionally (Evans, pers. comm.).

George made a financial settlement with Elizabeth's husband, which involved 'sacrificing above £1500 for [her] emancipation, in addition to the loss of £500 her only fortune'.<sup>6</sup> Elizabeth herself stated in a letter of May 1788, 'I am now your own for you have paid dearly for me' (Stemmler, 1992, fn20); this is the only reference to a letter written by Elizabeth that has been found. Meredith stated that Cumberland had paid £2000 (King, 1972, 155). Such settlements did not amount to a legal divorce, which at this period could only be obtained by a separate Act of Parliament, and as such was an escape route open only to the very rich (Sharpe 1987, 63). However, much like the wife-sales which were occasionally mentioned in newspapers of the late eighteenth and early nineteenth centuries, the intention of such a transaction would have been 'to deprive the husband of any right of prosecution for damages' ('Smithfield Bargain', *Kentish Weekly Post*, 18 July 1815, BNA). There is no evidence to show that George and Elizabeth ever married legally, which indeed without a divorce could only have happened after the death of her husband (the date of which has not yet been found).

The historical evidence of childbirth is notable in this case. With six children already, Elizabeth had her first two children with George born in Rome, Lavinia (5 November 1788) and George (11 January 1790), who, on the families' return to England in 1790, were both baptised in London on 24 February 1792 (Ancestry.co.uk, accessed 2020). Three further children were born to the couple: Aurora (born 24 April 1792 in London), Sydney (born 1 October 1795 in London), and Eliza Martha (born in 1798 at Bishopsgate, Windsor) (*ibid.*).

---

<sup>6</sup> Letter of 11 Sept 1822 BL. Add Mss 36509, f120. [PH.0129], transcribed by Jane Evans (2022).

The couple moved to Weston-super-Mare in 1803, and then finally to Bristol in 1807 (Greenacre, 2014).

The historical documents therefore contain the names of eleven children borne by Elizabeth. Kelley (1979) and Tague (1988) have both suggested pitting and bone resorption on the pelvic bones can be indicative of childbirth. However, the study by Molleson and Cox (1993) on parity status of the named females from Spitalfields suggests that neither dorsal pitting of the pubis nor the presence of a marked pre-auricular sulcus (both cortical bone defects present on the pelvic bone) appeared to have a relationship to pregnancies. No marked pre-auricular sulcus was noted on Elizabeth's remains and the pubic bones were too damaged to be able to assess the area for dorsal pits. The pubic symphysis (the joint surface where the left and right pelvic bones articulate) was present for the right side and was very porous with marked eburnation (polishing association with complete degeneration of the soft tissues of the joint). This feature has been termed osteitis pubis and has been associated with childbirth in females (Lentz 1995; Alicioglu 2008) but also with physical activity associated with collision sports in males (Judd 2010). The problem here is that the pubic symphysis is also an area that degenerates through age, so whether the extreme destruction of this joint is due to the many children Elizabeth bore or to her advanced age cannot be known.

Evidence of ageing and age-related diseases to the bones and teeth were visible on both Elizabeth and George's remains. Elizabeth Cumberland had lost all the teeth of both the upper and lower jaws antemortem and there was considerable reduction to the bone of the maxilla (upper jaw). As might be expected on an individual of this age, there was evidence for degenerative joint disease across the skeleton including the spine, hips, knee joints, hands, ankles and shoulder girdle. The presence of eburnation suggests a diagnosis of osteoarthritis in the wrists and hands. Most of the dentition of George Cumberland had been lost

antemortem with only two teeth (the upper lateral incisor and canine) being still present in the jaw. Marked degenerative joint disease was observed across the skeleton on the spine, the left and right shoulder joint, elbow, wrist and hand. The shoulders, elbows, wrists and hands, as well as the apophyseal joints of the cervical (neck) vertebrae all showed evidence for osteophyte formation, porosity and eburnation indicating a clear diagnosis of osteoarthritis (Waldron 2009, 34).

In individuals of this age, degenerative joint disease would be expected. Osteoarthritis is a common finding among the older individuals in skeletal populations. It is a disease of the joints, involving the breakdown of the articular cartilage, and can be caused due to the degenerative changes associated with the wear and tear of old age. It can also be secondary due to trauma causing later problems within the associated joint, which may have been the case with Mark Kelson as described earlier. Initially the changes to the joint involve new bone formation around the margin of the joint termed marginal osteophytes (MOP), later the joint surface can become pitted and porous and the normal contour of the joint widened or flattened. In severe cases eburnation will be present, this is when the surface of the bone becomes highly polished and smooth, sometimes containing grooves showing the direction of movement of the joint. This polishing occurs due to the constant rubbing of the two articular surfaces or due to the presence of debris within the joint (Waldron 2009, 28). Osteoarthritis is diagnosed only when either eburnation is present or both MOP and porosity (Waldron 2009, 34).

