People, Patients and Preparations: Post-Mortem Journeys and the Status of Human Remains in the Medical Museum of Richard Smith Junior (1772-1843) at the Bristol Infirmary.

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Abstract

Once famed for its excellence, Richard Smith's Museum at the Bristol Infirmary has retreated to the fringes of Bristol's medical history. This study aims to create the first historical account of the museum, through the lens of its creator, Richard Smith Junior. An account of the museum was created through combining information from the surviving fragments, original catalogues, contemporary newspapers and Smith's own historical works, then this was contextualised within the social and medical landscape of the 18th and 19th centuries. By focussing on Smith as the creator, this study aims to understand the different elements of the museum, where anatomical preparations coexist alongside murder relics, as a cohesive whole. Human remains straddle the distinction of person and object, this study argues that the medical museum was active in the construction of a medically realised intermediary category, the 'patient'. Transitioning through different spaces in their post-mortem journeys, the fragments in the museum acquire multiple statuses, existing simultaneously person, patient and object. This polysemy is used by Smith to create a museum where he can construct and promote his own identity. Only by understanding the museum as a medically-relevant resource *and* a tool for social ambition and personal expression can the different elements cohere as one museum.

Dedication and Acknowledgements

Firstly, I would like to thank Anni Skilton and Alice Kenny for rescuing this collection and initiating this project, without your intervention I never would have discovered this fascinating part of history. I am grateful to Professor Katherine Robson Brown for her guidance and support. Finally, I would like to thank my family and friends for their support and for never getting annoyed at me for bring up medical cannibalism at the dinner table.

Author's Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's *Regulations and Code of Practice for Research Degree Programmes* and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work it the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

SIGNED: …… …… DATE: ……27/03/2019…….

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Abbreviations

BRIPSC: Bristol Royal Infirmary Pathological Specimens Collection

BRO: Bristol Records Office (Bristol Archives)

BRI: Bristol Royal Infirmary

1 INTRODUCTION

Richard Smith Junior (1772-1843) was a prominent character in Georgian Bristol. In addition to being senior surgeon at the Bristol Infirmary for 40 years, he was a medical practitioner, historian, philanthropist, lecturer and member of elite society. Smith and his museum at the Infirmary are frequently referred to in histories of Bristol or provincial medical history despite never being the subject of a dedicated study. Intended as a teaching collection, but containing an array of curiosities, Smith's museum was as valued as it was infamous, with eminent figures like Astley Cooper (1768 – 1841) (Bristol Times..., 1860) and Everard Home (1756-1832) (Hetling, 1831) praising its significance. His museum now exists as a few scattered fragments and catalogues, with even the building itself narrowly avoid destruction in 2017. The museum re-entered the public discourse in 2011 with the burial of the skeleton of John Horwood by his living relatives after they discovered he was still kept in the University of Bristol (BBC News , 2011; Halliwell, 2012). The ability for these remains to incite such a powerful response in people who had previously been completely unaware that Horwood had once existed is a compelling affirmation of the agency that human remains possess and their ambiguous status between person and object (Hallam & Hockey, 2001; Lupton, 1998).

Studying any collection without its collector limits interpretation to a one-dimensional understanding as the decisions, reasons and peculiarities of the collector are imperative in understanding the collection beyond the superficial. The symbiotic relationship between the identities of the collector and their collection draws on the concept of the extended self, making them each an inseparable part of the other (Belk, 1988). The collector creates and curates the collection, but their close relationship with it makes it the perfect space for identity construction and fantasy realisation (Pearce, 1993).

The human body was, and is, a site of huge conflict, as a corpse within personal memory making and valuable anatomical subject. By examining Smith's interpretation of the fragments a wide variation in the status of human remains is apparent: some are seen as objects in exchange networks, next to full skeletons that are intended to exist as a character in a crime story. In addition to these two extremes, most of the fragments exist in the interim, retaining various shreds of their identities as patients and medical materials. The property of human remains to simultaneously possess several forms of agency, as a subject and object, is recognised (Krmpotich, et al., 2010) and this study aims to explore the different forms of agency within the museum, also exploring how the ambiguity of these two

categories within the study collection is a reflection of the changes in medical philosophy occurring over the late 18th and early 19th centuries, most importantly the development of the concept of the patient (Jewson, 1976). Through examining the fragments by status, this study aims to understand how Smith exploits their inherent polysemy (Alberti, 2011a) to construct and emphasise different aspects of his identity.

Alberti (2011a) states that the journey from body to shelf is also an ideological journey from person to object, this study aims to explore this further by examining the relationship between the different supply channels (Figure 1) and the status of the fragment.

The small scale of this personal focus on Smith means that certain wider aspects of history are beyond the scope of this study. Much of the study material pre-dates the 1832 Anatomy Act (2&3 Will. IV c.75, 1832 (see section 0)), the impacts of which are vast and much discussed (Richardson, 1987). This study focuses on how Smith constructs a concept of 'self', his own reputation and masculinity, but an analysis of how he constructs the 'other', including concepts like deviance and gender, requires a separate study entirely. The study material also lacked evidence of a common route for museum fragments: the purchase of human remains. This will not be discussed, not out of certainty that it did not occur, but rather because it is outside of the scope of this study.

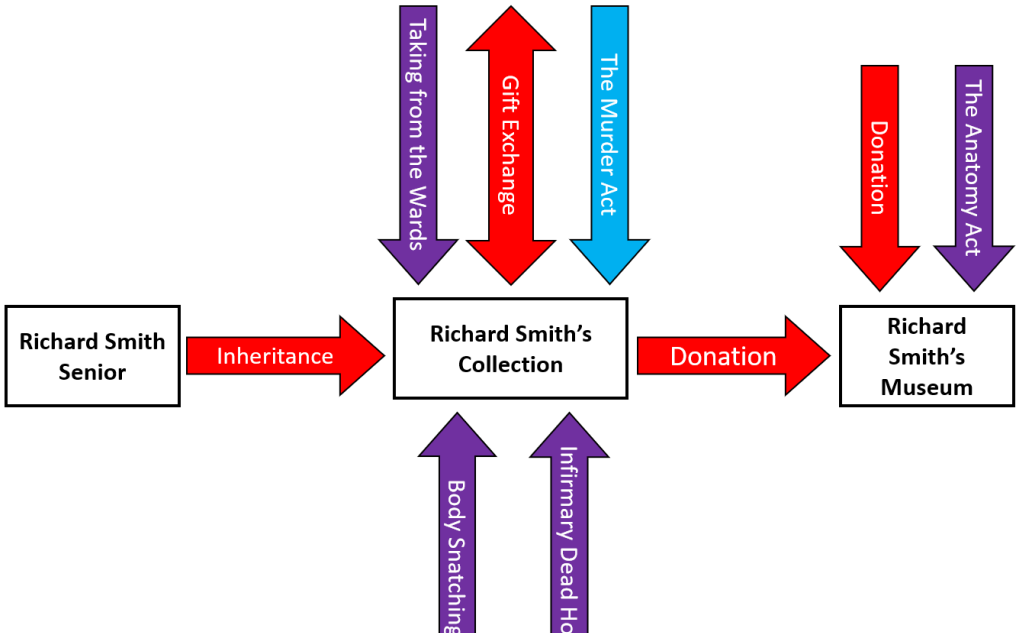


Figure 1: The different channels that supplied human remains to Smith's museum. The colours refer to the status associated with that route, red = object, purple = patient and blue = person.

1.1 DEFINING TERMINOLOGY. This fluctuating state between person and object, and the implications of defining them as either, requires the use of a categorically ambivalent term for the study material. Referring to them with object terms erases their personhood, whilst identifying them as solely human

neglects their history as things. Chaplin (2008) specifies that the term 'preparation' to describe preserved body parts became popular in the late seventeenth-century, distinguishing the anatomically useful, skilfully prepared pieces from other 'curiosities' or un-modified natural 'specimens'. This term benefits from expressing both the labour of the anatomist in creating an object from human remains and the humanness, and subsequent person-hood, of something anatomical. Another useful term is used by Alberti (2011a), who uses the term 'fragment' as it identifies its subject as an independent, isolated part whilst simultaneously acknowledging that it was once part of a whole, a human body, and could become part of a different whole, the dividual body of the medical museum. This term is also an eloquent expression of the conflicting opinions about anatomy by indicating both its high-culture refinement and base brutality. It aligns anatomical fragments with other culturally-respected museum fragments, of architecture and statues (Alberti, 2011a, p. 71), which explains how the practice of anatomy became acceptable whilst also subtly referencing the cultural antipathy towards the invasion, or fragmentation, of the human body. The polysemic nature of both 'preparation' and 'fragment' qualify them as appropriate terms to address the same nature in what they are describing. The Richard Smith referred to in this study is Richard Smith Junior (1772-1843), his father was also called Richard Smith (1748-1791) and will be referred to as Richard Smith Senior.

1.2 RESEARCH SOURCES. The museum material used in this study was drawn from several different sources and three catalogues were created (Appendices: 0, 0, 0). The museum itself existed for over 250 years but due to the intimate relationship between collector and museum this study focuses on the life of Richard Smith Junior (1772-1843).

1.1.1 The Bristol Royal Infirmary Pathological Specimens Collection (BRIPSC (appendix G)).

This study emanates from the bio-historical study (appendix H) of the human bones (95 individual specimens) donated to the University of Bristol from the Bristol Royal Infirmary Pathological Specimens Collection (BRIPSC) (Kenny & Skilton, 2017) after being discovered in the Infirmary. The bones were identified as the remnants of the Infirmary museum and it was possible to trace 10 of them back to Richard Smith himself through inscriptions on the bones or mention in the expansive collection of catalogues (including numerous duplicates). The catalogues sometimes provide useful case information but lack both author and date.

1.1.2 Catalogue of the Preparations of Mr. Richard Smith (BRO: 35893/36/y (appendix E)).

This manuscript catalogue was written by Smith sometime between 1813, the latest date listed in the entries, and his death in 1843. It is possible that it was written around 1827 when the collection was donated to the Infirmary. The catalogue was transcribed, (appendix E) and studied as a source of Smith's personal ideas about and relationship with the fragments.

1.1.3 Contents of the Museum Derived from Other Sources (appendix F).

A catalogue of other fragments was compiled from a mixture of sources including: historical works about the Infirmary, newspaper articles about the museum and articles written by Smith himself. This provided a range of perceptions of the museum, both among and external to the medical community.

1.1.4 Historical information

A large portion of this study is devoted to the history of Smith and his museum so contemporary newspapers such as The Bristol Mercury, The Bristol Mirror and the Western Press were studied to provide the historical information. The Richard Smith Papers held at the Bristol Archives (BRO: 35893/36) were an expansive source of information about the Infirmary, each practitioner who worked there and the legal proceedings around the Horwood and Davis and Bobbett cases. In addition to Smith's writings, contemporary newspapers and pamphlets were also used to provide additional perspectives.

Much of the historical information about the Infirmary was sourced from Munro-Smith's (1917) work, A History of the Bristol Royal Infirmary. Whilst providing a valuable account of the history, Munro-Smith's own loyalty to the Infirmary, having spent most of his medical career there, and his reliance on Richard Smith Junior's previous historical works must be considered when consulting his opinions on events and people.

2 THE MEDICAL MUSEUM

2.1 HISTORY

The medical museums that were formed in the eighteenth and nineteenth centuries were developing concurrently with many influential events: medical reform created a regulated education system, pathology and comparative anatomy emerged as distinct fields, European colonisation was at its peak and the leisure sector, including exhibitions and public shows, was expanding. (Alberti & Hallam, 2013)

The medical museum's roots began in the early modern period where *Wunderkammern* or cabinets of curiosity housed large varieties of natural specimens, human body parts (both artificial and actual) and man-made artefacts (Alberti & Hallam, 2013). Early-modern museums were usually the reserve of a small number of wealth, high-status individuals who sought to express their knowledge of the natural world by collecting, organising and owning material (Reinarz, 2005). This collection of rarities was a respectable pastime and it helped to establish the social standing of medical men through its association with academia and gentile pursuits (Alberti & Hallam, 2013). These early museums consisted mainly of curiosities and monsters (Alberti, 2011a) and the transition to more common pathologies occurred as medical practitioners endeavoured to connect these anatomical manifestations of disease with the external symptoms of the living patient (Reinarz, 2005).

In the eighteenth-century there was a proliferation in the number of private, specialised museums: there were 39 museums formed in England between 1739 and 1800, consisting of specimens collected by medical practitioners (Reinarz, 2005). In contrast to the Early-Modern curiosity cabinets, these museums mostly consisted of typical specimens, although there were some rare cases used to display the difference between normal and abnormal anatomy (Bates, 2008). In the mid-Eighteenth Century the focus of specimen collecting expanded to include disease and abnormal anatomy (Alberti, 2011a).

The Modern anatomical collections that started to appear in the mid-eighteenth century eventually lead to the development of their institutionalised counterparts in the nineteenth-century, where a good-quality museum became indicative to the value of hospital medical schools (Alberti, 2011b). The early nineteenth-century medical prioritisation of physical observation and diagnosis increased the educational significance of museums and, as this occurred concurrently with the decline of apprenticeship, resulted in private anatomical collections being combined into large, institution-based teaching museums in order to provide the schools with expansive educational resources (Reinarz, 2005). Private collectors continued to receive material from hospitals until the practice of post-mortems became routine and any interesting specimens were put instead in the hospital's museum.

From the 1830s the hospital museums started to require specific staff members to collect and organise the specimens, the first chair of morbid anatomy being held at UCL (Alberti, 2011a). During the Nineteenth-Century the expansion of medical museums caused the separation of anatomical and pathological material within museums and throughout its course the latter began to completely dominate the former. Pathology became the focus of many museums and formed the education advancement to the study of anatomy (Alberti, 2011a). Academic and popular museums proliferated together until efforts by the former to discredit the latter caused a professional monopoly on anatomical education (Hallam, 2016) (see appendix D.a.a for a description of the museum's relevance to unorthodox medicine in Bristol).

In order to explain the features within Smith's museum the medical and social relevance of medical museums in general will now be discussed.

2.2 Roles of the Museum within Medicine

The museum's contributions to medicine were not limited to its value as an educational resource, but, as the public face of anatomy, it also functioned as a social tool for the medical community.

The improved visibility, accessibility and duration of museum manifestations of anatomy caused the private museum to become a valuable educational resource for students, both more useful and more exclusive than the ritualised public anatomy displays (Hallam, 2016). Medical preparations were also instrumental to the changes in medical education as apprenticeships were replaced by lecture courses over the eighteenth century by providing a physical expression of disease that could be accessible to larger numbers of people through display in lectures, replacing the one-on-one experience of apprenticeship and small-group exposure of mortuary dissections. The early 19th Century saw the hospital shift in function from a charitable institution into the centre of medical education (Peterson, 1978). Practical anatomy had become the ultimate tool in medical education and systematic, scientific diagnosis was the most important aspect of medical practice (Porter, 1997). Anatomical preparations allowed aspects of dissection to be preserved, clearly displayed and accessible year-round when temperatures were too high for dissection. Medical education in Bristol centred around this practical anatomical experience, with dissection rates being much higher than at other London-based institutions (Alford, 1890). The importance of dissection was especially emphasised by the surgeons as it distinguished them from the higher-status gentlemanly physicians (Brunton, 2004) and they could profit from teaching anatomy without concern about the social impact; as their reputations were already associated with impolite practices (Chaplin, 2008). Prior to the medical school and hospital based forms of education, surgeons and apothecaries were trained via unregulated apprenticeships and physicians boasted a classical, university education where clinical experience was limited to

observation (Peterson, 1978). This system of apprenticeship provided a satisfactory medical education due to the focus on experience and the social threat to the status of the master if the apprentice was improperly trained (Lane, 1985), however they were unregulated and the dependence on the experience of the master could potentially result in a narrow education (Lawrence, 1988). In Bristol the 100 city surgical apprenticeships in 1709 gradually declined over the 18th Century, to be completely replaced by hospital pupils, numbering 30, in 1809 (Fissell, 1991). In Bristol, instead of the more common procedure of formal clinical and educational roles being created within the hospital, it was the gradual incorporation of existing private lecture courses into the hospital premises that positioned education within the Infirmary (Fissell, 1991). This less regimented system of education was not separated from the private enterprise and reputation of the teachers; the hospital was used to provide the teaching material and patient cases required for education. Although the system of apprenticeship had a desirable focus on practical experience its replacement by hospital pupillage resulted in institutionalised medical museums being created from the private collections of the teaching staff (Reinarz, 2005). The 19th Century saw a new form of medical elite emerge, replacing the traditional separation of physician, surgeon and apothecary, whose influence relied on their role within medical education, where those who held posts as medical school and hospital consultants were distinguished from ordinary practitioners (Peterson, 1978). Teaching collections of anatomical preparations were invaluable resources and could be used as powerful capital by those who owned them. The surgeon Astley Cooper (1768-1841) attempted to remove his contribution to the museum at St Thomas' after his nephew was denied the opportunity to take over his post. The hospital opposed the fragmentation of the museum and instead, after a long process of disagreement and conflict, were obliged to purchase the material from Cooper (Alberti, 2011a). A similar case occurred in Edinburgh where John Barclay (1758-1826) used the donation of a large amount of pathological material as leverage to appoint his assistant, Robert Knox (1791-1862 (of Burke and Hare infamy)), as the curator of the museum (Alberti, 2011a). In Bristol, at the beginning of the 19t Century the vast majority of the Infirmary surgeons had up to six paying pupils, a lucrative endeavour which caused surgeons to actively seek out interesting medical cases to improve their teachings (Fissell, 1989), Smith's ability to grant access to an entire collection of interesting cases would have made him a desirable teacher.

After being deposited in the Infirmary Smith's museum was not only an educational *resource* but an educational *space*. The scientific authority possessed by the museum as a treasury of medical knowledge could be invoked by the speaker to support their own authority and medical legitimacy (Ahren, 2013). William Hetling (surgeon at Infirmary from 1807 to 1837) presented a course on 'The Principles and Practice of Surgery' in the museum in 1831, highlighting the value of the collection by calling Richard Smith the '*John Hunter of Bristol',* creating the environment of scientific excellence

within which to present his work (Hetling, 1831, p. 395). The new museum was also used in 1880 by Joseph Lister to affirm the effectiveness of carbolic spray as an antiseptic, demonstrated when he operated on an abscess on the neck of a woman in front of an audience (Munro Smith, 1917, p. 355).

In addition to providing reference material, the medical museum was a valuable resource in the emotional education of medical students, or the development of clinical detachment, by isolating, depersonalising and sanitising human remains. This emotionally detached gaze could only be developed through repeated experience with dissection, time in the wards and exposure to museum preparations (Porter, 1997). The medical museum is the perfect materialisation of clinical detachment prioritising order, neatness and scientific explanation whilst eliminating chaos, mess and emotion. Medical museums formed part of the arsenal of the concept's advocates, like William Hunter, as they encourage dispassionate examination. In the education of a surgeon Hunter stated that development of the 'heart' (meaning clinical detachment) was just as important as that of manual skill (the hand) and medical knowledge (the head) (Payne, 1977).