A diagnosis of diffuse idiopathic skeletal hyperostosis (DISH) could be made due to specific lesions seen on both Elizabeth and George's spines. Of the twelve vertebrae in the thoracic spine of Elizabeth the fourth to the eleventh (T4-11) were fused together at the bodies with large flowing osteophytes (bony bridges) down the right side of the eight to the

eleventh thoracic vertebrae. On the spine of George Cumberland the thoracic vertebrae were also fused from the fourth to the eleventh (T4-11) with the large flowing osteophytes indicative of DISH present on the right side throughout.

Diffuse idiopathic skeletal hyperostosis (DISH) is an extreme condition of bone forming which is diagnosed in skeletal remains by the fusion of the vertebral column with a flowing 'candlewax' type of bone formation. This is caused by the ossification of the anterior longitudinal ligament, and tends to be present only on the right side of the thoracic vertebral bodies. The reason that the left side may be spared is postulated to be due to the presence of the aorta descending along the left side of the thoracic vertebrae (Ortner 2003, 559), although the reasons for this are still unclear. The intervertebral disk spaces remain normal. Although the presence of 'candlewax' ossification of the spine along with enthesophytes present on other elements of the skeleton is indicative of DISH a diagnosis can only be made when at least four contiguous thoracic vertebral bodies are fused together along the right anterior side and there is the presence of enthesophytes elsewhere on the skeleton (Aufderheide & Rodriguez-Martin 1998, 97; Waldron 2009, 77). Rogers *et al.* (1987) suggest that while in clinical practice the diagnosis of DISH is only made under these circumstances it is likely that palaeopathologists will be aware of the early changes associated with DISH and Waldron (2009, 77) suggests a diagnosis of early DISH when fewer than four vertebrae are fused. In modern populations DISH is rarely seen in individuals under the age of 50 years and is more common in males than females (Roberts & Manchester 2005, 159).

The two phalanges of the big toe on the left foot of George Cumberland were fused together as well as a proximal and middle phalanx of another of the toes of the left foot. The bones of the right foot are quite damaged and eroded (post-mortem) but there is evidence for a small 'punched out' lesion on the proximal phalanx of the big toe. This could be indicative

of gout (the 1<sup>st</sup> metacarpal is a more common location but is damaged post-mortem). Gout is classed as a metabolic disease characterised by an excessive production of uric acid which can become deposited in the soft tissues as crystals (most frequently of the feet) and causes lytic lesions to the bones (Aufderhide & Rodriguez-Martin 1998, 110).

The letters of George overlap with some of the data in the skeletal record, but provide different information on his bodily experience. According to the letters written by George Cumberland, he suffered from ‘anxiety of mind’ and ‘nervous fever’, indicative of mental health issues; as well as asthma, and gout from at least 1824 (when he was laid up in bed, the complaint having started in his toes). He referred in a letter of February 1802, when he was about 47, to reducing his diet ‘both eating and drinking’, which suggests that he may have struggled with his weight. In later life he was abstemious, drinking only water, possibly a reaction to this and his problems with gout.<sup>7</sup> George was apparently quite accident-prone, noting several incidents in letters to his brother, but tended to write more ‘about the illnesses of others than his own’ (Evans, pers. comm.). Indeed, when he cut his foot quite seriously while bathing, he made light of it, saying that he could ‘hop about very tolerably’.<sup>8</sup>

George Cumberland’s letters also refer to Elizabeth (or ‘Mrs C.’) suffering from ‘rheumatic gout’ or ‘rheumatism’ from at least 1803.<sup>9</sup> Unfortunately her metatarsals (foot bones) had suffered from post-mortem erosion and the phalanges (toe bones) were absent; no signs of any pathological lesions associated with gout were therefore observed. A small button osteoma was present on the frontal bone of Elizabeth. This is a small benign form of bone tumour (Waldron 2009, 173) consisting of a small raised circular area of compact bone.

---

<sup>7</sup> Letters transcribed by Jane Evans (2022); including a letter written at Axbridge February 1802; BL. Add Mss 36500, f76. 21 Dec 1804; BL. Add Mss 36509, f273. 23 Aug 1823, and BL. Add Mss 36510, f91.c 1824.

<sup>8</sup> Letter transcribed by Jane Evans BL. Add Mss 36514, f163v. 1802-3.

<sup>9</sup> Such as letter of July 1803 BL. Add Mss 36514, f177, transcribed by Jane Evans (2022).