In addition to the effect upon the individual, the development of a large and extensive medical museum could be useful in improving the prominence of an institution: comprehensive collections were indicators of prestige and authority (Reinarz, 2005; Mitchell, et al., 2011). The Bristol Infirmary served as the platform for a developing culture of heroic surgery where high-profile operations were reported in newspapers and journals (Barry, 1987), the medical museum provided another way to record and advertise these events.

Medical museums served to normalise and naturalise the practice of dissection, situating the practice within the realms of acceptable and respectable public behaviour, by opening up the practice to the approval of a non-medical, yet high-status, viewership (Chaplin, 2008). Removing dissection from private rooms and placing it on public display allowed the practice to move from one of public suspicion to one of public approval and aligned the 'quintessentially impolite' (Guerrini, 2004) endeavours of anatomy with more acceptable forms of science and refined culture. This approval was crucial in the advancement of the social status of the anatomists: capability within a discipline does not translate into social rank unless that discipline itself is considered to be valuable and desirable (Khalil, 2005). The museum controlled the aspects of anatomical investigation that the public were exposed to: the indelicate, messy and violent aspects of the practice remained in the dissection room and the museum was stocked with neatly preserved and presented specimens.

2.3 The Importance of Medical Museums to the Individual.

In the competitive, status-concerned medical community of the 18th and early 19th centuries, these museums were as much of a tool for personal status enhancement and identity construction as they were a resource for medical reference and education. This era has been dubbed the first consumer society, where the changing relationship between people and objects meant that property had become instrumental to the construction and affirmation of identity (Chaplin, 2009).

The individual costs involved in the accumulation, preparation and display of anatomical preparations vastly outweighed the educational value of the museum. The creation of a medical museum involved significant personal risks to Richard Smith, including threats to character and personal safety from being involved in criminal endeavours like body snatching. The health implications from preparation creation were also significant: the risk of infection, use of flammable liquids and respiratory problems from various chemicals (Alberti, 2011a). The process of maceration attracted rats to the workspaces, making the process even more unpleasant and, in one case, even scavenging from the preparations:

> *"249: a foetus at the 5th month after conception… the head was carried off by a rat when under preparation."* (BRO: 35893/35/y)

Despite this, Richard Smith devoted his life to his museum. This indicates that the benefits to Smith himself must have been large and compelling enough to incite huge the investments of time, money and effort required to create and maintain a museum (Chaplin, 2008). In addition to being educational spaces, museums acted as treasuries for cultural capital (Reinarz, 2005), specifically objectified cultural capital: tangible elements that enable social mobility (Bourdieu, 1986). Surgeon-anatomists, including William Hunter, devoted much of their income to the acquisition of collectable objects indicative of a higher social class, social status being of the upmost importance to the success of the Georgian medical practitioner (Porter, 1985). The concept of a museum fragment was already a culturally esteemed phenomena, anatomists used this to legitimise the socially condemned act of dismemberment and to align their work with refined culture (Alberti, 2011a), reflecting positively on their own character and status. This desire to associate with culturally esteemed practices is reflected in the portraits of eminent members of infirmary staff (Bristol Mercury, 1860) and fragments from archaeological excavations (Francis, 1836) within Smith's museum. Nearing the end of the 18th century a general interest in anatomy and collecting was considered a gentlemanly characteristic. John Hunter's (1728- 1793) museum was a prime example of this: free access was granted to important state, church and military individuals whereas medical professionals required application or recommendation for access (Bates, 2008). Both the range of visitors to Smith's museum and their

sudden reduction in numbers after his death (see section 6.3) support the idea that the museum was a social tool for Smith. Fissell (1991) states that status symbols, indicating gentlemanly status, were an important part in the rise of the Bristolian surgeons from shop keepers to members of the professional elite. These included carriages and the Infirmary uniform that reflected the dress of a mid-century gentleman, Smith's museum is another status symbol utilised in the social progress of an aspiring surgeon.

Several features of Smith's museum connect him with notable figures, including portraits of previous notable Infirmary staff (Bristol Mercury, 1860). People made famous by their extreme medical conditions and criminals repeatedly appeared in collections throughout the 19th century. Collectors such as Henry Wellcome liked to collect the remains of equally famous people like William Burke and Jeremy Bentham (Alberti, 2011a), this acquisition of high-status fragments was continued by Smith who included the cancerous tongue of Governor Johnstone (BRO: 35893/35/y), a contentious naval officer and politician (see appendix E.a), the clothes of the Irish giant Patrick Cotter (Fisher., 1905) and the excavated heart of Sherriff Yeamans (Francis, 1836), executed for plotting to deliver Bristol to a royalist army in 1643.

Anatomists used their museums as treasuries for cultural capital as the collection formed part of their identity and existed as a central part of their extended self. The concept of the extended self theorises that people are the sum of everything they own, from body and mind to clothes and money (Belk, 1988). Collecting objects creates the opportunity to express ideas about the physical world but also enables self-definition and fantasy construction (Pearce, 1993). The museum creator selects fragments that communicate features of the identity that they desire to curate: objects associated with refined culture, evidence of surgical proficiency, gifts associated with high-status individuals. The museum is a central part of the collector's identity where character and collection cannot be independently considered. Richard Smith's Museum carried his name despite continually being added to and manipulated by others even after his death as the connection between man and museum was robust enough to withstand this pollution. Conversely in the Hunterian in Glasgow this inalienability caused William Hunter's museum to be preserved as a complete collection: new additions were kept completely separate from the original collection for a century (Alberti, 2011a). Despite their seemingly opposing approaches, these two situations centre around the same belief: that the creator and the museum are one and the same.

In addition to enabling identity construction and fantasy exploration during life, the longevity of objects allowed the creator to extend their social presence beyond their own death (Hallam & Hockey, 2001). This route to immortality was most solidly realised through transforming the private collection

into an institutionalised museum, an evolution that also legitimises the collection and its collector (Belk, et al., 1988). The institutionalised museum maintains the collector's presence in society and history, maximising their relevance to extend the time between the biological death of dying and the social death of being forgotten (Tomasini, 2017).

In addition to the social prominence gained through the symbolic connections to refined culture, museums also bestowed medical legitimacy upon their owners, the extent of which increased proportionately with the size and quality of the collection. This was exemplified by the election of John Heaviside to the Royal Society in 1797 who was recognised as an anatomist after purchasing and combining the collections of various anatomists and opening a museum, despite never having taught anatomy himself (Mitchell, et al., 2011). The museum was a central part to the identity of an anatomy teacher, without which this identity could not be constructed. This quote, taken from Frederick John Knox's instructive volume on museum management is a clear statement of this:

> *"he who attempt to teach anatomy without a museum bona fide his own, and, if possible, made by himself, as strictly deserves the name of imposter…every museum takes its character, as it were, from the person who may have formed that collection."*
>
> (Knox, 1836)

In the later Eighteenth-Century museums became a way for surgeon-anatomists to express their medical prowess and a source of economic and cultural capital as a material expression of their credibility (Alberti, 2011a). In addition to serving as a reference library for medical education the museum also acted as a medical trophy cabinet, housing fragments that reflected positively on Smith's reputation. The medical museum acted as another route to prestige, alongside public operations, for the ambitious surgeon in the overcrowded 19th century medical marketplace (Porter, 1997).

The museum as a teaching collection could generate significant financial gains for the collector. Private anatomical lecture courses were common in eighteenth and early nineteenth century Bristol, given by members of infirmary staff (Prichard, 1892). Cross (1927) states that dissections and lectures were performed by aspiring surgeons in Bristol, even before they were appointed Infirmary staff members. Smith's private museum was used by Richard Smith and F.C. Bowles to present two of these lecture series in the 1790s. Dr Thomas Beddoes opened his Pneumatic and Institutes in Clifton in 1793 and, in response to multiple requests, decided to present his own lecture series (Cross, 1927). Beddoes

enlisted the help of Bowles for his course, who in turn selected Richard Smith Junior to assist him, due to the latter's large collection of preparations and museum. These lectures were given in the Red Lodge and were presented on 'Structure of the Frame' and 'The Senses' in 1797 and 1798 respectively (Cross, 1927) and were engineered for an audience of medical men and the interested elite (Munro Smith, 1917). This mixed audience is symptomatic of the 18th Century phenomenon of 'polite-science', where lectures on anatomy were more similar to their counterparts in natural philosophy than to hospital instruction (Guerrini, 2004). These lectures provided a platform for ambitious medical men to enhance their status; a crucial aspect of a successful Georgian medical career (Porter, 1985). Munro-Smith (1917) attributes the popularity of the lectures to Bowles' high-quality draughtsmanship and Smith's excellent preparation of specimens. The lecture course enabled Smith to use his collection to establish his reputation as an important character in Bristol's medical community and to receive significant financial benefits from the audience fees (Munro Smith, 1917).

In order to contextualise the analysis and to add to the medical history of Bristol, a history of Richard Smith's museum, from foetal collection to present day remnants, has been pieced together from Smith's own papers (BRO: 35893/36), contemporary newspapers and various histories of Bristol.

3 RICHARD SMITH'S MUSEUM AT THE BRISTOL INFIRMARY.

The museum's history will now be explained and the relationship betwee space and status explored as the collection moved across Bristol within the Smith household. The disctibution of the medical community across Bristol was controlled by social status: Clifton was the preserve of the wealthy and elite physicians (and a few surgeons), Park Street and the commercial regions housed the surgeons and surgeon-apothecaries and the lowest tier of the unqualified surgeon-apothecaries or dispensing druggists was contained in the poorer east (Neve, 1987).

The collection was carried within the Smith's household throughout the lives of both Richard Smiths (Figure 2). Along this journey the museum also changed in accessibility and status, from an attic surgery in Counterslip to a purpose built museum in the Infirmary: a perfect representation of the same journey from deviance to institutionalised recognition that the practice of anatomy was also undertaking. The final realisation of an institutionalised museum from such a low status beginning reflects the hard work and determination of both Richard Smiths and shows how important the museum was in both of their lives and careers.

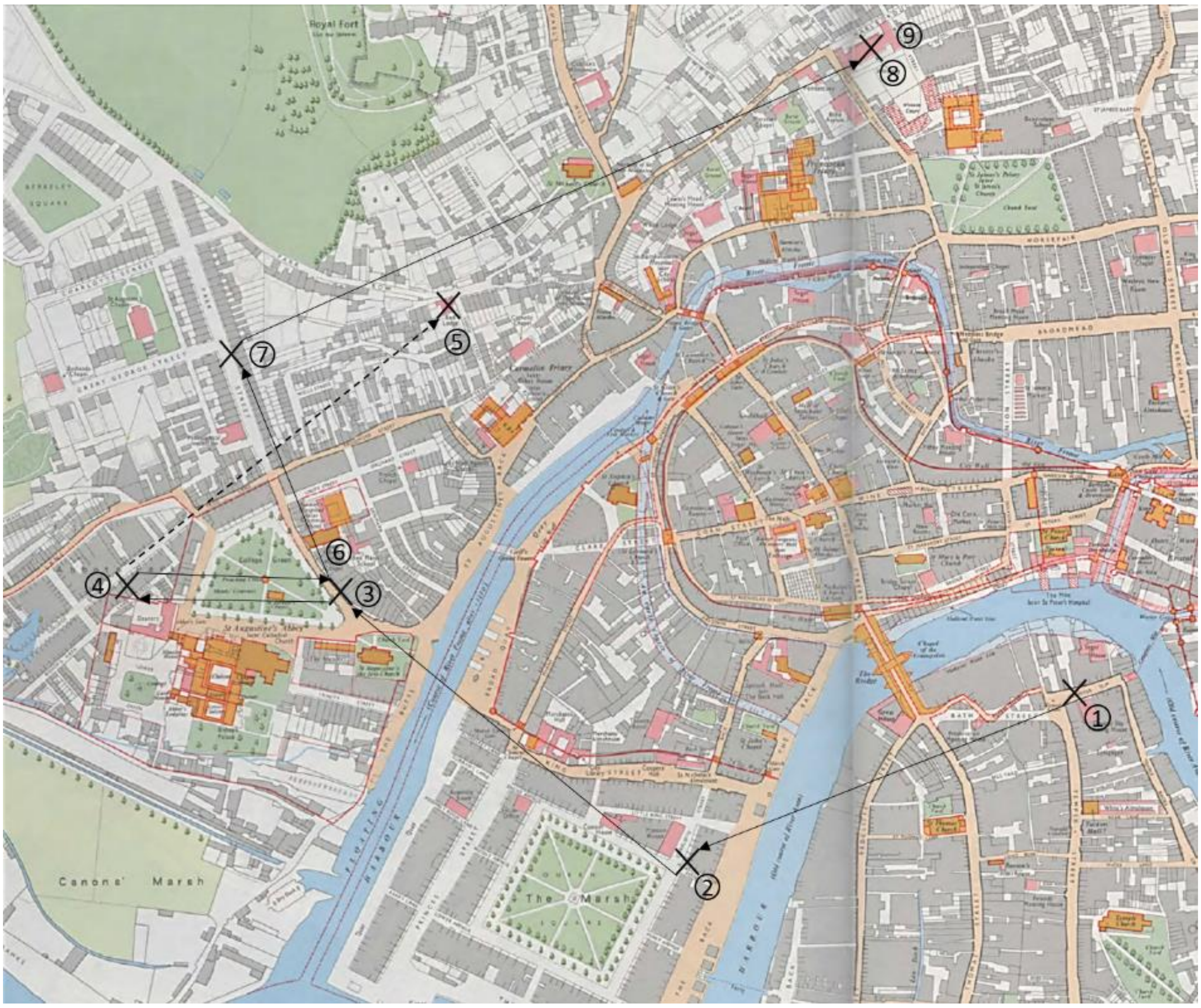


Figure 2: Map of the movement of the collection around Bristol, Bristol in 1820 (summary) © Historic Towns Trust 2011

1768 (1). The fundamental collection began as the private, and apparently unrivalled in England, collection of Richard Smith Senior (1748-1791) (Neale, 1963). In 1768 he returned to Bristol, after training in London, and started practice in the loft of his father's brewery in Counterslip (Sketchley, 1775), shortly afterwards he was elected surgeon at St. Peter's Hospital (Munro Smith, 1917).

Smith Senior was famed for his abilities as an anatomist and preparation-creator (Fissell, 1991), his collection containing nearly a thousand preparations (Biographical Memoirs Volume 6, BRO: 35893/36/f). Richard Smith Junior writes of his father's eagerness for anatomical preparations:

> *"for several years his excessive desire for information induced him to examine every subject that came in his way, and he generally contrived to carry off any parts worthy of a glass."*
>
> (BRO: 35893/36/f)

The infantile collection existed in Smith Senior's surgery in the cock loft of his father's brewery in Counterslip. This small space, typical in working houses, was intended to improve drainage and ventilation and not as a living or working space (Barley, 1991). Attics are a culturally symbolic space of deviance and concealement: as literary spaces of deviant gender (Gilbert & Gubar, 2000) and sexuality (O'Callaghan, 2014) or, more appropriately, wombs for the creation of scientific monsters in Mary Shelley's Frankenstein (Shelley, 1818). The sequestration of the collection in a culturally recognised deviant space reflects the position of anatomy on the fringes of acceptable science.

1771 (2). When Smith Senior moved to Queens Square in 1771 (Figure 3), his sugery was situated at the back of the house, with a separate enterance. In the homes of anatomists like John Hunter the museum formed a liminal space between the private dissecting rooms at the rear and the public reception rooms at the front of the building, bridging the divide between polite society and impolite anatomy (Chaplin, 2009). However this domestic museum space was also a space of conflict within the household. Smith Senior's ambition of creating a medical and chirurgical library within the home, funded by saving all the tuition fees from his pupils, was overruled by his wife (Biographical Memoirs Volume 6, BRO: 35893/36/f). The creation of a purpose-built museum within the home, like that of John Hunter, appears to have met opposition and the exact location and display of the collection within the house is unknown.

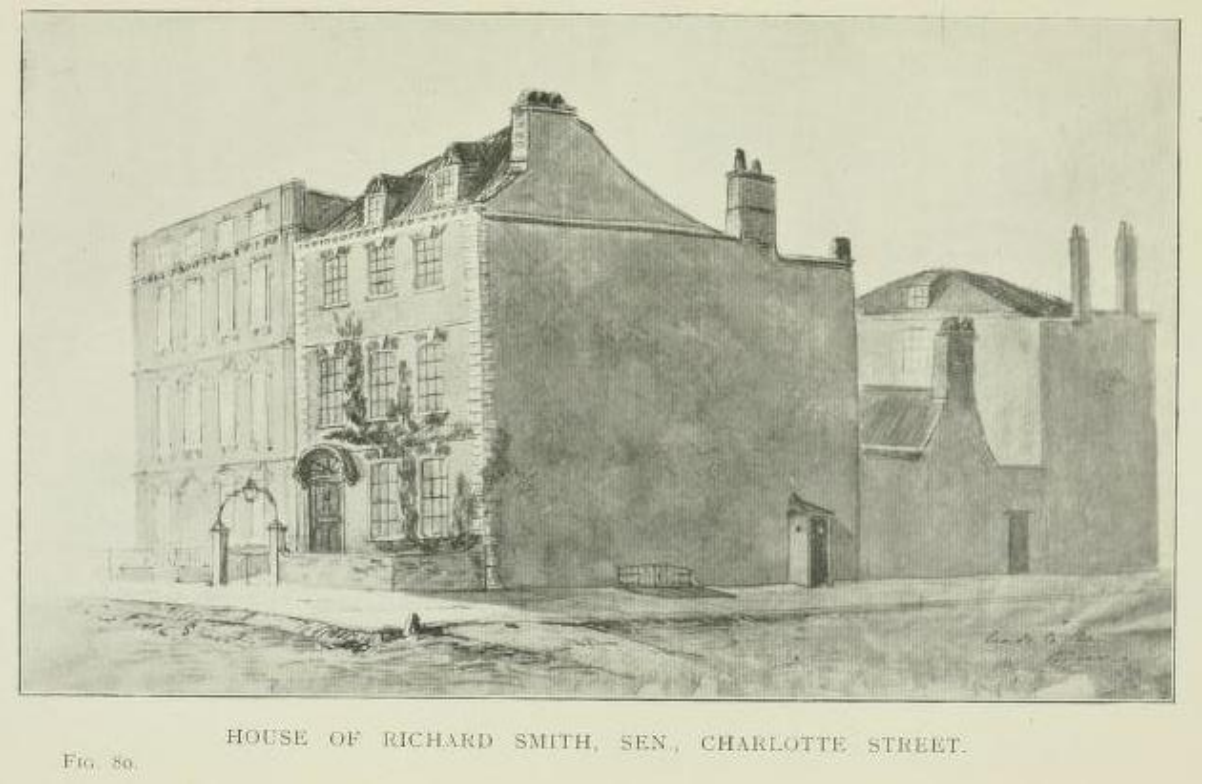


Figure 3: House of Richard Smith Sen. on Charlotte Street from Munro-Smith (1917)

1785 (3). The Smiths moved to College Green in 1785, on the site of the current Royal Hotel, where his father practiced surgery (Harsant, 1899)**,** placing the Smiths in the anatomical centre of Bristol (Munro Smith, 1917; Neve, 1987). The domestic museum provided a social space where individual talent could be presented. This ability of the domestic museum to display his labour in a sanitised and refined way was utilised by Smith Senior who invited eminent individuals to his home to view his collection. These individuals included Sir Everard Home, an eminent surgeon, medical writer and chief curator of the London Hunterian after the death of his friend John Hunter (Coley, 2004). William

Hetling (1831) recounts a time where he was invited to Smith's house to meet Home and examine his collection, Home stating that its uniqueness, expansiveness and quality was only surpassed by the Hunterian itself.

1791 (4). The location of the Museum between 1791 and 1803 is unclear, Smith Junior was living and working at his mother's house at 17 College Street (Munro Smith, 1917) before moving back to College Green in 1803. At his death in 1791 Smith Senior's collection contained over 1000 fragments, this large amount of material may have stayed in his College Green home whilst Smith Junior was at College Street. However, as Junior was practicing as an apothecary whilst at College Street and preparations were important in the apothecary's business (Chaplin, 2009), some movement of preparations between the two locations can be assumed.

1797 (5). In 1797 and 1798 Smith presented a lecture series alongside F.C. Bowles at the Red Lodge (Munro Smith, 1917). Smith used his collection to illustrate the lectures in a temporary exhibition of his work, foreshadowing the institutionalisation of his museum by briefly placing the collection within the public sphere. Teaching collections already existed on the boundary between the private and institutionalised collection (Alberti, 2011a) and this was a significant milestone in the museum's journey as a status enhancer for both collector and collection. The educational nature of the lectures, and mixed (medical and non-medical) audience, ascribes a certain amount of authority to the preparations as they are interpreted as objects of truth and knowledge. The alignment with fashionable elite culture and polite science also served to temper the 'quintessentially impolite' (Guerrini, 2004) reputation of anatomists and promote Smith as a refined man of science in the community. This palliation of anatomy is increased when, in their second series, Smith and Bowles devised a course suitable for a female audience. The syllabus was centred around descriptions of the '*beautiful*' and '*wonderful*' structures of the body and matters relating to childcare, whilst the demonstrations and details of violent injury from the men's course were omitted:

> *"… it is not that any thing will be even hinted at which could give alarm to the most scrupulous delicacy… We shall not go into such minuteness of demonstration as before you. We might aim at some new modes of illustration and the be fuller on matters that fall under female management"'*
>
> Dr Beddoes promoting the lectures to their male audience from the Biographical Memoirs Volume 5: BRO: 35893/36/e_i

By inviting women Smith and Bowles are publicising their medical reputations to a much wider audience but, as this declaration shows, they are cautious of the potential negative impacts that would

come from exposing women to subjects deemed too obscene. The live demonstrations were ommitted, emphasising the place of the anatomical preparation on the very fringe of acceptability as the polite face of anatomy.

1803 (6). Smith moved back to College Green in 1803 as a general practitioner (Munro Smith, 1917), most likely using his father's old surgery.

1803-1806 (7). Smith moved to the fashionable Park Street sometime between 1803 and 1806, the earliest reference being a complaint made to the Infirmary treasurer on 27th January 1806 about a corpse being exhumed from the burial ground and taken to Smith's coach house in Park Row (Munro Smith, 1917). The placement of deviant anatomy into a third space, the liminal space of the coach house, is a significant separation of the subversive activity from the domestic home and professional workspace. The museum preparation, as a sanitised and legitimate form of human remains, was able to move between these spaces. Again, this location doubled as a home and workspace where he would tend to his museum between patient consultations, with the entrance to the surgery being at the back of the house in Park Row (Alford, 1890, p. 180). This implies that Smith used the same space for his consultations and preparation creation, highlighting the difference in acceptability between dissection, which was relegated to the coach house, and preparation creation that could occur in the main surgery.

1827. The year 1827 sees the biggest change in the status of the museum as it becomes institutionalised within the Infirmary. Although Smith retained symbolic ownership of the museum it was now in a relatively public environment, open for additions and available to be viewed and interpreted in Smith's absence. The museum (and library) at the Bristol Royal Infirmary was founded in 1827 when Richard Smith Junior and, another surgeon, Richard Lowe donated a collection of preparations and books respectively (Munro Smith, 1917) . They were situated on the ground floor of the west wing of the Infirmary, in three rooms that used to be servants' quarters. The museum was arranged by pathological department, with sections such as Necrosis (tissue death) and Struma (enlargement of tissue and archaic term for cutaneous tuberculosis (Farlex Partner Medical Dictionary, (2012)) (Francis, 1836). Richard Smith had bequeathed a fund of four hundred pounds in consolidated bank annuities for the maintenance of his museum, this fund was controlled by the surgeons of the Infirmary, although in 1870 the Board of Trustees attempted to establish some control over it (Anon., 1870). This museum was not only a space for displaying preparations but also hosted lectures: the first lectures in the Bristol Medical School, recognised by the College of Surgeons, were given there by William Hetling (the first lecturer of surgery) in February 1831. Medical museums frequently

functioned as event spaces as their impressive displays gave the impression of institutional stature and scientific legitimacy (Ahren, 2013), reminiscent of the role of the domestic museum in expressing personal talent and intelligence.

The importance of the museum in determining the value of the infirmary as an institution of education is highlighted in an article from the Bristol Mercury in June 1833:

> *"The Bristol Infirmary is a well-appointed and well-regulated establishment. It possesses a good library, a fine museum, and able professional officers, and must afford to students an admirable field for obtaining medical and surgical knowledge."*
>
> (Bristol Mercury, 1833)

1857. In 1857 the decision to construct a purpose-built location for the museum was made, part of the extension including the new chapel, under which the museum was situated, designed by architect S.C. Fripp (Munro Smith, 1917). S.C. Fripp was a prominent architect and the building is considered the oldest example of Bristol Byzantine architecture (see Figure 4 and Figure 5), this marks the climax of the museum's prestige. The positioning of the museum underneath the chapel was an unusual feature and unique to Bristol (Historic England, n.d.), spatially realising the Christian conception of earth, in a museum filled with disease, decay and death, under the chapel's promise of sacred, righteous eternity. The placement of the morbid, dividual body of the museum underneath the holy chapel is architecturally reminiscent of a 15th century transi tomb, acting as a reminder to prioritise morality and spirituality over daily desires (Hallam & Hockey, 2001). The new building cost around two thousand pounds, raised especially for the purpose: the treasurer, Mr. J. S. Harford, contributed a

Figure 4: Museum and chapel building, South-West prospect (Pedwell, 2018)

Figure 5: Chapel and Museum building, South-East prospect (Pedwell, 2018)

large sum towards this, the staff subscribed fifty pounds and a large quantity of stone was donated by Mr. William Miles (Munro Smith, 1917).

The opening of this new museum in 1860 was a formal affair, the importance of it highlighted by the description of the day as the museum's 'day of consecration' (Munro Smith, 1917, p. 328) by the senior Physician, Dr Budd who gave an address at the ceremony. In this address Budd drew attention to some of the more notable preparations: a kidney stone from Robert Hall, a famous preacher, the femur of the first person to receive an amputation through the hip joint in England (BRI: RC41, see Figures 6 & 7), the two skeletons of Maria Davis and Charlotte Bobbett and "*other gruesome curiosities"* (Munro Smith, 1917, p. 328).

Figure 6: RC41, anterior view.

Figure 7: RC41, posterior view.

During this move all the specimens of the museum were re-arranged (Cross, 1927). This is a significant event in the museum's history as it distances Smith from his museum by relinquishing his control over the presentation of the specimens. The Museum was also intended to house paintings of previous, notable medical staff and be used as a microscope and photography facility (Munro Smith, 1917). This stage of the museum's journey is both the climax of its prestige and symbolic of the demise of Smith's control over it.

An article in the Bristol Mercury from the 6th October 1860 includes a description of the purpose-built museum and its contents:

> *"Over the door at the entrance was an inscription in old English, "Museum founded by Mr. Richard Smith, 1827." Round two sides of the apartment ran a narrow gallery, in which were several objects under powerful microscopes upon a table, and books containing interesting botanical specimens, while round the walls were many photographs of celebrities more or less chirurgically famous. The centre of the ground area was occupied by a large case, in which was a most extensive collection of calculi, with but two exceptions the best in England. Near the entrance are two cases containing objects to which a fearful interest is attached, the one containing the skeleton of John Horwood, executed for the murder of Eliza Balsum in 1821; and the other those of Maria Davis and another woman, who perished on the gallows for the murder of the infant child of the former. There is likewise present a rope, traditionally said to have been that with which Horwood was hung; and the cap which he wore in his last moments. Round the room are ranged, in glass cases, specimens interesting to all who study Nature in her eccentricities. Here, preserved in spirits of wine, are the distorted forms of ill-fated infants; there hideous casts of adults, whose features appear to writhe in anguish as you behold them. Affixed to the balustrade of the gallery are oil paintings of gentlemen noted for their connexion with the Infirmary… Lower down on the wall, and beneath that of Richard Smith, are portraits of the present honorary physicians of the Infirmary, while surrounding them are upright cases of specimens, from one of which "A skeleton's head is exposed" to the curious beholder…"*
>
> (Bristol Mercury, 1860)

Whilst the honorary staff were officially in charge of the museum, the residential staff enacted most of the work. In 1858 it was suggested that the official post of museum curator should be appointed to

the assistant physician, simultaneously the charge of the dead house be given to the assistant surgeon (Munro Smith, 1917). In 1870 the position of curator of the Museum was assigned to the Assistant House Surgeon and it was ordered that they attach a label with Richard Smith's name on it to all of his specimens and the specimens procured using the fund that he bequeathed, contributions to the museum were also invited (Anon., 1870).

1880. In 1880 the museum was used to host a surgical demonstration by the pioneering surgeon Joseph Lister, where he publicly performed an operation on a woman with an abscess on her neck, demonstrating the use of carbolic spray as an antiseptic (Munro Smith, 1917, p. 355). This was a well-attended and significant event, the use of the museum as a venue highlights its social prestige as well as medical application.

1894. The museum was not a static entity and in 1894 some of the preparations were removed to form part of another temporary museum in the University College for the annual meeting of the British Medical Association:

> *"A large number of specimens have been selected from the museums of the Infirmary, the General Hospital, and the Children's Hospital by their respective pathologists, and have been arranged by the committee in a series of sections, the classification being anatomical."*
>
> (Anon., 1894)

A special catalogue was issued for this occasion.

1937. In an article celebrating the bicentenary of the Infirmary, in 1937, the museum is referred to as still being regularly used as an educational facility for medical students. (ANON, 1937)

1941. The museum was heavily damaged in 1941 when the Infirmary mortuary took a direct hit, and was completely destroyed, by a bomb (Perry, 1981). However, the visitors book for the museum extends until 1948. This was also the year that the hospital came under the control of the National Health Service (Perry, 1981).

1951. The John Horwood book was exhibited as part of the Festival of Britain exhibition in Kingswood but was removed due to public protests (Belfast News-Letter, 1951).

1969. The latest reference to the museum still existing, although being in a degraded state, occurred in 1969 when Eyre-Brook wrote that the skeletons of two women executed for infanticide still survive in the "*remnants of the museum"* (p.5).

2011. The skeleton of John Horwood that was kept in the University of Bristol was reclaimed by his living relatives and buried on the 13th April (BBC News , 2011; Halliwell, 2012).

2016. The surviving fragments were discovered in a cupboard in the mortuary of the University Hospitals Bristol (Kenny & Skilton, 2017). The wet specimens were donated to the Gordon Museum in London and the collection of 95 bone fragments was sent to the University of Bristol Anthropology and Archaeology department to be studied and used again as a teaching collection.

2017. The museum building itself survives, having narrowly escaped destruction in 2017 (Bristol 24/7, 2017) (RPS CgMs Development Control Committee B , 2017), due to public opposition regarding the architectural and historical significance of the chapel (Bristol Post , 2017) (Bristol Post , 2017). The chapel is now a Grade II listed building. The interior of the museum had been subdivided and repurposed into offices and has been designated as being of no architectural or historical interest under the Planning Act 1990 (Historic England, n.d.). The disappearance of the museum at the BRI reflects the disappearance of many medical museums during the twentieth-century: many did not survive the austerity after the First World War due to their exclusive admission policy at a time when other museums became more public (Alberti, 2011a).

3.1 CONTENTS OF THE MUSEUM

Descriptions of Smith's museum always mention medical curiosities (usually the 'monstrous births'), the Murder Act displays, his calculi collection and a significant collection of bone diseases (Francis, 1836; Cross, 1927; Bristol Mercury, 1860). Unfortunately the calculi collection did not survive but by studying the remnants of the bone collection (BRIPSC), Smith's own catalogue (BRO: 35893/36/y) containing details of his soft tissue preparations (including several '*lusus naturae'* births) and, among other historical sources, Smith's detailed notes about the Murder Act skeletons (BRO: 35893/36/v_ii; 35893/36/u) this study covers the other main features of this museum. Munro Smith (1917, p. 89) lists "*tumours, abscesses, contusions, fractures, wounds, diseases of bone and a large number of ulcers"* as the main surgical cases in the Infirmary, evidence of this is found in both Smith's catalogue and the BRIPSC.

BRIPSC. The surviving fragments in the BRIPSC are almost entirely pathological human bone, 10 of which can be traced back to Richard Smith (Table 9). The museum was said to have had a large

collection of diseased bone (Cross, 1927) but due to the many potential factors that influenced the survival of these particular fragments their composition cannot be used to represent the whole collection.

Table 1: The fragments from the BRIPSC associated with Richard Smith.

No.	Description
GP4	Tibia diaphysis, osteomyelitis.
RA3	Tibia and fibula, osteomalacia or 'fragilitas ossium'. (see Figure 8 & Figure 9)
RA4	Long bone diaphysis, osteoporosis or 'fragilitas ossium'. (see Figure10)
RA6	Skull, hydrocephalus.
RC34	Distal tibia, osteomyelitis and amputation.
RC35	Distal femur, tibia, fibula, talus and calcaneus, osteomyelitis and amputation.
RC41	Distal femur, osteomyelitis and amputation.
RC41 (74)	Proximal femur, osteomyelitis and amputation.
RE5	Right tibia and fibula, syphilitic node or 'fungus haematodes'.
RE8	Left frontal and parietal, Morgani's syndrome. (see **Error! Reference source not found.**Figure 11 and Figure 12)

Figure 8: Inscription on RA3 posterior tibial diaphysis: 'a specimen of fragilitas or mollitas ossium... it will float on water'

Figure 9: RA3, anterior view.

Figure 10: RA4: 'fragilitas ossium'

Figure 11: RE8: Endocranial surface, inscription reads: 'Mr Richard Smith, Bristol Infirmary'

Figure 12: RE8: Ectocranial surface, inscription reads: 'Thickness rather more than three'

An overview of the entire collection is presented in Figure 13, see appendix A for an explanation of the categories, and detailed in Appendix H.d. The pathological composition of the collection was ascertained through examining the physical material and using any additional information in the accompanying catalogues.

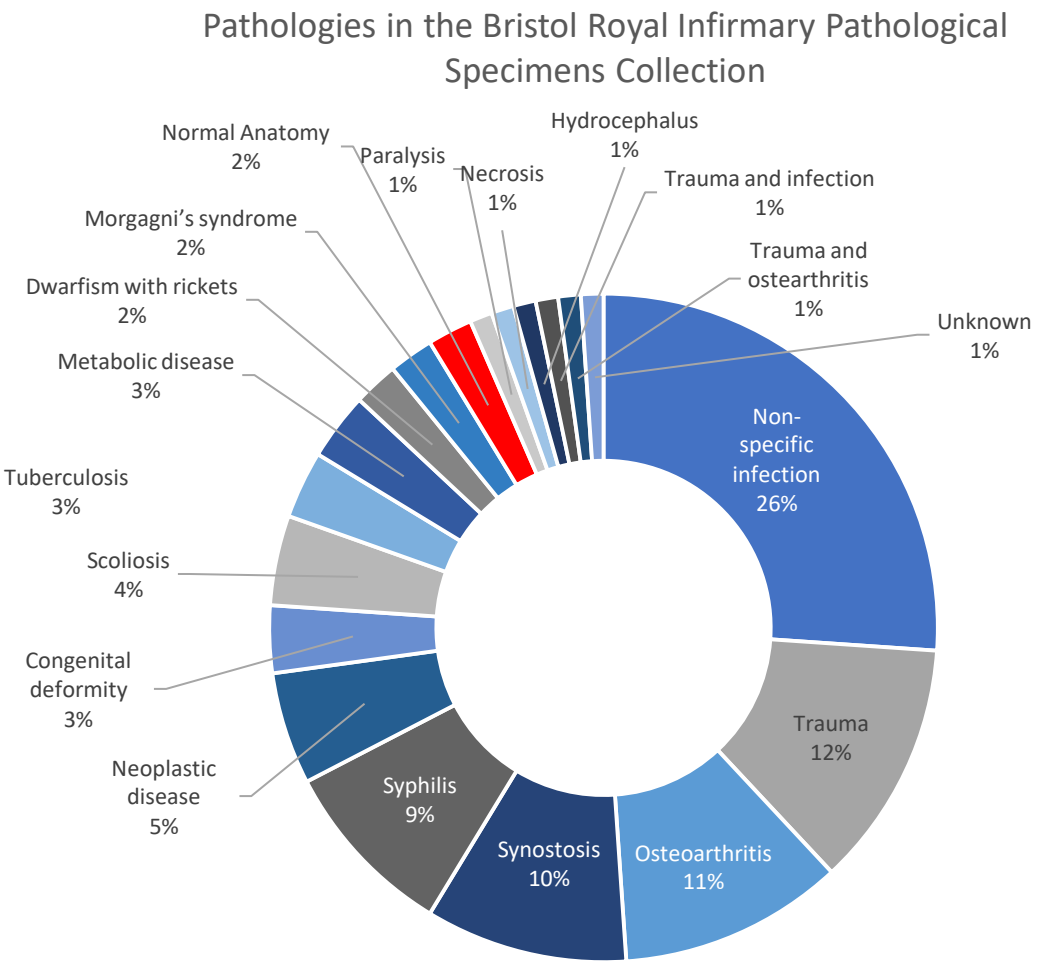


Figure 13: Pathologies in the BRIPSC

BRO: 35893/36/y. Smith's own catalogue lists 211 items, six of these being duplicates or blank. Out of this 205, four were uncategorizable due to the illegibility of the catalogue's handwritten nature. The remaining 201 items consisted of a range of anatomical and pathological fragments, in addition to human and comparative (animal) tissue (Table 10, Figure 14).