This would be symptomless and are fairly common occurring on 1% of modern autopsies (Ortner 2003, 506).

George was blind for the last ten years of his life, but ‘retained his faculties to within one day of his death’, which occurred on the 8 August 1848 at Culver Street (Obituary in *Manchester Times*, October 28 1848, BNA). His death certificate records his age as 94 (although his dates of birth and death as given on the ledger slab would suggest he was 93), and gives the cause of death simply as ‘Old Age’ (see figure 7.6). Interestingly, Bristol was one of the cities to have a specialist eye institution, which was founded in 1810 (Lane 2001, 91), indicating specialist eye care was available in the city.

The skeletal remains of Elizabeth and George Cumberland are rich in evidence, detailing the physical changes to their bodies as they aged, and can in some instances be aligned with the wealth of historic information that provides insights into their sometimes troubled (by ill health) and unconventional lives.

## **Conclusion**

The opportunity afforded by the excavation of a named sample of individuals allows us to create meaningful biographies by combining osteoarchaeological and historical methods and enables us to contemplate the lived experience of the inhabitants of late-eighteenth- and nineteenth-century Bristol. The historical evidence enables the discovery of written ‘stories’ about their lives whilst the osteoarchaeological evidence reveals aspects of their lived experience ‘written’ on their skeletons. These two aspects of evidence allow a fuller recreation of past people’s lives. This combined approach also enables researchers to view



their studies in a new light by adopting ‘a reflective and critical perspective on their own practices’ (pp ref) which Craig Atkins & Harvey identify as one of the key strengths throughout this volume. The reporting of human remains can sometimes appear clinical and detached to humanities scholars outside the archaeological disciplines, as in most cases identities are unknown. However, osteoarchaeological research provides an embodied physicality to the study of past lives, which offers its own form of intimacy. Indeed the same attention can be afforded to all individuals, regardless of whether their lives were documented, and thus the range of embodied experiences that can be obtained is large. In contrast, history focuses on identifiable individuals, providing us with the written detail of people’s lives, but the discipline lacks the physical connection with the actual bodies that osteoarchaeological research can bring. An interdisciplinary approach recreates both the written story and the physical person.

Case-study one explored two cases where tuberculosis was recorded on the death certificates, and whether this disease was observable on the skeletal remains of Maria McVey Taylor and Thomas Rokeby Price. Maria, whilst still only a young adult, has skeletal lesions that could be identified as TB, although these are not pathognomic of the disease. The subtle changes manifest on the skeleton of Thomas would not be confidently diagnosed as TB without the death certificate, although such changes are found in association with cases of TB in children they are also related to other non-specific infections and respiratory diseases. Here the documentary evidence and skeletal analysis combined allows us an insight into the different manifestations and bodily experience of the disease in these two individuals.

Case-study two considered that whilst healed trauma is often easy to identify on skeletal remains, it is much more challenging to discern details about the cause and process of healing. The case of Mark Kelson illustrates how the length of time that bone takes to

remodel may, in some cases, be longer than suggested from modern-day clinical observations. It is rarely possible to reconstruct details of the incident responsible for skeletal trauma, but here the association with a well-documented accident allows us to see the cause of the injury. The historical record gave no indication of the outcome, successful or otherwise, of such treatment as he may have been afforded, therefore the observations on the skeletal remains, which show the misalignment of the healed bone, despite hospital treatment, adds detail to this incident that could not otherwise be gleaned from the historical records. The historical records show that after this accident Mark Kelson changed his occupation from that of a 'hallier' and from 1848 he was working in the Tiger's Head Beerhouse; this may be due to him being unable to continue with a highly physical role while recuperating from the injury and possibly due to further complications, such as osteoarthritis of the ankle joint. The presence of musculoskeletal stress markers also indicates the type of physical lifestyle undertaken by Mark, something likely to be the norm for the labouring classes of Bristol.

The third case-study focused on the natural life changes that could be observed on the bodies of two elderly individuals in their ninth and tenth decades of life, and how these related to the wealth of documentation available. They provide us with an insight into the degeneration of the skeleton that we might expect to observe in the elderly and allow us the rare opportunity to assess individuals we know to be of advanced years. The appearance of degenerative joint disease allows us an insight into the potential life experience in terms of pain and lack of mobility that may have been present for these two elderly individuals. In clinical patients the area surrounding the joint will show swelling and be painful; the joint space is also seen to narrow on radiographs (Waldron 2009). Today DISH is more common in males than females and rarely occurs below the age of 40 years, it is often seen in patients who suffer from obesity and diabetes (Roberts & Manchester 2005, 159) and it appears that a