Table 2: Composition of the BRO:35893/36/y catalogue

Tissue source	Frequency (% of total)	Nature of preparation	Frequency (% of total)
Human	165 (82.1%)	Pathological	72 (35.8%)
		Anatomical	93 (46.3%)
Comparative	35 (17.4%)	Pathological	18 (9%)
		Anatomical	17 (8.5%)
Both	1 (0.5%)	Pathological	1 (0.5 %)

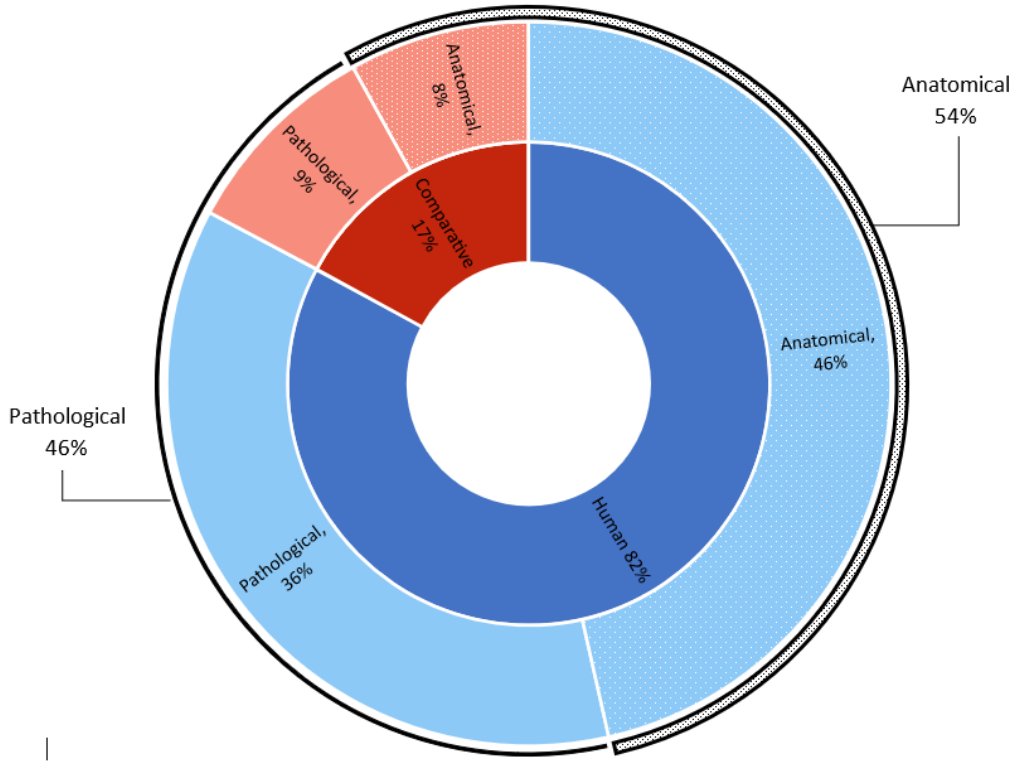


Figure 14: Composition of the BRO:35893/36/y catalogue

The fragments were defined as 'anatomical' if they referenced a healthy specimen intended to show structure or progress and the term 'pathological' refers to the preparations containing evidence of disease or deformity. There were eight catalogue entries for specimens of human parasitic worms, these were categorised as pathological comparative material as they display animal tissue but are presented as evidence of human disease, the hydatid cysts however, caused by the tapeworm's larval form, were categorised as human. The catalogue contained mostly soft tissue and included details on

the preparation of the fragment alongside a visual description, observations and, for some, medical case notes.

This chart shows the pathological makeup of the catalogue, for comparative purposes with the BRIPSC, see appendix B for a description of the categories. As this study is concerned with the social relevance of the collection, and lacking the actual specimens to compare with, this is a simple overview of the conditions detailed in the catalogue. The relevance of this catalogue is the opportunity it presents to study Smith's own thoughts about the preparations.

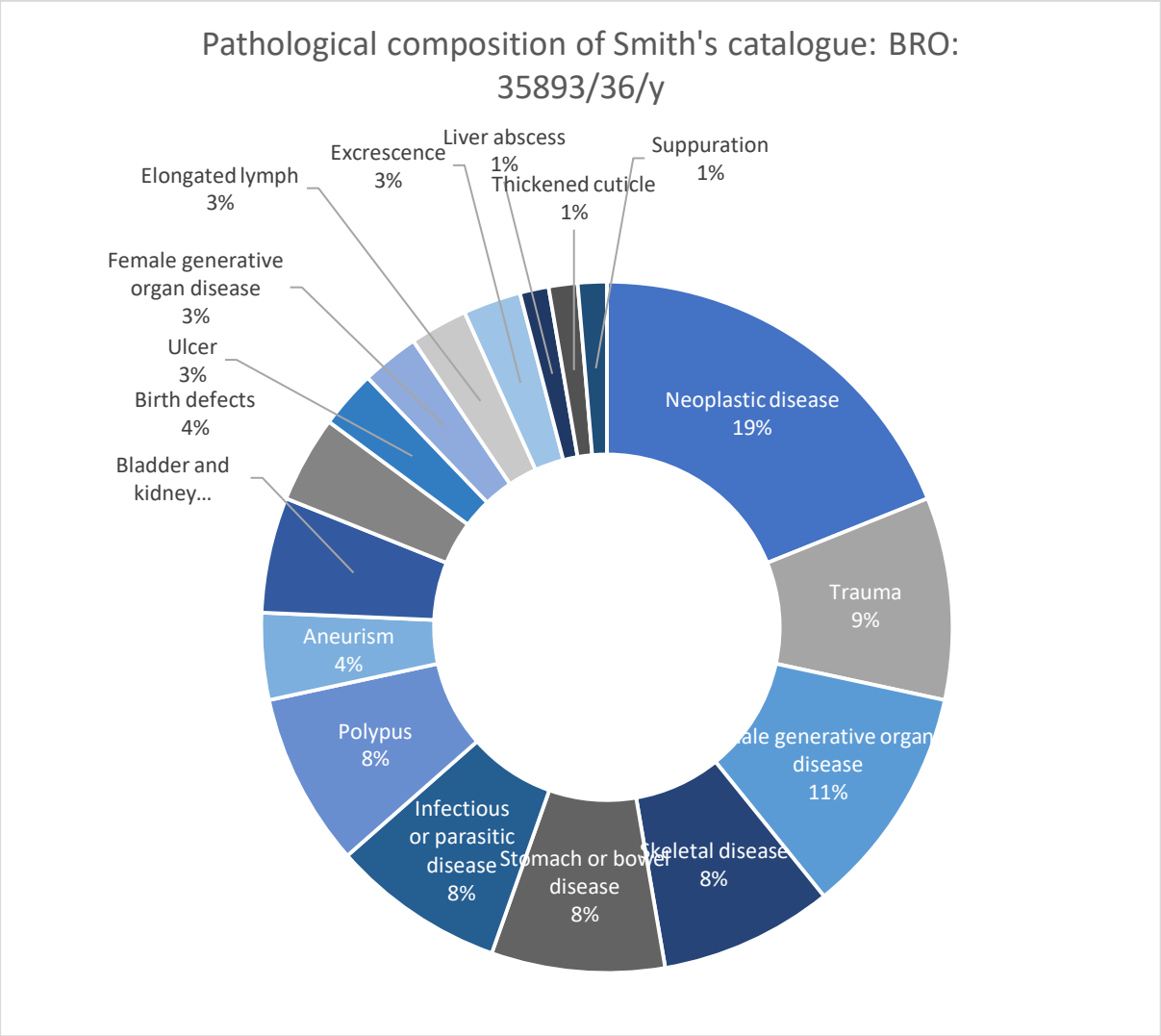


Figure 15: Pathologies in the BRO:35893/36/y catalogue

There are some similarities between the two data collections, both have a high occurrence of trauma, including both accidental and treatment-derived such as amputation or trephination.

The skeletal fragments detailed in Smith's catalogue include two cases of spina bifida, one distorted spine, one exfoliated hip cartilage, one cartilaginous substance removed from the knee and one carious tibia.

Almost half (79) of the 165 human fragments were related to procreation or pregnancy: 48 foetuses, 2 placentas and 1 umbilical cord, in addition to 18 descriptions of the male, and 10 of the female, sexual and reproductive organs. The fragments showed a mix of development and disease, including two '*monstrous births'*.

Historical Sources. The main medical attraction of Smith's museum was his expansive collection of Calculi, meticulously sawn through and displayed on a card with the name, age and residence of the patient (Francis, 1836; The Belfast Daily Mercury, 1856). The collection contained almost 900 calculi of which 204 had been removed from Infirmary patients and was described as the pride of the museum by Dr. Budd at his opening address in 1860 (Bristol Times and Mirror, 1860). See appendix F for a catalogue of the museums other contents, including the Murder Act collections.

3.2 CATALOGUES

There are numerous different catalogues of the collection, undated and anonymously written. They include details of a much larger collection, most of which seems to have been lost. The BRO: 35893/36/y catalogue is most likely the oldest existing catalogue: It was written sometime between 1813, the latest date listed in the entries, and 1843, when Richard Smith died, but was perhaps most likely written around the time the collection was donated in 1827.

The BRIPSC was discovered alongside a large collection of catalogues, most of the specimens labelled with an 'R' number appear in them although different numbering systems were used in different catalogues. The Bristol Royal Infirmary Museum Catalogue of Surgical Specimens I & II (BRIMCSS I&II), lists the bones from number 1-250. This catalogue is clearly meant to be read in situ as it contains instructions to compare specimens with others, it is also likely that it is one of the older catalogues: both a separate later catalogue 'R' and the University of Bristol Pathological Specimens Catalogues list

> *"In 1885 it was declared by the faculty to recommend the appointment of a Honorary "Demonstrator in Morbid Anatomy" who was to have control of the arrangements in the post-mortem room, give demonstrations at autopsies and see that careful records were kept."*
>
> (Munro Smith, 1917, p. 392)

the preparations by the 'R' number labelled on the bones themselves but reference the number from the BRIMCSS I & II. Many specimens in these two catalogues had PM (post-mortem) reference numbers included in their description, however none of the surviving specimens had reference to a post-mortem. Potentially this might be because these specimens were created before regular post-mortem records were common. Munro-Smith writes that:

This might signal the start of the post-mortem records. The Bristol Records Office holds post mortem records for the Bristol Lunatic Asylum and Glenside Hospital from 1879 (BRO: 40513/C/18) and for the Bristol General Hospital from 1900 (BRO: 40530/C/7/a). This agrees with the thinking that it was around this time that post-mortem records began to be created.

Munro-Smith (1917) includes several names associated with the creation of a catalogue: Nathanial Crisp, house surgeon, created a catalogue of the Museum and maintained it whilst it was in its initial location. Munro-Smith (1917) offers another potential candidate for the author of the museum catalogue that was discovered alongside the preparations. Dr Fisher, who was the honorary pathologist at the Infirmary from 1895, was said to have been greatly invested in creating a catalogue for the specimens (p. 457). This would have involved both the original donations and those of subsequent students, who were permitted to create preparations for display (p. 298). There is mention of an Dr J.J.S. Lucas as assistant curator of the museum, as well as demonstrator in morbid anatomy, in 1906. (p.400).

3.3 VISITORS

The museum was open to the hospital subscribers every Tuesday morning (Munro Smith, 1917). The quality and acclaim of the museum also attracted a wide range of other visitors including surgeons who had travelled from London to visit it (Neale, 1963) and medical practitioners from all over the British Empire (Bristol Mercury, 1843).

The Bristol Records Office holds the visitors book for the museum from 1838 to 1948 (BRO: 35893/36/X). The book does not provide a complete profile of the visitors, being sporadic and incomplete, but can elucidate some information about the kinds of people visiting the museum during this period. Most visitors came from within the medical profession, were Bristol based and were male.

Table 3: Table explaining how visitor professions were categorised

Category	Description
Medical	All medical professions including surgeons, physicians, medical students, dressers, nurses, military surgeons.
Trade and Manufacture	Merchants, craftspeople, farmers, engineers.
Legal and administrative	Clerks, barristers, solicitors, book keepers and law students.
Gentry	Gentlemen and Ladies.
Academia	Non-medical lecturer, professors, scholars and teachers.
Church	Clergymen and ministers.
Military	Majors, sailors and inspectors.
Other	Yeomen, artists, prostitutes, servants.

Figure 16 shows that the highest proportion of visitors came from within the medical profession, initially the number of non-medical visitor was high however this rapidly declined after Smith's death in 1843. The spike in numbers in 1860 correlates with the opening of the new museum, increasing visitor numbers and potentially inciting a desire to record their presence in the book.

The three biggest non-medical professional groups reflect were trade and manufacturing, legal and administrative and the gentry (Figure 17). This reflects Smith's social aspirations with the elite classes, the subscribers of the Infirmary and the Murder Act displays within the museum potentially attracting the law students. This reflects the role of the museum as a social space for Smith, where high-status visitors could be entertained and exposed to Smith's talents and character. This use of a museum to cultivate regard and social status outside of the medical profession was a common occurrence: John Hunter freely admitted prominent members of the church, military and state to his museum that was otherwise required approval for access by medical persons (Bates, 2008).

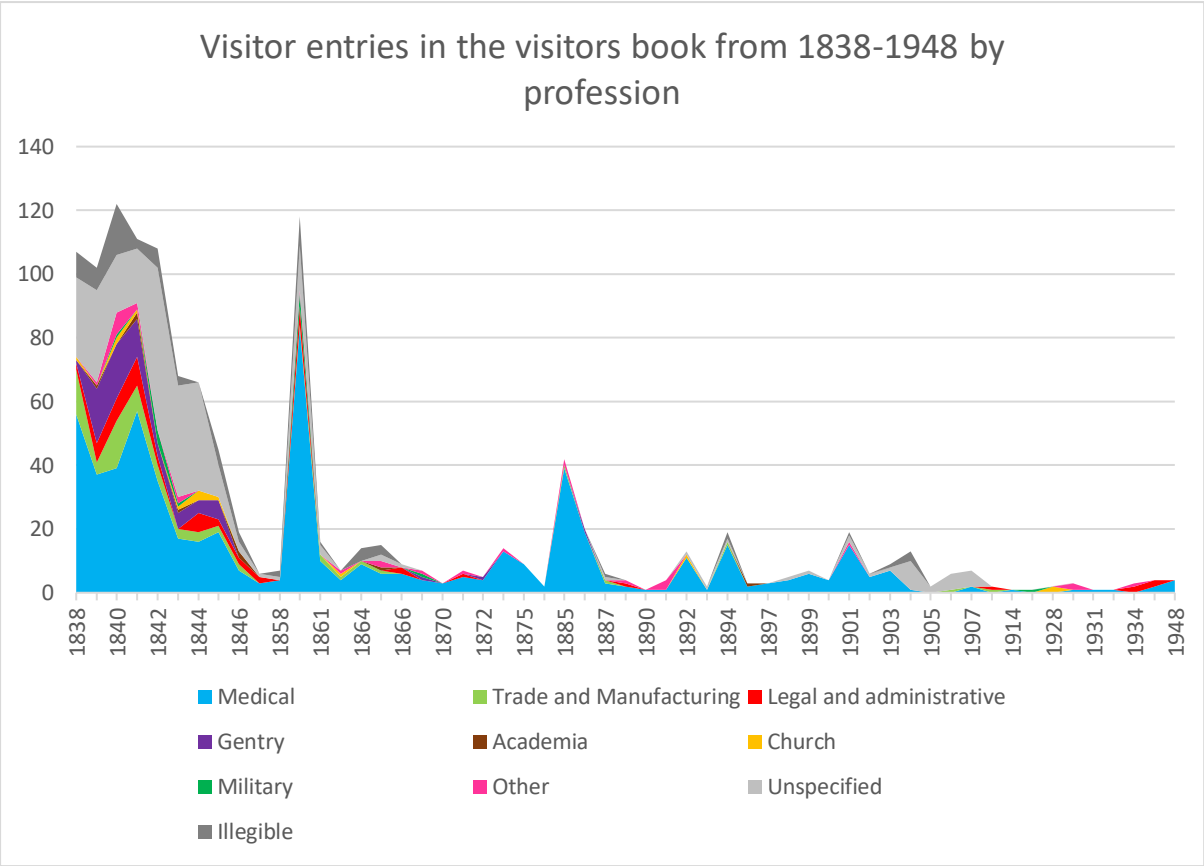


Figure 16: Visitor entries by profession

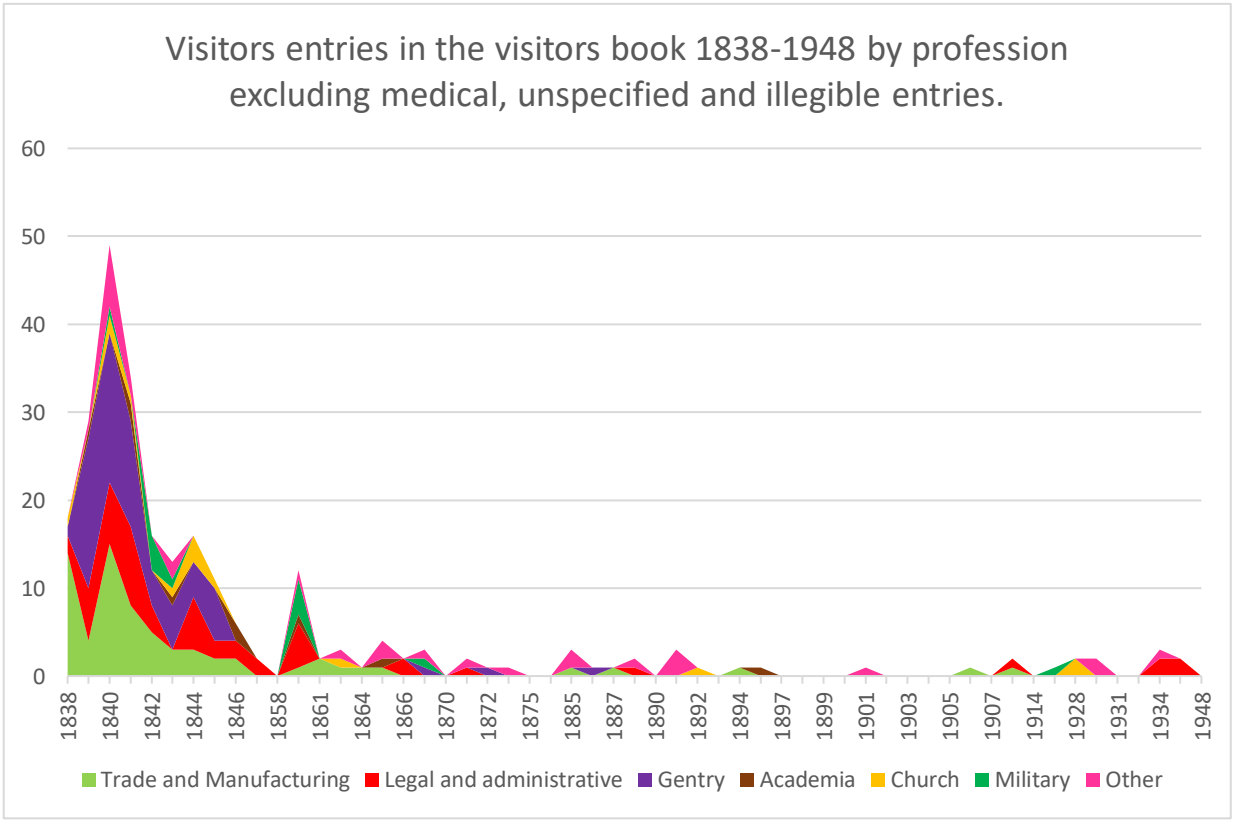


Figure 17: Non-medical visitor entries.

The majority of visitors were men, however there were entries by women in the book. Initially they were exclusively ladies who had all visited in groups, later entries showed a wider range of occupations including actresses and, from 1898-1901, nurses (Figure 18). The number of female visitors was very low and they never visited alone, the exact number is made even less clear as some entries simply list one name 'and friends', for example: April 16th 1839 Miss Moore 'and friends'. Vandalism of the book hints at the perception of women visitors by others in the museum. Under the entry of a Mrs M.H. Harvey on November 22nd 1840, where she has included her profession as 'Lady' someone else has added the phrase 'Really?'. Similarly in the blank occupation box of two illegibly named women from Bath (Mrs and Miss) on September 29th 1842 and Baroness Notcchen, also from Bath, on January 20th 1843 someone else has scrawled the words 'Prostitute'.

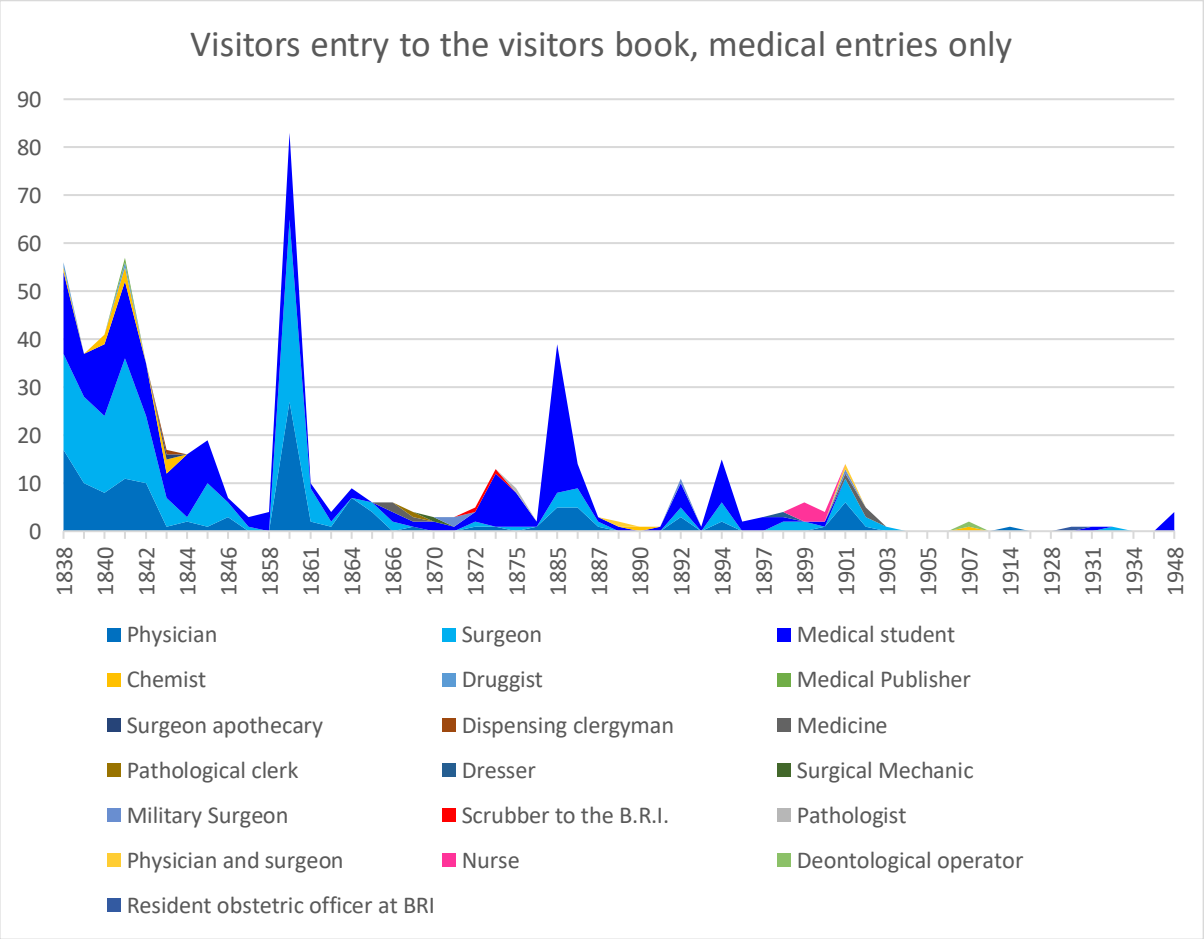


Figure 18: Medical visitor entries

There are entries for visitors from a wide range of places: P.G. Stock from South Africa, Sigrid Carlson from Stockholm, H. Baiyley from Colombo and James Bryan from Philadelphia. Several noteworthy people visited the museum including the Scottish civil engineer James Abernethy (1838) and the Welsh preacher and non-conformer Thomas Gee (1839)

3.4 RICHARD SMITH JUNIOR

Table 5: Timeline for the life of Richard Smith Senior

1748	Born at Counterslip
1762	Apprenticed to John Townsend, Surgeon to the Bristol Infirmary.
?-1768	Studied in London.
1768	Returned to Bristol, started to practice and elected surgeon to St. Peter's Hospital.
1774	Elected surgeon to the Bristol Infirmary.
1791	Dies.

Table 4: Timeline for the life of Richard Smith Junior

1772	Born in Queens Square.
1785	Moves with his family to College Green.
?	Indentured to his father as a medical student.
1791	Richard Smith Senior dies and Junior becomes the indentured to Godfrey Lowe.
1793	Commences practice at 17 College Street. Serving as apprentice under Broderip.
1796	Becomes a surgeon at the Infirmary.
1797	Presents lecture series on the Structure of the Frame with Bowles.
1798	Presents lecture series on the Senses with Bowles.
1802	Marries Anna Eugenia Creswick.
1803	Moves back to College Green as a General Practitioner. Becomes chief of the Medical Staff of the Bristol Volunteers.
1804	Becomes a proprietor of the Bristol Mirror.
1806	Earliest record of him living on Park Street.
1812	Becomes a senior surgeon at the Infirmary.
1817	Becomes a Freemason
1820	Becomes Worshipful Master of the Royal Sussex Lodge of Hospitality.
1822	President of the philanthropic Dolphin Society.
1826	Donates museum to Infirmary.
1830	Becomes Deputy Provincial Grand Master.
1843	Dies.

The following information about the life of Richard Smith Junior is taken from Munro-Smith (1917). Richard Smith Junior was born in Queens Square on June 28th 1772. He served his apprenticeship under his father until his death in 1791, where he was taken on by Godfrey Lowe (the senior surgeon). In 1793 Bristol hosted 35 apothecaries and 20 surgeons, although most of the latter were general practitioners who sold their own medicines, and at this time Smith was serving as an apprentice under the apothecary Broderip (p. 250). On the front door of his first practice, at 17 College Street, the sign read: 'Smith, Surgeon' but the back door, in Lamb Street, it read: 'Smith, Surgeon and Apothecary' (p. 251). This spatial distinction is an attempt to acquire the financial benefits of apothecary whilst diminishing the social impact of the lower-status apothecary on Smith's reputation as a surgeon.

He became a surgeon at the BRI in June 1796 and married in 1802 to Anne Eugenia Creswick. The Creswicks were an old Bristol family and had a history of supporting the Infirmary: one of her ancestors had given the first sermon there on December 13th 1737. Smith's work as an apothecary was a lucrative pursuit and, despite dropping the term 'apothecary' upon his move to College Green in 1803, he continued to dispense his own medicines as a general practitioner (p. 251). This more inconspicuous approach to dispensing medicine reflects the desire to avoid association with unorthodox medicine whilst still utilizing the income source and was common among surgeons in Bristol (Neve, 1987). This dilemma between reputation and riches was expressed by other surgeons at the Infirmary: Munro-Smith (1917) explains that a Mr. Allard was so highly concerned with maintaining a reputation as a pure surgeon that he dispensed his medicines under the name of his apprentice, whilst still receiving all of the income (p. 251). The decline of the apothecaries commenced in 1805, to be replaced with the physician and the dispensing druggist (p. 253).

Smith became chief of the Medical Staff of the Bristol Volunteers in 1803 and became a proprietor of the Bristol Mirror in 1804. He remained at that post until his death on January 24th 1843. He was an active member of the Infirmary staff, attending all meetings and being greatly interested in the history of the institution and was described by Munro-Smith as a vivacious and sociable character.

Smith was elected senior surgeon at the Bristol Infirmary in 1812 and also had a general private practice and an operating and consulting practice. When he lived at 38 Park Street and would see patients there in the morning, they would usually enter his house through the back door on Park Row, and he would dispense medicine in a very '*rough and ready style'* (Alford, 1890, p. 180). He would tend to his museum specimens whilst waiting for these morning patients.

He was also an active member of the community: he became a Freemason in 1817, becoming Worshipful Master of the Royal Sussex Lodge of Hospitality in 1820 and finally Deputy Provincial Grand Master in 1830 (Munro Smith, 1917). In 1822 he was president of the philanthropic Dolphin Society,

raising £430 for the cause (The Dolphin Society, 2015). He was a member of the Bristol Institution and presented lectures there, on the 27th January 1825 he presented a lecture on the decomposition of the human body and the practice of embalming (Bristol Mercury, 1825), No.64, 'Cuticle from child's foot' from BRO:35893/36/y was used in this lecture. He was involved in the amateur music community of Bristol and founded the St Austin's Glee Society in 1832 (Hobson, 2010). Smith was a member of the Town Council from 1835 to 1843 (Bush, 1796).

Smith died suddenly at the Bristol Institution on Park Street in 1843 and his funeral was notably public. This was due to his other roles as a member of the Town Council, a charity trustee and Deputy Provincial Grand Master of the Masonic Lodge, in addition to his 46 year service as a surgeon in the Infirmary. Smith was so incapable in his final years that when he died a law was introduced that limited the time of office to twenty years (Harsant, 1899).

Richard Smith Junior played a central role in the development of much of the culture of anatomy in Bristol (Brunton, 2004). He was a firm advocate of the practice and was heavily involved in all its aspects, including the robbing of graves. The practices of body snatching and dissection were so intrinsic to the history of the Infirmary that Munro-Smith (1917) devotes an entire chapter of his historical work to the subject. This includes accounts of both the exhumation of bodies from graves and the theft of body parts even before burial. Smith asserts that for two years medical students would sneak into the dead house after the body of the deceased had been prepared for burial and their family was at dinner and steal cadaveric material. They would replace the bodies with items of the same weight and secure the coffins again (p.209).

Smith was a devoted member of the infirmary staff and was responsible for compiling a large proportion of the Infirmary history. His biographical memoirs were created from documents that he saved from destruction and repurposing and are a valued source of medical history (Bush, 1908). Smith was a theatre fanatic and had been attempting to write a history of theatre in Bristol in the latter part of his life (BRO: 45883/7-11). This theatrical inclination can be seen in the Murder Act displays in his museum, covered in chapter 7.

Smith had a well-known desire for collecting monstrous and morbid specimens (Harsant, 1899; Alford, 1890). Richard Smith Juniors passion for criminal relics has been emphasised, especially his fascination with those associated with murder (Cross, 1927; Harsant, 1899) or items of particular forensic interest (Neale, 1963; Bush, 1796). Alongside the specimens taken from the wards there were those of a personal nature including Richard Smith Juniors own milk teeth and the parrot of one of the deceased surgeons, complete with epitaph comparing its character to that of the surgeon (Munro Smith, 1917). Windsor (1994) states that the collection of unusual items (in his study this also included common, tat

or junk objects) is commonly used as an expression of intellect and that this 'quirky yet clever' (p. 64) identity is performed through the possession of knowledge about and respect for objects that others might discard or dismiss. This theory can be applied to Smith's collection as his combination of dispassionate medical preparations with criminal relics and curiosities, intended to provoke a reaction, aligns with the identity he himself embodied.

A few descriptions of the character of Richard Smith junior can be found, mostly in Munro-Smith (1917). He is described as a

> *"convivial, cheerful man, with a ruddy face, and a loud, strident laugh, which accompanied or followed his own gros mots* [swear words] *or his friends' stories"* (Munro Smith, 1917, p. 464).

Henry Alford (1890), a pupil at the Infirmary from 1822-1828, includes a description of the character of Richard Smith Junior. He is described as a loud character, well known and popular both within the medical community and in wider society. Alford comments on his inclination to tell obscene and comedic stories about his professional work, also including the seemingly contradictory assertions that he was reportedly a favourite among the patients, despite being:

> *"rather careless in the treatment of his patients'* and *'rather rough and reckless; and not very mindful of the feelings or state of his patients"*
>
> (Alford, 1890, p. 180)

Bush (1796) describes Smith as:

> *"for many years chief surgeon (or more precisely, the last "barber surgeon")".*
>
> (Bush, 1796, p. 134)

This obscenity may seem to contrast with the gentlemanly ideals of politeness usually associated with Georgian masculinity (Carter, 2014), in addition to the 'quintessentially impolite' nature of anatomy itself (Guerrini, 2004), but rudeness still persisted as an indicator of masculinity in exclusively male environments (Stafford, 2008), medicine being one of these. These accounts strengthen the interpretation of a symbiotic relationship between Smith's identity and his museum. His personal character was a combination of high intellect and medical ability with coarseness and unrefined

obscenity, a description that could be applied to his museum with equal aptness. His museum and his mannerisms were simultaneously expressions of and methods of constructing Smith's identity, and form elements of his extended self that represent Richard Smith Junior.

Repeatedly the more disturbing aspects of Smith's character and museum are dismissed as humorous quirks, even well into the 20th century, as it seems his pro-social actions were enough to dismiss his darker interests as endearing character quirks. This acceptance endures almost a century after his death as this excerpt from the Western Daily Press in 1936 proves:

> *"The Mr Richard Smith alluded to was not only an eminent Bristol Surgeon and a conspicuous friend of the Royal Infirmary, but he was a man of singular character and originality and possessed a grim sense of humour."*
>
> (Western Daily Press, 1936)

An 1856 article on the museum satirically remarks upon this acceptance of Smith's obsession with murder as a mere character quirk:

> *"Amongst his peculiarities, Mr. Smith had almost a morbid curiosity in criminal cases; a trait of character that may be veiled as a love of forensic medicine"*
>
> (The Belfast Daily Mercury, 1856)

The inseparability of Smith's character and that of the museum is highlighted through the mutually applicable descriptions of either. By creating a picture of the museum's visitors it is apparent that Smith used the museum to improve his social presence both within and outside of the medical community. The history of the museum shows that it was increasing in status, prominence and size along Smith's life and career. This expansion was enabled by the different ways that Smith added value to the collection. The following chapters will address the relationship between post-mortem journey and fragment status within the museum. The analysis will focus on how Smith uses the fragments to construct his own identity, by utilising the variation in status and value that the different routes provide. The first chapter examines the fragments that are presented as objects, a status that reflects the social value of inheritance, gift exchange and donation.

4 THE PHYSICAL OBJECT

The object histories of both individual fragments and, during significant status changes, the entire collection were prioritised by Smith because of the acceptability of an object to be *owned.* In Western thought the commonly accepted dichotomy of person and commodity (Kopytoff, 1986) makes the trade of human remains a problematic concept, although there is a long history of the practice including the medieval trafficking of saintly relics (Geary, 1986). Despite the common view that the process of dissection essentially commodified the human corpse, bodies were not legally considered to be property (Ross & Urquhart Ross, 1979). However, the act of creating a preparation legitimised, both socially and legally, the ownership of a human body (Chaplin, 2009). Through this legitimate ownership Smith uses the fragments as biographical objects to construct the identity of both himself and his father, guaranteeing their posthumous presence within the museum. By emphasising their object-nature Smith establishes his complete ownership of the collection, legitimises its transfer and uses the fragments to document his social connections.

As a museum preparation is capable of being owned it can become part of the extended self of those who own it, through gift exchange the object becomes a representation of the relationship between Smith and the giver. Museum display allows Smith to advertise his favourable social connections, mapping out an aspirational social network over the shelves. This function of the museum is found in its textual elements: the labels, catalogues and inscriptions that accompany the preparations.

The three exchange routes here are defined as such: 'inheritance' refers to the movement of the collection from Richard Smith Senior to Richard Smith Junior, 'gift' refers to the exchange of preparations between individuals and 'donation' refers to the movement of preparations from the individual to an institution.

4.1 INHERITANCE

Richard Smith Junior inherited the original collection from his father when he died in 1791, when Smith was just nineteen (Munro Smith, 1917). The bequest of a collection to an interested family member is a common occurrence, as fears about the degradation or fragmentation of a collection are common among collectors (Pearce, 1993). Objects that endure after the death of their owner extend the social life of the deceased past their biological death (Hallam & Hockey, 2001), their ability to influence the emotions and subsequent actions of the living affords them a type of agency as the post-mortem extension of a person (Lupton, 1998).

This relationship with his father is a central reason behind Smith's request to maintain guardianship of the Museum after its donation to the Infirmary, stating this in a letter to William Fripp, Treasurer of the Bristol Infirmary, in 1826:

> *"When I inform you, Sir, that the Museum owed its foundation, and a great progress, to the labours of my late universally respected father, and that I have zealously endeavoured to preserve and to augment it during a period of thirty-five years, I trust that you will excuse the wish to continue for the present its guardian."*
>
> (Biographical Memoirs Volume 6, BRO: 35893/36/f).