rich diet is a major factor in this disease. The condition causes back pain and stiffness of the spine. Gout is also a disease that is seen more often in males and is also associated with similar lifestyle factors, including excessive alcohol consumption (Roberts & Manchester 2005, 162). This may reflect Cumberland's status as upper middle class and the letter referred to above suggests that diet may have been the cause. From George's letters we can infer that he must have felt unwell and been in pain from this ailment due to him being bedridden. However, whilst he mentions his ailments he does not seem to dwell on his own discomfort and therefore trying to elucidate his individual experience of pain is not possible. There was no evidence for the gout that is mentioned in George's letter on the skeleton of Elizabeth, although this may have been due to the lack of well-preserved foot bones available for analysis, the condition may have healed before her death, or that the disease was mistakenly diagnosed.

Molleson and Cox's (1993) seminal work on the named individuals from Spitalfields, indicated the problems with methods of age determination in adult skeletons. The accuracy and precision of osteological methods of ageing was poor for the older individuals in this chapter, as would be expected (Mays 1998, 62). Both of the younger individuals, Thomas and Maria, were still in a stage of dental or skeletal development and therefore the ages assigned using the osteological methods were accurate. In the case of Mark Kelson the Lovejoy *et al.* (1985) auricular surface method suggested an age between 50-59 years whilst the Buckberry & Chamberlain (2002) method gave a range between 39-91 years with a suggested mean age of 66 years. For Elizabeth Cumberland the Lovejoy *et al.* (1985) method suggested an age at death of 60+ years. A range of 53-92 years, with a mean age of 72 years, was obtained using Buckberry & Chamberlain (2002). Due to lack of preservation of the articular surfaces of the pelvis the sternal rib ends were used to assign an age of 54-64 years to George Cumberland,

far younger than his true age of 93 years. Research into the features of skeletal degeneration in advanced age has become more common in the last decade (Falys 2012; Gowland 2016; Appleby 2017). The discovery of more known-age elder individuals, such as Elizabeth and George Cumberland, contributes to a wider exploration, recognition and understanding of the effect of old age on the skeleton.

Our aim has been to explore how osteological analysis of known individuals can offer a more detailed insight into how their lived experience can manifest on their skeletal remains. This has provided us with information about the health and lifestyle of a range of individuals representing the diversity of the inhabitants of late-eighteenth and nineteenth-century Bristol, including those underrepresented in the historical record; women, children and people of lower socioeconomic status. Osteological data can also add new insights to complement the historical records for those of wealth for whom we have more documentary information, such as George and Elizabeth Cumberland. Drawing on the idea of experience as combined from material and cultural/psychological factors as discussed by Craig-Atkins & Harvey in the introductory chapter to this volume (pp ref), the historical biographies presented here can also provide more nuanced information of how individuals dealt with and experienced traumatic injury or joint disease. This also provide us with a way of determining how well we can recognise the effects of infectious disease, degenerative joint disease, trauma and the ageing process on the skeleton. Both historians and archaeologists are interested in learning about the lives of people in the past. Working together allows the physicality of the human remains and the written aspects of their lives to be more completely connected, allowing us to learn more about them as individuals but also about human experience. The insights gained from the study of these known individuals can be taken forward in studying those unknown individuals, who make up the majority of human remains recovered from archaeological

excavation, by using these combined approaches to ‘read’ aspects of their lives ‘written’ on their skeletons and, drawing especially on social history, to gain a better understanding of how those lives would have been lived. The skeletal remains from St Augustine’s parish, excavated from St George’s cemetery, continue to be analysed, and in collaboration with the historical documentation, will shed new light on the relationship between health, occupation, socioeconomic status, and aspects of physical changes to the skeleton, relating to disease, injury, childbirth and senescence on the inhabitants of late-eighteenth- and nineteenth-century Bristol and how they impacted on their lives.

### **Acknowledgements**

The authors would like to thank Avon Archaeology Ltd for permission to publish on these five individuals prior to the future monograph publication. We are also grateful to Professor Kate Robson Brown and the University of Bristol for allowing access to the laboratory space for analysis of these remains. Thanks also to Jane Evans for providing information on the letters of George Cumberland prior to publication.

### **References**

Alicioglu, B., Kartal, O., Gurbuz, H. and Sut, N. (2008) Symphysis pubis distance in adults: a retrospective computed tomography study, *Surgical and Radiologic Anatomy* 30: 153-157.

Adams, J. and Colls, K. (2007) *Life and death in nineteenth century Wolverhampton: Excavation of the overflow burial ground of St Peter’s collegiate church, Wolverhampton 2001-2002*, BAR British Series 442, Oxford: BAR Publishing.

Appleby, J. (2017) Ageing and the body in archaeology, *Cambridge Archaeological Journal* 28 (1): 145–163.

Aufderheide, A. C. and Rodriguez-Martin, C. (1998) *The Cambridge Encyclopedia of Human Paleopathology*, Cambridge: Cambridge University Press.

Bass, W. M. (1995) *Human Osteology: a laboratory and field manual* 4<sup>th</sup> edition, Columbia: Missouri Archaeology Society.

Bentley, G.E (1997) 'The Suppression of George Cumberland's "Captive of the Castle of Sennaar" (1798): Liberty vs Commerce' in: *The Yale University Library Gazette* Vol. 71, No. 3/4 (April 1997), pp. 155-158. Yale University.

Black, Clementina (1912) *The Cumberland Letters, Being the Correspondence of Rich. Dennison Cumberland & George Cumberland, Between the Years 1771 & 1784*, London: Secker.

Bock, G. (1989) Women's history and gender history: aspects of an international debate, *Gender and History* 1: 7-30.

Brickley, M., Buteux, S., Adams, J. and Cherrington, R. (2006) *St Martin's uncovered: investigations in the churchyard of St Martin's-in-the-Bull-Ring, Birmingham, 2001*, Oxford: Oxbow.

Brooks S. T., Suchey J.M. (1990) Skeletal age estimation based on the os pubis: a comparison of the Acsadi and Nemeskeri and Suchey-Brooks methods, *Human Evolution* 5: 227-238.

Brothwell, D. and Zakrzewski, S. (2004) Metric and non-metric studies of archaeological human bone, in M. Brickley and J. I. McKinley, *Guidelines to the Standards for Recording Human Remains* IFA paper No. 7: 27-33.

Buikstra, J. C. and Ubelaker, D. H. (1994) *Standards for Data Collection from Human Skeletal Remains*, Arkansas Archaeological Survey, Research Series 44.

Burrell, C. L., Emery, M. M., Canavan, S. M. and Ohman, J. (2018) Broken Bones: Trauma analysis in a medieval population from Poulton, Cheshire, in W. J. Turner and C. Lee (eds) *Trauma in Medieval Society*, Leiden, Brill: 71-91.

Buckberry, J. and Chamberlain, A. (2002) Age estimation from the auricular surface of the ilium: a revised method, *American Journal of Physical Anthropology* 68: 15-28.

Children's Employment Commission (1842) *Appendix to the Second Report of the Commissioners: Trades and Manufactures, Reports and Evidence from Sub-Commissioners, Part 1*. London: William Clowes and Sons

Connell, B. and Miles, A. (2010) *The City Bunhill burial ground, Golden Lane, London: Excavations at South Islington schools, 2006*, London: Museum of London Archaeology.

Dawson, H. (2014) *Unearthing late medieval children: health, status and burial practice in southern England*, BAR British Series 593, Oxford: Archaeopress.

Dawson, H. and Robson Brown, K. (2012) Childhood tuberculosis: a probable case from late medieval Somerset, England, *International Journal of Paleopathology* 2: 31-35.

Emery, P. A. and Wooldridge, K. (2011) *St Pancras burial ground: excavations for St Pancras International the London terminus of High Speed 1, 2002-3*, London: Museum of London/Gifford.

Evans, K. Jane (2022) *George Cumberland: Farming - Family - Fossils: Aspects of a Somerset life in letters 1800-35* Somerset Archaeological and Natural History Society.

Eyler, W. R., Monsein, L. H., Beute, G. H., Tilley, B., Schultz, L. R. and Schmitt, W. G. H. (1996) Rib enlargement in patients with chronic pleural disease, *American Journal of Radiology* 167, 921-926.

Falys, C. G. (2012) *Extending the life course: developing new methods for identifying the 'elderly' in the archaeological record*, University of Reading unpublished PhD thesis.

Gleadle, K. (2001) *British women in the nineteenth century*, Basingstoke: Palgrave.

Gowing, L. (2003) *Common Bodies: women, touch and power in seventeenth century England*, New Haven: Yale University Press.

Gowland, R. L. (2016) That “tattered coat upon a stick” the ageing body: evidence for elder marginalisation and abuse in Roman Britain, in L. Powell, W. Southwell-Wright and R.

Gowland (Eds) *Care in the Past: archaeological and interdisciplinary perspectives*, Oxford, Oxbow: 71-90.

Gowland, R. L., Caffell, A. C., Newman, S., Levene, A. and Holst, M. (2018) Broken Childhoods: Rural and Urban Non-Adult Health during the Industrial Revolution in Northern England (Eighteenth-Nineteenth Centuries), *Bioarchaeology International* 2(1): 44-62.