The museum's ability to embody his late father seems to have been a strong influence in his actions. Smith reassures himself that donation to the Infirmary is the correct decision by claiming that his father would have done the same, if Smith hadn't been born. To Smith, the museum is so completely his father's that he defines his own relationship with it as one of maintenance rather than of creation. Despite adding to it, using it as his own and changing its nature to include murder relics as a central feature, to Smith the collection is still that of his father.

Under Smith's interpretation the collection transitioned from a museum owned by his father into a museum about his father, housing relics of his surgical talent. The museum, and its catalogue, can be viewed as arenas in which the character and memory of Smith Senior were constructed. Through creating and investing labour into an object the creator instils more of themselves into it, becoming a valuable biographical object of the creator (Belk, 1988). The effort and dedication involved in creating a preparation, when combined with the investment into the associated surgical procedures, make anatomical preparations powerful biographical objects of their creators. It is unsurprising that they became compelling objects for Smith Junior as representations of his father's diligence and character. This role of the museum as a mausoleum of his late father was a conscious concern to Smith, who explicitly refers to the preparations as:

> *"monuments of what he* [his father] *had been."*
>
> (Biographical Memoirs Volume 6, BRO: 35893/36/f).

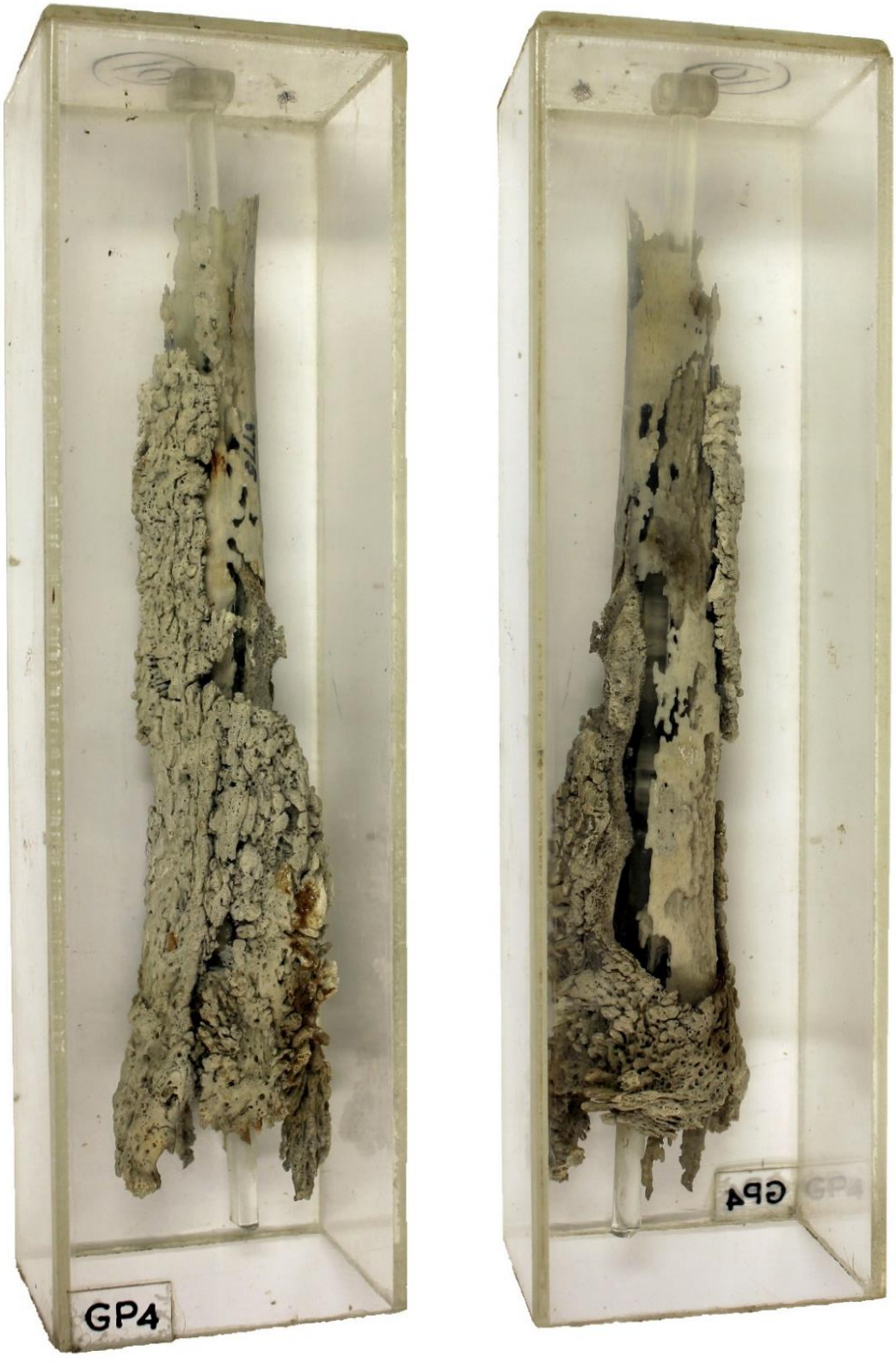


Figure 19: GP4 from the BRIPSC, anterior and posterior view, dated 1775 and likely that it was once part of Smith Senior's collection. The fragment has been encased in plastic at an unknown date.

Smith Senior's surgical reputation and social importance are maintained in the museum catalogue (BRO: 35893/36/y), Smith seems particularly concerned with associating his father with other notable medical names.

In entry No.159 Smith establishes a relationship between his father and Edward Jenner (1749-1823), the pioneer of the smallpox vaccine. By owning objects associated with another, a person can incorporate part of the other's extended self into their own (Belk, 1988). This association reflects positively on Smith senior's character as he assimilates Jenner's reputation into his own extended self, using Jenner's fame and status to feed his own.

> *"159. Specimen of the worms found in the stomachs of frogs, about the beginning of Autumn, heatviscus? Has been injected and they continued to adhere to the villous coat. It was sent by Mr E. Jenner of Berkley to the writer's father."*
>
> (BRO: 35893/36/y)

Although this specimen seems more aligned with a natural history collection than a medical museum, its inclusion highlights the importance of advertising the relationship between Smith Senior and Jenner. Whilst this specimen may seem at odds with the collection when viewed as a resource for medical education, it fits perfectly as a reputation enhancer in Smith's shrine to his late father.

Smith died without any children to bequeath his collection to so his decision to create an institutionalised museum is an unsurprising one, allowing both himself and his father to prolong their influence and importance after both their deaths. The type of history told by these fragments is defined by their journey from father to son as they become objects embedded in this relationship. Because of the route they took from father to son these fragments are viewed as objects, biographical objects of Smith Senior's surgical prowess and social connections. The polysemy of these fragments is clearly observed as an apparently unrelated assemblage of worms, arteries and foetuses is drawn together to create the memory of a man from his son's perspective, as a well-connected and talented surgical hero.

4.2 Gifts and Inter-Personal Donation

In addition to the movement of the collection as a group, from father through son to institution, some of the individual preparations were circulated within social networks, acting as the physical representations of personal relationships. The value of an un-exchanged fragment related to factors

like the rarity of its condition or clarity of preparation, gifted fragments achieved a greater value by being imbued with the reputation of their donor and embedded in a complex social network (Alberti, 2011a). This value transcended their physical nature as, by becoming manifestations of real people, their treatment was a representation of the relationship. Gift exchange is a socially charged cultural phenomena involving a complex network of things, people, obligation and power, most famously outlined by Mauss (1966). These gifts contextualise the flow of objects within a social network (Appadurai, 1986) where the giver receives social benefits or '*regard*' (Offer, 2003). Anatomical preparations were involved in this type of exchange both as a way to strengthen personal and professional relationships and as a method of acquiring prestige through association with items on display in a museum (Alberti, 2011a, p. 84). The gifting of a preparation was enacted upon the understanding that the giver would be mentioned in the accompanying catalogue or label if the collection was to be displayed. Surgeons who had their name permanently associated with a specimen, through inclusion in the catalogue or labelling, could benefit from the positive reflections this had upon their character. As visibility and status were paramount to a successful medical career this was a worthwhile pursuit.

This network, where preparations are exchanged for prestige, resulted in the presence of many medical practitioners in the museum display. The names of donors and sellers were inseparable from the fragments, which came to express their reputations through the course of their exchange history, defined by Alberti as becoming '*biographical objects, but of the practitioner rather than the patient*' (2011a, p. 115). Gifted preparations carried with them the obligation to display and reference the giver, which could be costly to the receiver as destroying gifted preparations had serious implications upon the relationship, so their expensive maintenance was crucial (Reinarz, 2005). This social obligation was also exchanged if a fragment was re-gifted and some could accumulate several donors, accumulating more social value with every transmission. The catalogue entry for No.252, a false conception, lists three separate donors, detailing a chain of exchange travelling from Bristol to London before returning to Smith's collection.

> *"252. A mole or false conception… it was found amongst the afterbirths of a full time fetus by Mr. J. P. Noble AD 1791, given by him to Mr Thomas Brichanden/Richards and by that Gentleman to Mr. Shin{illeg.} in London AD 1794."*
>
> *BRO: 35893/36/y*

The documentation of these exchanges alludes to both a local and national exchange network, with preparations travelling between co-workers at the Infirmary, practitioners in the local area and important medical figures across the country. These different networks show how preparations can be exchange as part of a number of different relationships, from personal to professional.

Within Bristol this exchange system is seen in the inscription on No. RG12 from the BRIPSC. The fragment consists of a right femur, small in size despite complete epiphyseal fusion due to achondroplasia (Buikistra & Ubelaker, 1994), that exhibits the anterior bowing and marked ridge on the posterior shaft indicative of rickets (Ortner, 2005).

> *"Femur of a dwarf from Staple Hill near Mangotsfield given to R.S. by Mr Henry Jefferies surgeon July 1820. She was about 3 feet 6 inches high, had a child in 1813, a crotchet case. Died in 1815"*

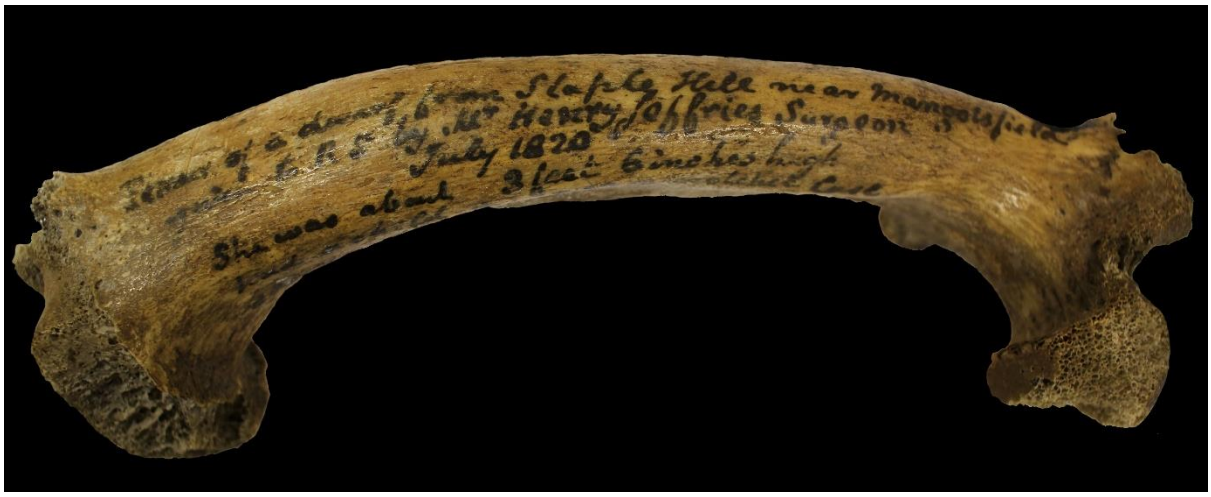


Figure 20: RG12, anterior view.

The fragment is objectified via exchange but Smith also includes depersonalised medical details, showing the value of the fragment as a medical curiosity and increasing the significance of Jefferies and the gift. Interestingly the clear pathology of rickets is omitted from the inscription and the description of 'dwarf' takes precedence.

Smith's catalogue (BRO: 35893/35/y) also details a more subtly complex exchange network, forming a complete cycle between himself, his former master Godfrey Lowe and his son Richard Lowe. This

cycle (Figure 21) illustrates how the same preparation can have several simultaneous meanings acquired from the different relationships it has been part of.

> *"47. The fetus at about the fifth month of utero gestation dissected to exhibit its anatomy. From Mr. Godfrey Lowes collection, made for him by RS when his apprentice in 1793 - and given back by Mr Richard Lowe."*
>
> (BRO: 35893/36/y)

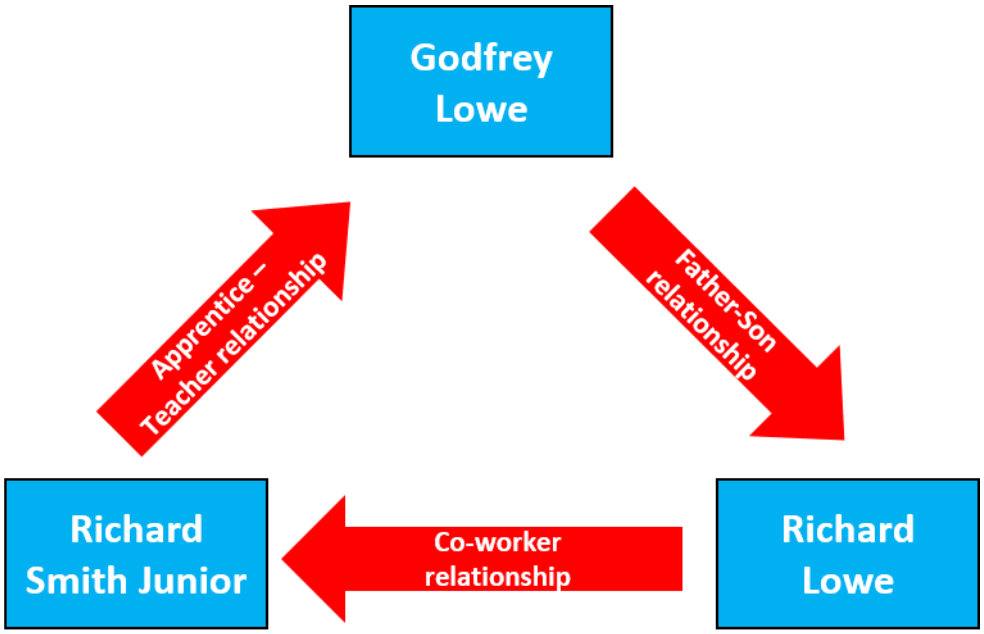


Figure 21: Depicting the gift- journey taken by No.47 and the different kinds of relationship that its exchange expressed.

The preparation travelled through this social network, using different relationship lines to perform different roles as an expression of professional, kin and friend relationships.

When his father and master, Richard Smith Senior, died in 1791 Smith became the apprentice of Godfrey Lowe (surgeon 1775-1806). The preparations created by Smith and given to Lowe formed part of their apprentice-master relationship, as a way for Smith to win the favour of his superior. The fact that Lowe took on the role previously played by Smith's father may have also played a part in this relationship, especially when considering that at that time Lowe was living in Smith's childhood home and father's old surgery in Queens Square, having moved there in 1785 (Munro Smith, 1917). It is interesting that parts of the collection travelled through the same house via completely different routes.

The same preparations also form part of a real father-son relationship as they were inherited by Richard Lowe (surgeon 1807 – 1850) upon his father's death in 1806. Lowe also inherited the Queens Square house and lived there until 1811 (Munro Smith, 1917).

Lowe and Smith were surgeons together at the Infirmary for 36 years (Smith: 1796-1843, Lowe: 1807-1850) and it was their joint donation of books in 1826 that formed the Medical and Surgical Library at the Infirmary (Munro Smith, 1917). The transfer of preparations from Lowe to Smith is a gesture of goodwill in their close relationship, travelling across less of a power gradient than in the other exchanges. Smith's choice of words, '*given back',* is a statement to the inalienability of these preparations: despite being in the collection of Godfrey Lowe, Smith never renounced his ownership of them.

Smith's direct exchange network is not limited to Bristol, with preparations being sent to him from Warminster. In addition to naming the donors on labels or catalogues Smith also publicly thanks these donors; the closing paragraph of a letter written by Smith to the *Lancet* in 1838 entitled 'Hydatids of the Heart' broadcasts their generosity to a wider audience:

> *"Both these preparations are in my museum, deposited at the Infirmary, and open to the inspection of all professional and scientific persons, who will favour it with their company. Of course it is to the liberality of my Wiltshire friends that I am indebted for these valuable presents, and I am happy in this opportunity of returning my thanks to them thus publicly."*
>
> (Smith, 1838b).

The donors, Mr. William P. Broderibb and Mr. Charles Bleeck, are named earlier in the article. Charles Bleeck was the son of the well-known and wealthy Alfred Bleeck, a close friend of Richard Smith's and fellow Phoenix Glee Society member, tasked with remembering Smith with an ironic two-minute silence and song at every birthday of the latter (Munro Smith, 1917). This familiarity implies that the gift fulfilled both personal and professional relationship functions.

The circulation of these fragments as objects embedded Smith in a far-reaching system of exchange, encompassing famous medical names across the country: the catalogue lists preparations sent to Smith's father (Bristol) by Edward Jenner, (Berkeley, Gloucestershire) who had a well-documented exchange based relationship with John Hunter (London) (Chaplin, 2009). The comparative material, No.52 a guinea worm from the coast of Africa, implies a global network but as the names of the donors are omitted the exact nature of their route into Smith's collection is unclear.

4.3 DONATION TO THE INFIRMARY

In order to extend his own social presence beyond his biological death Smith donated the museum to the infirmary, a phase in the post-mortem journeys of the fragments that saw the entire collection become objects tasked with embodying Smith's presence posthumously.

Smith inherited his collection from his father but, not having any children of his own, he had to find another way to posthumously preserve his museum. As a public manifestation of his extended self, Smith and his museum were inseparable, granting him the ability to construct his own post-mortem presence. People who are aware of impending death seek to solidify their identities by accentuating the characteristics that they want to be remembered for, by collecting objects the dying can construct the way that their identity will be maintained after their death (Unruh, 1983). The threat of fragmentation or degradation usually compels collectors to enlist a trusted, interested family member to take over their collections after their deaths (Pearce, 1993). Smith did not father any children and Henry Alford, a pupil at the Infirmary from 1822-1828, writes that Smith lived a reportedly separate life from his wide, a member of the Evangelical Church party (Alford, 1890). Smith's brother, Henry Smith, was an attorney and had three children, none of whom were in the medical profession (Munro Smith, 1917). In addition to casting uncertainty onto the future of the museum, Smith's lack of children can be interpreted as fuelling his passion for collecting. Studies of collecting behaviours in men and women have attributed the male propensity for thematically orientated, externally-referenced and standardised collections to the desire for legacy that is fulfilled in women through the process of childbearing (Baekeland, 2006).