Harvey, K. (2020) One British Thing: A History of Embodiment: Ann Purvis, ca.1793–1849, *Journal of British Studies* 59: 136–139.

Hawkey, D. E. and Merbs, C. F. (1995) Activity-induced musculoskeletal stress markers (MSM) and subsistence strategy changes among ancient Hudson Bay Eskimos, *International Journal of Osteoarchaeology* 5: 324-338.



Henderson, M., Miles, A. and Walker, D. (2013) *'He being dead yet speaketh'* Excavations at three post-medieval burial grounds in Tower Hamlets, east London, 2004-10, London: Museum of London Archaeology.

Henderson, M., Miles, A. and Walker, D. (2015) *St Marylebone's Paddington Street north burial ground: Excavations at Paddington Street, London W1, 2012-13*, London: Museum of London Archaeology.

Herskovitz, I., Greenwald, C. M., Latimer, B., Jellema, L. M., Wish-Baratz, S., Eshed, V., Dutour, O. and Rothschild, B. M. (2002) *Serpens endocrania symmetrica (SES): A new term and a possible clue for identifying intrathoracic disease in skeletal populations*, *American Journal of Physical Anthropology* 118, 201-216.

Hillson, S. (2003) Wealth, health, diet and dental pathology, in W. H. Metz (ed.) *Wealth, health and human remains in archaeology*, Amsterdam, Stichting Nederlands Museum voor Anthropologie en Praehistorie: 7-38.

Ives, R., Mant, M., de la Cova, C., & Brickley, M. (2017) A large-scale palaeopathological study of hip fractures from post-medieval urban England, *International Journal of Osteoarchaeology* 27: 261-75.

Judd, M. A. (2010) Pubic symphyseal face eburnation: An Egyptian sport story?, *International Journal of Osteoarchaeology* 20: 280-290.

Judd, M. A. and Roberts, C. A. (1999) Fracture trauma in a medieval British farming village, *American Journal of Physical Anthropology* 109: 229-243.

Kelley, M .A. (1979) Parturition and pelvic changes, *American journal of Physical Anthropology* 51: 541-546.

- King, J. (1972) The Meredith Family, Thomas Taylor and William Blake, *Studies in Romanticism*, Vol. 11 No. 2, 153-157.
- Lambert, P. M. (2002) Rib lesions in a prehistoric Puebloan sample from southwestern Colorado, *American Journal of Physical Anthropology* 117, 281-292.
- Lane, J. (2001) A social history of medicine: health, healing and disease in England 1750-1950, London: Routledge.
- Langford, P. (1998) *A polite and commercial people England 1727-1783*, Oxford: Clarendon Press.
- Latimer, J. (1887) *The Annals of Bristol in the nineteenth century*, Bristol: W & F Morgan.
- Lewis, M. E. (2011) Tuberculosis in the non-adults from Romano-British Poundbury Camp, Dorset, England, *International Journal of Paleopathology* 1: 12-23.
- Lewis, M. E. (2007) *The Bioarchaeology of Children: Perspectives from Biological and Forensic Anthropology*, Cambridge: Cambridge University Press.
- Lewis, M. E. (2004) Endocranial lesions in non-adult skeletons: understanding their aetiology, *International Journal of Osteoarchaeology* 14, 82-97.
- Lentz, S. S. (1995) Osteitis pubis a review, *Obstetrical & Gynecological Survey* 50 (4): 310-315.
- Lillehammer, G. (1989) A child is born: the child's world in an archaeological perspective, *Norwegian Archaeological Review* 22: 89-105.
- Lovejoy C. O, Meindl R. S., Pryzbeck T. R. and Mensforth R. P. (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* 68: 15-28.

- Lovell, N. C. (1997) Trauma analysis in paleopathology, *Yearbook of Physical Anthropology* 40: 139-170.
- Magyar, L. A. (1999) The history of the term tuberculosis, in G. Pálfi, O. Dutour, J. Deák and I. Hutás (Eds.) *Tuberculosis: Past and Present*. Hungary, Golden Book Publisher Ltd: 25-27.
- Mant, M. (2020) 'A little time would complete the cure': broken bones and fracture experiences of the working poor in London's general hospitals during the long eighteenth century, *Social History of Medicine* 33: 438-462.
- Martini, M., Boudjemaa, A. (1988) Tuberculous osteomyelitis, in M. Martini (Ed.), *Tuberculosis of the Bones and Joints*, New York, Springer-Verlag: 52-79.
- Mays, S. (1998) *The Archaeology of Human Bones*, Routledge: London.
- McMillen, C. W. (2016) *Pandemics: a very short introduction*, Oxford: Oxford University Press.
- Meindl R. S. and Lovejoy C.O. (1985) Ectocranial suture closure: a revised method for the determination of skeletal age at death based on the lateral-anterior sutures, *American Journal of Physical Anthropology* 68:57–66.
- Mensforth, R. P., Lovejoy, C. O., Lallo, J. W. and Armelagos, G. J. (1978) The role of Constitutional Factors, Diet and Infectious Disease in the Etiology of Porotic Hyperostosis and Periosteal Reactions in Prehistoric Infants and Children, *Medical Anthropology* 2: 1-59.
- Miles, A. and Connell, B. (2012) *New Bunhill Fields burial ground, Southwark: Excavations at Globe Academy, 2008*, London: Museum of London Archaeology.

- Miles, A., Powers, N., Wroe-Brown, R. and Walker, D. (2008) *St Marylebone Church and burial grounds in the 18<sup>th</sup> to 19<sup>th</sup> centuries: excavations at St Marylebone School, 1992 and 2004-6*, London: Museum of London Archaeology.
- Molleson, T and Cox, M. (1993) *The Spitalfields Project volume 2: The Anthropology: The Middling Sort*, York: CBA Research Report 86.
- Moorrees, C. F. A, Fanning, E. A. and Hunt, E.E. (1963a) Formation and Resorption of Three Deciduous Teeth in Children, *American Journal of Physical Anthropology* 21: 205-213.
- Moorrees, C. F. A, Fanning, E. A. and Hunt, E.E. (1963b) Age Variation of Formation Stages for Ten Permanent Teeth, *Journal of Dental Research* 42: 1490-1502.
- Newman, S. L. & Hodson, C. M. (2021) Contagion in the capital: Exploring the impact of urbanisation and infectious disease risk on child health in nineteenth century London, England, *Childhood in the Past* 14 (2): 177-192.
- Newton, H. (2012) *The sick child in early modern England, 1580-1720*, Oxford: Oxford University Press.
- Ouahes, M. and Martini, M. (1988) Tuberculosis of the spine, in M. Martini (Ed.), *Tuberculosis of the Bones and Joints*. New York, Springer-Verlag: 157-200.
- Ortner, D. J. (2003) *Identification of pathological conditions in human skeletal remains second edition*, London: Academic Press.
- Padiak, J. (2009) Diachronic Analysis of Cause-of-Death Terminology: The Case of Tuberculosis, *Social Science History* 33 (3): 341-356.
- Potter, K. (2017) *Archaeological Excavation at St George's Hall, Great George Street, Bristol Assessment Report and Updated Project Design*, unpublished client report.

- Probert, R., (2009) 'Control over Marriage in England and Wales, 1753-1823: The Clandestine Marriages Act of 1753 in Context' *Law and History Review* Vol. 27, No. 2, pp. 413-450. American Society for Legal History.
- Roberts, C. and Manchester, K. (2005) *The Archaeology of Disease* 3<sup>rd</sup> edition, Stroud, Sutton Publishing.
- Roberts C. A. and Buikstra, J. E. (2003) *The Bioarchaeology of Tuberculosis: A Global View on a Reemerging Disease*, Florid: University Press of Florida.
- Rogers, J., Waldron, T., Dieppe, P. and Watt I. (1987) Arthropathies in Palaeopathology: The basis of classification according to most probable cause, *Journal of Archaeological Science* 14: 179-193.
- Santos, A. L. and Roberts, C. A. (2006) Anatomy of a serial killer: differential diagnosis of tuberculosis based on rib lesions of adult individuals from the Coimbra identified skeletal collection Portugal, *American Journal of Physical Anthropology* 130: 38-49.
- Santos, A. L., and Roberts, C. A. (2001) A picture of tuberculosis in young Portuguese people in the early 20th century: a multidisciplinary study of the skeletal and historical evidence, *American Journal of Physical Anthropology* 115, 38-49.
- Scheuer, L. (1998) Age at death and cause of death of the people buried in St Bride's Church, Fleet Street, London in, M. Cox (ed) *Grave Concerns: Death and Burial in England 1700 to 1850*, CBA Research Report 113, York, Council for British Archaeology: 100-111.
- Scheuer, L. and Black, S. (2000) *Developmental Juvenile Osteology*, London: Academic Press.

Sharpe, J. A. (1987) *Early Modern England: A Social History 1550-1760*, London: Edward Arnold

Silva, J. F. (1980) A review of patients with skeletal tuberculosis treated at the University Hospital, Kuala Lumpur, *International Orthopaedics* 4, 79-81.