The transformation of a collection into an institutionalised museum both ensures its own survival (establishing a route to immortality for the collector) and legitimises the efforts of the collector by recognising the collections importance (Belk, et al., 1988). In 1827 Smith does this by donating his collection to the Bristol Infirmary. By initiating this process during his own lifetime Smith ensures the survival of his museum but by retaining control over it he is able to decide how the museum, and his own identity, will be preserved.

This conflicting desire for immortality through having his collection embedded into an institution and fear of becoming disassociated from his museum is expressed through Smith's letter to the treasury of the Infirmary in November 1826 where he stated his intention. In the letter he expresses his wish to remain the guardian and owner of the museum, but for it to be housed within the Infirmary. The wish for the construction of a specific room for their display also suggests a desire for the collection to be presented as special and important.

> *"These considerations, combined with a general wish to benefit the charity to the extent of my abilities, have determined me to place at the Infirmary my Museums and Medical Books, if the Gentlemen of the Committee with appoint a suitable apartment for their reception.*
>
> *I do not give the preparations and books, but deposit them only, because I consider that as long as I have the honour to be one of your officers, such an arrangement will be quite as beneficial to all who may be connected with the establishment, and more congenial to my own feelings"'*
>
> (Smith, 1826)

Smith had intended to donate his collection to the Infirmary for at least twenty years before taking action, he stated so in a letter to the brother of F.C. Bowles upon his death in 1807 (Biographical Memoirs 5: 35893/36/e_i). The fate of Bowles' museum is a compelling example of what Smith was trying to avoid, whose personal fears of fragmentation and being forgotten are extended to his friend, lecturing partner and father's pupil (Cross, 1927). In the letter Smith begs Charles Bowles to refrain from selling his brother's preparations:

> *"I cannot keep saying that I shall be extremely mortified to see things which have cost him so much labor and pains, sold for a trifle and perhaps scattered abroad in sales to everybody."*
>
> (BRO: 35893/36/e_i)

Smith's abhorrence to the idea is so compelling that he even proposes that Bowles' collection be used to start the museum at the Infirmary, an honour that he had intended for his own collection:

> *"Although my dear Sir I full intended to have been myself the founder of a Museum at that charity, yet it is an honour which I have in earnest desired to transfer to your brother and my regard for him endorses me to {illeg.}, that there will be no obstacle to a donation which will reflect credit upon his whole collection and perpetuates his own name as long as the infirmary is in existence."*
>
> (BRO:35893/36/e_i)

The request was denied and the collection was sold in parts, but the letters clearly show that the power an institutionalised museum had to grant recognition and immortality was fundamental motivation for Smith. That Smith was willing to surrender his own opportunity for immortality to help Bowles is a powerful statement of their relationship, although whether he actually intended to do this will remain uncertain. Bowles was a pupil of Richard Smith Senior in 1784 (Cross, 1927) and lodged at Mrs. Richard Smith's house at 17 College Street in 1790 (Munro Smith, 1917), the two also presented a course of lectures together in 1797 and 1798 (Munro Smith, 1917).

In order to emphasise his skill as a preparation creator and strengthen his ownership of the individual fragment Smith details the preparation process for several of the fragments in his catalogue (BRO: 35893/36/y):

> *"No. 2: The external ear - to exhibit the vascularity of the skin. It was first dried and it was immersed in spirits of turpentine."*
>
> (BRO: 35893/36/y)

Investing labour into an object is a way of establishing control over it (Belk, 1988), by emphasising this Smith ensures that the fragments will continue to represent him despite being physically separated from him.

Through his museum within the Infirmary Smith constructed his posthumous identity to centre around particular characteristics: surgical skill, generosity and a form of unconventional intelligence. The expertise required to create anatomical preparations ensures that Smith's surgical prowess is repeatedly broadcast from every one of his preparations, this is the most obvious identity constructed in this space. Through this large public donation Smith also cements his position as a generous and charitable character features that generally indicated both high class and correct masculinity in polite, public social circles (Stafford, 2008; Carter, 2014). The refined, scientific surgeon combined with the more bizarre fragments within the museum, including murder relics and pets of deceased co-workers

constructs Windsor's (1994) 'quirky yet clever' identity. By placing his collection within the Infirmary, Smith secures his carefully constructed presence within the public sphere.

Museums were generally established with a large initial donation, which subsequently attracted smaller donations: William Hunter's museum was supplemented with donations from pupils and colleagues, whereas the Royal College of Surgeons in Dublin used requests in journals to publicise their desire for material (Alberti, 2011a). The Infirmary's Museum was constantly donated to after Smith's initial deposition, described as 'a valuable and daily-increasing Museum.' (Smith, et al., 1834).

Smith refers to these fragments as objects to establish ownership over them and ensure that his legacy is inseparable from the collection. This is especially prevalent in the descriptions of his own preparations where he details the complexity and finesse of his own work as a preparation creator. By conceptualising the fragments as man-made artefacts and emphasising his role as the skilled craftsman, Smith not only increases their perceived value but also strengthens his connection with them, ensuring they continue to promote his skill and reputation in his absence.

This perception of the fragments as objects allows Smith to display his eminent social network, promote the memory of his father and construct his own posthumous social presence. The journeys of inheritance, exchange and donation all affect the status of the remains by ascribing value to them as objects within a social network. By presenting them as objects and establishing ownership over them Smith incorporates each fragment into his projection of self, creating an image of himself that profits from the prestige of his many connections.

The next section will examine the ambiguous status given to the fragments where their origins as human remains are referenced but their personhood is never fully restored. Whereas the object-fragments become fully incorporated into the identities of their owners, the next section presents fragments that still retain aspects of the identities of their living bodies. This conflicting ownership is necessary for their value as medical fragments to be realised and Smith selectively restores different aspects of their identity, this variation is reflective of the different routes these fragments took between body and shelf.

5 THE PATIENT

The museum was created by Smith as primarily a medical archive, therefore the focus on patient case histories and physical descriptions is unsurprising. He takes advantage of this ambiguity to simultaneously present the fragments as people with case histories and objects under his control. The medical utility of anatomical preparations cannot be understated: they provided an invaluable teaching resource in the pre-photographic era to compliment written descriptions, subjective drawings and quickly-degrading dissections. Through creating this resource Smith emphasises his identity as a skilled surgeon and preparation creator, as well as ensuring he is remembered as a valuable creator and teacher of medical knowledge. By presenting the fragments under a scientific gaze as patients and humans Smith asserts his medical legitimacy by emphasising the contemporary ideals of clinical detachment, systematic examination and practical anatomy (French & Wear, 1991). This construction of the identity-less patient also serves to eliminate sympathy towards the fragments, a crucial factor in concealing and justifying the controversial routes they were sourced through.

During Smith's lifetime the creation of the 'patient' was a developing feature of medical philosophy, differing from the Person-Who-Is-Sick through their status as a silent, scientific subject (Jewson, 1976; Fissell, 1991). Smith's museum, as a public face of medicine, was a prime location for the construction and dissemination of this concept. The imposed identity categories, name, age and sex, strip the patient of any agency in creating their own identity and their passivity removed any power over their own bodies. The concept of the patient stripped the sick-person of any power over their own treatment, a development that enabled the establishment of a medical monopoly by regular practitioners as the 'drug-taking-self-helper' was the main threat to orthodox medicine (Neve, 1987). Smith uses the pathological fragments to construct the concept of the patient in order to establish the medical dominance of his orthodox community and to highlight the talents of his co-workers.

Smith plays on the position of the patient between a person and object (Figure 22Figure). At the person end of the scale the patient is given back their voice in order to emphasise their ignorance, then names are given to patients to highlight the success of the operation. Smith presents a more objectified view of the patient to use their remains as trophies of his co-workers by providing only their surgical history and to establish his ownership over his own preparations and strengthen their representational power as anatomical preparations. Finally, the complete lack of history for some fragments may have been an attempt by Smith to conceal the illegitimate channels he utilised to supply his museum, placed at the object end of the scale due to the bribes and payments involved in the procurement of bodies this way.

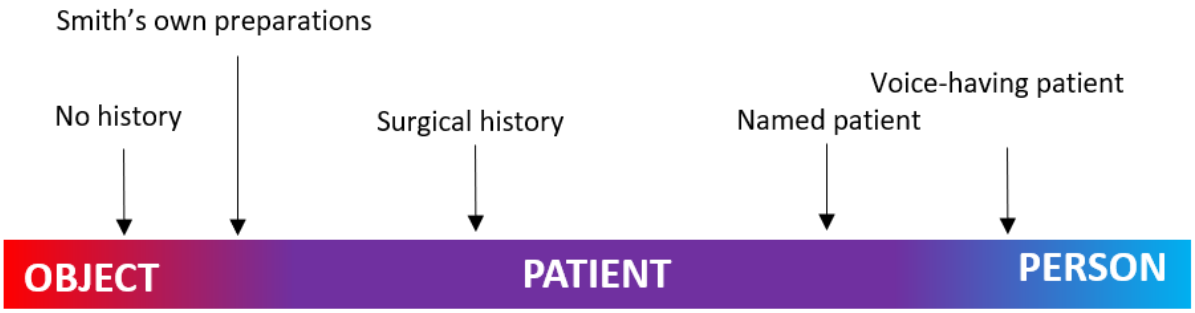


Figure 22: Scale showing how Smith used the varying status of the patient between person and object in different ways.

5.1 ILLEGITIMATE SUPPLY ROUTES

The BRIPSC collection is completely pathological but comparison with Smith's own catalogue reveals that the museum consisted of a mix of healthy and diseased fragments. Alberti (2011a) writes that these two types of fragment had distinct supply routes, with the healthy parts being taken from body snatching or the 1832 Anatomy Act and diseased specimens being taken from autopsies.

Until the creation of the Anatomy Act in 1832 the legal supply of anatomical subjects was severely limited. In 1540 the Company of Barber Surgeons was granted the bodies of four executed criminals per year (Ward, 2015), and the Murder Act of 1752 surrendered all the bodies of executed criminals to the anatomists. In the Appendices of the 1828 Report from the Select Committee on Anatomy there is a letter from Mr. Estlin, Bristol surgeon and father of the 'notable' Bristol medical resurrectionist Edward Richmond Estlin who is reported to have exhumed at least 30 subjects in his short 24 year life (Munro Smith, 1917, p. 213) arguing the deficiency of anatomical subjects. The two anatomy schools, Dr's Wallis and Riley's and Mr. Clark's, both have 16 pupils but each have fewer than three bodies per season. Estlin calculated that each school needs 16 bodies for teaching and 8-10 for the students. He also stresses that dissection experience is essential throughout a surgeon's career, he states that after settling in Bristol he was obliged to, along with other practitioners, take bodies from graveyards "*at much personal risk and the hazard of reputation.*" (p.131.) The deficiencies of the legal supply of cadavers combined with an increasing pressure on surgical skill forced medical practitioners to source their dissection material from elsewhere. This deficiency necessitated other methods of obtaining bodies for dissection: the exhumation of bodies after burial, the removal of bodies or body parts before burial and the *'surreptitious dissection*' (Munro Smith, 1917, p. 203) of deceased patients within the hospitals. This section will discuss the pre and post burial interference separately as they involved different sets of people, skills and dangers.

5.2 Removed from the Dead House

In addition to the fragment's whose histories are publicised in the catalogues, the pointedly ahistorical nature of a large proportion of the collection reflects the more subversive routes that supplied the medical museum. For most museums, specimens taken directly from wards or the dead house constituted most of the pathological material (Alberti, 2011a). Human tissue removed from a living patient during surgery could make its way into the museum without much opposition, however, the public's objection to the dissection of the dead resulted in the development of several clandestine channels where human bodies were secretly removed from graveyards and dead houses to become anatomical subjects and museum fragments.

Surgeons who worked within a hospital had the distinct advantage of being able to access bodies before they were buried. Following a death within the Infirmary the body would be placed into the dead-house to await burial and, as the dead were not actively tended to or guarded, this provided a space of opportunity for the anatomists to access the body. As an already liminal space in the process of dying the dead house provided a restricted and confidential place for anatomical enquiry to take place without consequence. In the original Infirmary building the dead-house was situated in the cellar underneath the Committee Room at the west end of the building (Figure 23Figure) and was reportedly a miserable place:

> *"this dark and miserable cellar… was lighted by a small, half-hidden window; and to use R.Smith's words, "a dead hole it was in every sense of the word"'"*
>
> (Munro Smith, 1917, p. 63).

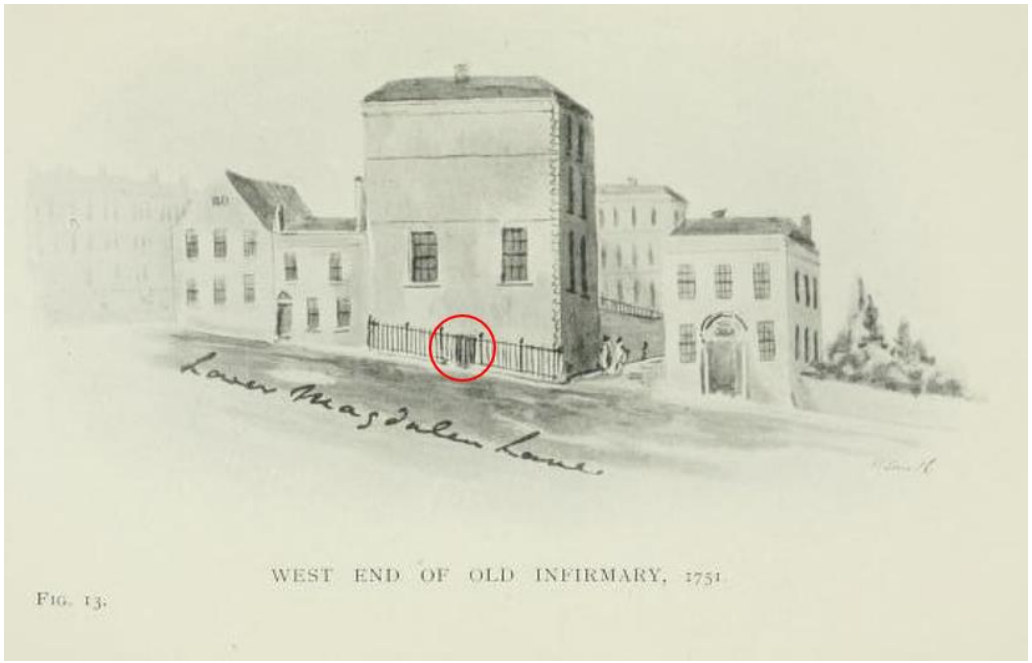


Figure 23: 'West end of old infirmary' drawn in 1751, from Munro-Smith (1917)

The bodies of those who died within the hospital were subjected to secretive post-mortems and often had parts or the whole of their bodies discreetly removed from their coffins as they waited for burial. This was seemingly well-known among the medical community: during Dr. Budd's speech at the opening of the new museum in 1860 he made the satirical comment that the title of Museum Curator should be given to the Assistant Physician and that the Assistant Surgeon be called the "*General Superintendent of the Dead House*" (Munro Smith, 1917, p. 328).The body was prepared for burial as usual and, as funerals were usually at 5oclock, the surgeons would sneak into the dead house whilst the mourners were having dinner. They would then break into the coffin, substitute the body for items of a similar weight and reseal the coffin (Munro Smith, 1917, p. 209). Smith asserts that this was such a frequently practiced endeavour that they continued completely undetected for two years. Alford (1890) also attended a lecture course presented by Dr. Wallis and claims that for one of the years the school was supplied solely and sufficiently by bodies that had been stolen from their coffins in the Infirmary dead house. As early as 1746 lectures were being given in the Bristol Surgeons' Hall using corpses taken from the Infirmary's dead-house (Munro Smith, 1917, p. 366). The medical consensus on the necessity of practical dissection meant that internal (within the Infirmary) punishments for stealing bodies were considerably lenient: Munro-Smith (1917) writes that the punishment inflicted on a group of students caught opening a coffin and replacing the corpse with sand in 1769 was not recorded, only that they were given a week to think about what they had done after seeming unrepentant upon confrontation.

In some cases discretion was apparently not a concern of the surgeons. At St. Peter's Hospital Richard Smith Senior and Thomas Rigge broke down the door of the dead-house in order to access the body of a person who had died there after the matron had refused to give them her key (Munro Smith, 1917, p. 120).

Smith describes how he, along with another Infirmary pupil John Danvers (~1790), had removed the head of a man from the Infirmary dead house with the intention of giving it to F.C. Bowles for a lecture on the brain. Danvers was carrying the concealed head and accidentally dropped it whilst turning a corner. It was night-time, and the head had rolled down a hill, leaving Smith and Danvers unable to find it and unwilling to light a torch as it would attract unwanted attention. They initially abandoned the head and went to Danver's house to drink, but later they realised that if the head was discovered and an enquiry made they might be caught. Smith, apparently facetiously, highlights the deviance of their actions:

"It then, however occurred to us that enquiry would be made at the Infirmary, and thus 'the murder would out.'"

(Biographical Memoirs Volume 6: BRO: 35893/36/f)

They then returned to the scene and decided to systematically pace up and down the area as if in conversation to alleviate suspicion. After an hour Danvers accidentally kicked the head and it was discovered. The dark humour derived from this shocking mix of macabre and ridiculous seems to be a central part of Smith's character, who was fond of telling obscene stories about his work (Alford, 1890).

In addition to removing bodies from the dead house, there were also secretive post mortems performed on the bodies of those who had died in the Infirmary, conducted within the dead-house (Munro Smith, 1917). Smith details the practice of taking museum specimens from anatomical subjects in No.37. The legitimacy of this subject is omitted but its location within the Infirmary suggests that it was a deceased patient.