Smith, B. H. (1991) Standards of Human Tooth Formation and Dental Age Assessment, in M. A. Kelley and C. S. Larsen (eds.) *Advances in Dental Anthropology*, New York, Wiley-Liss Inc: 143-168.

Stirland, A. (2009) Criminals and Paupers: the Graveyard of St Margaret Fyebriggate in *combusto*, Norwich. NAU Archaeology and Norfolk Historic Environment, Norwich: 4-35.

Stuart-Macadam, P. (1991) Anaemia in Roman Britain: Poundbury Camp, in H. Bush and M. Zvelebil (eds), *Health in Past Societies: biocultural interpretations of human skeletal remains in archaeological contexts*, Oxford, BAR Int. Series 567: 101-113.

Szreter, S. and Mooney, G. (1998) Urbanization, Mortality, and the Standard of Living Debate: New Estimates of the Expectation of Life at Birth in Nineteenth-Century British Cities, *The Economic History Review* 51 (1): 84-112.

Tague, R. G. (1988) Bone resorption of the pubis and preauricular area in humans and nonhuman mammals, *American Journal of Physical Anthropology* 76: 251-267.

Thackrah, C.T. (1831) *The effects of the principal arts, trades, and professions, and of civic states and habits of living, on health and longevity*. Philadelphia, Porter

Thijn, C. J. P. and Steensma, J. T. (1990) *Tuberculosis of the Skeleton: Focus on Radiology*, New York: Springer-Verlag.

Tucker, K., Berezina, N., Reinhold, S., Kalmykov, A. , Belinskiy, A. and Gresky, J. (2017) An accident at work? Traumatic lesions in the skeleton of a 4<sup>th</sup> millennium BCE”wagon driver” from Sharakhalsan, Russia, *HOMO* 68: 256-273.

Waldron, T. (2009) *Palaeopathology*, Cambridge: Cambridge University Press.

Walker, P. L., Bathurst, R. R., Richman, R., Gjerdrum, T. and Andrushko, V. A. (2009) The Causes of Porotic Hyperostosis and Cribra Orbitalia: A Reappraisal of the Iron-Deficiency-Anemia Hypothesis, *American Journal of Physical Anthropology* 139: 109-125.

Williams, N. and Mooney, G. (1994) Infant mortality in an ' Age of GreatCities': London and the English provincial cities compared, c. 1840-1910, *Continuity and change* 9 (2): 185-212.

Witkin, A. V. (2011) *The health of the labouring poor, surgical and post-mortem procedures at the Bristol Royal Infirmary, 1757-1854: A biohistorical approach*, University of Bristol unpublished PhD thesis.

### Archives

Bristol Archives - BRO 35893 Outpatient admission registers (1739-1844)

### Online resources

Ancestry.co.uk

BNA (British Newspaper Archive) <https://www.britishnewspaperarchive.co.uk/>

Bristol's Lost Pubs: <https://bristolslostpubs.eu/>

*The Bristol Poll-book, Being a List of the Householders, Freeholders, and Freemen who Voted at the Parliamentary Election, Tuesday, June 29, 1841.* Bristol, Hill accessed at

<https://play.google.com/books/reader?id= ifgLWfKng4C&printsec=frontcover&pg=GBS.PP>

1

Greenacre, F. (2014, September 25). Cumberland, George (1754–1848), writer on art and watercolour painter. *Oxford Dictionary of National Biography*. Retrieved 18 Dec. 2020, from <https://www.oxforddnb.com/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-59709>.

Hunt, E. & Co. (1848) *Directory and Court Guide for the Cities of Bath, Bristol and Wells*

London: BW Gardiner (accessed at

[https://play.google.com/books/reader?id=SyIOAAAAQAAJ&printsec=frontcover&source=gs\\_atb\\_hover&pg=GBS.RA1-PA82](https://play.google.com/books/reader?id=SyIOAAAAQAAJ&printsec=frontcover&source=gs_atb_hover&pg=GBS.RA1-PA82))

McFeat, W (1825) *The Glasgow Directory* (accessed at National Library of Scotland

Directories, <https://digital.nls.uk/directories/browse/archive/83434965>)

Pigot & Co (1824) *Pigot's Directory of Kent 1824* (accessed at University of Leicester

Special Collections Online

<http://specialcollections.le.ac.uk/digital/collection/p16445coll4/id/167102/rec/1>

Stemmler, J.K. (1992) “‘Undisturbed Above Once in a Lustre’”: Francis Douce, George

Cumberland and William Blake at the Bodleian Library and Ashmolean Museum’ in *Blake:*

*An Illustrated Quarterly Vol 26 Issue 1* accessed online at

<http://bq.blakearchive.org/26.1.stemmler#n47>