No. 37: Specimen of hydatids of various size, they were all inclosed in in one large sac, or hydatids attached to the mesentery close to the intestine called colon in a subject opened by Mr. Richard Smith ***Junior*** *(added afterwards) when an apprentice at the Infirmary AD 1794 from the same subject as No 38. 40.41. The liver and {illeg.} part of the intestine were loaded in spirits with them.*

(BRO: 35893/36/y)

Alford (1890) states that during his time at the Infirmary almost every person who died there was subjected to this. This was not an accepted practice at the time and often a cause for complaint. Munro-Smith (1917) writes that at St Peter's Hospital in 1770, after complaints were received about the surgeons conducting post mortem dissections on patients, a rule was created forbidding any examination without permission of the Governor or Deputy Governor. The rule was quickly revoked after the physicians and surgeons refused to work, an expression of both the importance of these dissections and the internal power of the medical men. Even over 30 years later similar complaints were still being made: in 1806 the treasurer of the Infirmary received a letter complaining about both the post-mortem dissection of deceased patients within the infirmary and the exhumation of a corpse from the Infirmary burial ground, the corpse was taken to Smith's coach house in Park Row (Munro Smith, 1917). The Infirmary dead-house was originally a poor place to work but in 1866 a new location was created, proving the new acceptability of post-mortem investigation as it was situated near the Museum and had an adjoining post-mortem room (Munro Smith, 1917).

By presenting the fragment in a purely medical context the depersonalising process of the patient both removes any form of sympathy that might damage Smith's character and removes the possibility that their wrong doing might be discovered. Body parts such as spines (No.101) cannot be removed from a living patient, and the absence of a description of the triumphant surgery for No. 77 implies that this was the result of a post-mortem in the dead house, rather than a successful surgery.

> *No. 77: A cancerous eye.*
>
> *No. 101: A specimen of the disease called spina bifida.*
>
> (BRO: 35893/36/y)

The use of the term 'specimen' is a clever way of removing the personhood from the fragment by defining it as an occurrence of a disease rather than the modified remains of a real person. Presenting these as ahistorical, alienated fragments, derived from a 'human' rather than a 'person', neutralises any possible sympathy and directs the viewer to examine the physical presence of the fragment rather than considering how it got there.

5.3 Body Snatching

Alberti (2011a) states that body snatching was a process in the post mortem lives of healthy specimens, however evidence from Bristol contests that exhumation from the Infirmary burial ground also supplied pathological fragments to the museum.

At the end of the eighteenth century the legal supply of bodies was far outstripped by the demands of the medical community (Ross & Urquhart Ross, 1979). Body-snatching was a necessary means of procuring bodies but was a dangerous activity, public abhorrence to the practice meant that protective measures were established at many graveyards. This ranged from expensive paid guards, mortsafes, mausoleums and watchtowers to community-run watches (Knott, 1985).

The personal danger involved in body snatching led to the emergence of a new profession, that of the resurrectionist, who sold exhumed corpses to the medical community. As legal ownership of a corpse was not possible before the Anatomy Act of 1832, body snatching was not a criminal offence and was considered a misdemeanour, and not a felony, and therefore was only punishable by financial penalties or imprisonment (Ross & Urquhart Ross, 1979). A harsher sentence could be applied, and the culprits charged with a felony, if other grave goods were also removed as items such as clothing did constitute legal property (Knott, 1985). The first person convicted for body snatching for dissection was in 1788 (*R. v. Lynn)*, and the sentence (a small fine) was given in response to ideas about the indecency of dissection itself rather than about property rights and the corpse (McBain, 2014). This

focus on the objection towards dissection is expressed by the fact that the exhumation of corpses for dissection often received more severe penalties than exhumation for reburial in a different location (Jones & Quigley, 2016). In 1795 a bill was proposed in the House of Commons that made exhumation for anatomical inquiry a felony. In response to this F.C. Bowles produced a pamphlet arguing that body snatching was in the public interest and was a necessary evil and the bill subsequently failed (Munro Smith, 1917). The public objection to dissection, combined with the medical consensus that practical experience was fundamental to good practice, made for a frustrating environment for the medical community. In the Diary of a Resurrectionist 1811-1812 the situation is neatly summarised, that the same individual could face legal ramifications for both lacking in surgical skill and trying to obtain it (Bailey, 1896).

The display of snatched remains is also a bold statement of the power that the medical community had over the law. It was recognised that anatomical study was necessary for the advancement of medicine and public health and the inadequacy of the 1752 Murder Act as the sole legal source of cadavers was also recognised. Public opposition towards dissection meant that the government did not want to incite civil unrest by appearing to support the anatomists so didn't create additional legal supply routes, instead the anatomists received legal support by benefiting from lenient sentences and minimal repercussions if they were caught (Ross & Urquhart Ross, 1979). This perceived invincibility to legal consequences is repeatedly reflected in the boldness of the accounts of the practice reported in the Infirmary. Richard Smith himself is a source of many accounts of body snatching, as macabre as they are disturbingly humorous.

Henry Alford (1890) includes two accounts of resurrection attempts in his description of his time as a student at the Infirmary from 1822-1828. One attempt was made on the Infirmary's own burial ground, which failed after an argument between the two groups of pupils raised an alarm. The other involved the body of a pauper a few miles outside of Bristol. They successfully exhumed the body and were transporting it back to Bristol when they were stopped (having been given up by the man from whom they hired the cart) and were taken into custody. The only repercussions for their actions was a 'sharp reprimand' and having to cover the cost of transportation and reburial, this leniency symptomatic of the unofficial legal support that resurrectionists received. In addition to minimal legal repercussions, being caught in the act of body snatching did nothing to hinder the professional advancement of the culprits: in 1828 Dr. Wallis and Dr. Riley were caught attempting to remove bodies from Brislington churchyard, they paid a fine of six pounds and both afterwards became Physicians to the Infirmary (Munro Smith, 1917).

Munro-Smith (1917) writes that in June 1780 a member of infirmary staff (potentially Mr. Borlase an apothecary), with the surprising help of a patient, exhumed the body of a child with hydrocephalus from St. James' Churchyard. In the surviving remnants of Smith's museum is the skull of a child with hydrocephalus (RA6), neither the fragment nor the catalogue contains any information that could identify the fragment.

Figure 24: RA6, anterior view.

5.4 Taken from Wards

The vast majority of the study material was concerned with viewing the fragment through a scientific lens, as a depersonalised fragment of the human body. Medical waste forms a large proportion of this, acting as a direct channel into the museum. Medical waste accounted for 71 (35%) of the 201 fragments listed in Smith's catalogue: 21 consisted of tissue removed from a living patient during surgery (amputated limbs, tumours, hydatids, polypus) and 50 included either unsuccessful pregnancies and 'monstrous births' or tissue removed during childbirth (placenta, umbilical cord).

This high proportion of foetal material alludes to a system of human body exchange that is beyond the scope of this study. Infant bodies were highly valued by anatomists who utilised the high levels of infanticide, in addition to miscarriages, stillborns and other pregnancy complications (Dittmar, & Mitchell,, 2016). The sale of these infants exploited a technicality in the law, as there was not a requirement for the registration of stillborn infants until 1838 (ibid.) and a proper death certificate and burial registration was not required until 1926 (Hurren, 2012). Understanding the situation of infant body exchange in Bristol and the investigation of Smith's museum as a space of gender construction and conflict is deserving of its own study.

Medical dominance. Smith uses fragments from his own medical practice to not only create an archive of his achievements and emphasise his power as a medical practitioner but also to reinforce the dominance of his knowledge. This route from body to shelf is the most direct way into the museum and details the most basic relationship in the medicine, that of the doctor and patient. This route is the physical representation of the relationship between the medical man and their patient, a relationship that was re-negotiated through the 18th and 19th centuries. Until the late eighteenth century, medical diagnoses and advice were still centred around a narrative provided by the patient as humoral and history-based medicine still persisted. This not only created a relationship of equality between doctor and patient but also ensured that the latter could understand their sickness. The treatment process was more of a negotiation and, as medical concepts and treatments were part of public knowledge, patients could be useful sources of information through which the doctors could develop and compare treatment methods (Fissell, 1991). As the medical profession changed its conception of the human body and monopolised the production of medical knowledge the patient was slowly removed from the discussion (Jewson, 1976). The late Eighteenth Century saw the dismissal of the patient narrative, Latin diagnoses replacing the English or common language descriptions and the decline of the influence of Christianity on philosophy (French & Wear, 1991). These changes redefined the patient as a single educationally inferior individual in an institution of scientific experts. By emphasising this passive, ignorant status Smith establishes the superiority of his scientific approach. By rendering the patient voiceless Smith's own voice dominates within the museum, a didactic monologue that gains absolute authority by being unchallenged in its claims of truth. Sometimes the ambiguous patient is given a voice, only to then be dismissed as absurd to prove the intellectual superiority of science over the ignorant patient: This depiction of the intellectually

superior medical man and the embarrassingly ignorant patient is typified in Smith's entry for No.231 'Monstrous Birth':

> *'A monstrous human foetus at its full time… the woman was the wife of a butcher who fancied she had been frightened by the puppy of a bull bitch in her possession. This is a specimen of the malformation called hernia of the brain, the bones being wanting in the back of the head and the cerebrum protruding not unlike ears. The case is sometimes called 'the maltshot head'…'*
>
> (BRO: 35893/36/y)

This description documents the coexistence of conflicting medical philosophies and the dismissal of the patient's perspective is apparent in the use of patronising terms like '*fancied*'. The voice of medical authority is clear, supported by the passive, ignorant depiction of the patient. The medical museum was part of the orthodox medical community's attempt to control the access to medical knowledge by restricting access to the museum itself (Bates, 2008), Smith's museum was limited to medical students and Infirmary subscribers (Munro Smith, 1917). This character of the ignorant Patient was used to reduce the competition from unorthodox medicine by removing their power to choose their own treatment (Neve, 1987). By restoring this personhood to the patient, the very concept of the patient is imposed and justified through the documentation of their ignorance.

Success stories: unnamed patients. Smith capitalizes on the concept of the patient to create medical trophies as the objectifying process allowed other identities to be ascribed onto a human body. The patient history is emphasised as it is the most valuable story, allowing the achievements of Smith and the Infirmary to be presented. The concept of the patient allows human tissue to become representative of the surgeon who removed it, whilst still retaining its status as a fragment of the human body. This allows Smith to fill his museum with successful surgeons, including his father, reflecting positively on the Infirmary and himself.

Some of these fragments carry the names of the surgeon who successfully operated upon them and, like with gift exchange, the tissue becomes part of their character as a testament to their skill. Fragments created through successful or challenging surgery take on a trophy-like nature and by limiting the humanizing details about the patient the surgeon's identity takes prominence. The depersonalised status of the 'patient' enables the fragment to become part of the history of the

surgeon. The museum acted as another platform for successful surgeries to be advertised, in addition to the common reports in newspapers and journals (Barry, 1987):

> *86: Disease of polypus removed from a boy 1812 by Mr. Richard Lowe.*
>
> *255: A portion of tibia from compound fracture. It was removed seventeen days after the accident, above is a splinter of the same bone, Goldyers case.*
>
> *26: An excrescence removed from the {illeg.} of a woman by the late Mr Godfrey Lowe AD 1800. Patient did well and was discharged the Infirmary in a fortnight.*
>
> (BRO: 35893/36/y)

The passive, unidentified patient is eclipsed by the active, named surgeon and the fragment becomes the souvenir of a successful operation rather than the body part of a living person. The value attached to this fragment is derived from its journey through the hospital: the history of the person it came from begins at the point of accident or operation and ends with their discharge. The fragment then becomes part of the portfolio of the practitioner who removed it, by then incorporating it into his museum Smith benefits from the reflected prestige and publicly displays his social connections. Smith uses the 'patient' to present fragments of his father where the value of the fragment is derived from the situation of the operation:

> *'281. Aneurism of the femoral artery. This is the first case ever operated upon according to the/Mr Hunters plan in the Bristol Infirmary.*
>
> *The subject was a BLANK at the bottom of St Michaels Hill near King David.*
>
> *The tumour extended high up in the thigh the sac is opened on the inner or under side near the femur. The ligature was placed just under the profunda branches, as the {illeg.} of the arterial system were not then so well understood and it was deemed of importance to preserve them. This operation was well performed and there were no embarrassing circumstances. The subject died in a few days from constitutional effects without any haemorrhage or apparent change in the limb.*
>
> *The writer's father invited {illeg.} all the practitioners of note in the city to see him operate and the room was more full than on any former occasion. The writer laments that his fathers notes are lost and he was himself too young in the profession to be aware of its importance.'*
>
> (BRO: 35893/36/y)

The concept allows the operation to be discussed without the fragment becoming any less representative of his father by acknowledging the person it came from. Here the patient is depersonalised to such an extent that Smith refers to them as a 'subject', a term usually used to refer to the dead body during anatomical enquiry. Smith capitalizes on the medical role of a person as a patient to still present the operation as a success despite the death of the person.
In addition to his surgical achievements Smith uses tragic cases of his father's absence to construct his image as a surgical hero:

> *278: A foetus in the uterus at nearly its full time. The subject concealed her pregnancy and perished in the streets, the body was taken to St Peter's Hospital where the child was felt moving for several hours but the writers Father, at that time one of the surgeons to that institution was not sent for until too long a time had elapsed that there was no prospect of saving the foetus by the caesarean section, which might and ought otherwise to have been performed.*
>
> (BRO: 35893/36/y)

Again, Smith plays on the object-like nature of the patient, 'the subject…the body', to transform a potentially pathetic story into a positive aggrandizement of his father's surgical talents. The passivity of the 'patient' allows Smith to replace the identity of the patient with that of the surgeon, allowing his museum to display the successes of the infirmary staff without interference.

Success stories: named patients.

Fragments that have part of their personhood restored through the reassociation of name and tissue in the museum have several similarities: they all exhibit the alienated diseased tissue from a surviving patient. Smith's expansive collection of calculi were all displayed with the patient names attached (Francis, 1836). The human tissue is elevated from an object by the clinical identity of name, age and case notes but this voiceless, personality-less status reflects the medical perspective of a patient rather than the social agency of a person. The inclusion of a name could be to invoke sympathy for the patient, an approach that would reflect positively on the surgeon who successfully treated them

The naming of patients is rare in Smith's catalogue (BRO: 35893/35/y), which was written between 1813-1843 and includes the names of the surgeon, museum donor, collector or preparation creators 36 times, whilst only naming 5 patients. Investing labour into an object strengthens a person's ownership of it, it is imbued with their identity (Belk, 1988). The creation of a medically objectified

patient allows the same process to occur with the human tissue of a surviving person and their surgeon. Associating the successful fragment with the name of the surviving patient also validates it as evidence of the surgical prowess of the operator. Both the medical museum fragment and the healthy person communicate this success, and this may serve to reach a wide audience across different social spheres. In Bristol, particularly gruesome surgeries were reported in local newspapers and surgeons could gain prestige through the successful treatment of these patients (Fissell, 1989).

This human-tissue-turned-trophy interpretation can be seen in two surviving fragments from the BRI collection, RC34 (Figure 24) and RC35 (Figure 25): two portions of the lower leg exhibiting chronic bone infections where a successful amputation was performed, the patient discharged and the affected fragment deposited in the museum. Both fragments are inscribed with the patient's name and age, date of the operation and the name of the surgeon.

The inscriptions on the bone read:

> *RC34: 'N 354. Sarah White est 11. December 21. 1793. Mr Allard.'*
>
> *RC35: 'No. 351. Mary Herbert, age 12. November 1790. Mr R. Smith's patient'*

The surviving catalogues include Richard Smith's original entries about the cases, asserting both the urgency of the procedure and the favourable outcome:

> *RC34: Sarah White, aged 11, admitted to the infirmary on Dec. 21st. 1793 and operated on a few days afterwards by Mr. R. T. Allard. She had suffered from a bad leg for 2 ½ years and showed other marks of scrophulous diathesis. She did well.*
>
> *RC35: Mary Herbert, aged 12, Nov. 6th 1790. The motion of the knee and ankle joint being lost, large exfoliations appearing on the Tibia, and that bone being very extensively diseased, the limb was amputated directly after admission. The stump healed well, after a small exfoliation has come away.*

The attempt to discover what happened to White and Herbert after the operation was unsuccessful, it appears that both girls survived long past the operation as the absence of their names from parish death registers could be due to them changing their names upon becoming married or moving away from Bristol.

The decision to attach their identities to the fragment may be a reflection of their youth and gender: the dominance of the surgeon is less threatened by the already passive identity of a female child and the surviving child would act as an public testament to the skill of their operator.

Figure 25: RC34, Sarah White.

Figure 26:: RC35, Mary Herbert.

The description for No. RE5 is another illuminating glimpse into the social roles of the museum:

> *Tibia and fibula… showing a hard node, syphilitic in origin… The patient, Andrew Johnston, aged 27, was under Mr Lowe in May 1840, and was **said** to be suffering from Fungus Haematodes.*

Here the diagnosis of 'Fungus Haematodes', a term used to describe highly vascular and fungating limb tumours (Hajdu, 2007), appears to have been utilised to conceal the syphilitic nature of the disease. This is potentially a sympathetic concern for the reputation of the patient, or otherwise a reflection of the relationship between syphilis and the medically-disparaged quack medical museums of the 19th century (Bates, 2006; Bates, 2008).

Figure 27 : RE5, Andrew Johnston 'Fungus Haematodes'

Smith included the names of two surviving patients in his catalogue:

> *111. A schirrous breast removed by the writer's father at the Bristol Infirmary March 1775. The patients name was Eliz Derran aged 51. She discharged quite well.*
>
> *115: A fatty tumour removed by Mr Richard Lowe 24 Oct 1812. From the shoulder of Mary Webb, a servant, Sir Lormell? Esq?, the {illeg.} subject was in her 39th year, it weighed 2lb 3oz, the wound was still healed and the patient went from the Infirmary well. It began the size of a pea fourteen years before the operation.*
>
> (BRO: 35893/36/y)

In both entries the surgeon and operations take precedence and the concept of the passive patient is promoted, the term '*subject*' especially is more suggestive of the dead anatomical subject than the

living person. Four different people are claiming ownership of fragment 115: next to her employer; her surgeon and Smith himself, Mary Webb is defined as a low status servant, subject and patient.

Interestingly, there is evidence to suggest that Smith also used his museum to negatively affect the reputation of certain practitioners:

> *192. Exhibits the state of the bones in distorted spine. Jane Isaac, at 8 Years, May 1770, Dr. Rigge's patient. Died two years after she first began to complain of pain in her back, she had other malady and walked about the house to the last minute of her life.*
>
> (BRO: 35893/36/y)

Rigge was a reportedly difficult physician who initiated feuds between the physicians and surgeons and engaged a fierce newspaper-correspondence based argument with Richard Smith Senior over the election for the Resident Apothecary in 1778 (Munro Smith, 1917, p. 97). This argument eventually culminated in the pair meeting for a duel behind Brandon Hill, a last-minute intervention prevented the fight, but the ill-feeling was unresolved. The unsuccessful treatment, long duration of complaint and personalisation of the patient may have been an attempt at slander by Smith.

The descriptions of these fragments depict a passive patient, merely medical property of their surgeon. Their identities, if present at all, are composed of imposed, formal categories like age, sex and names. The creation of the ignorant patient enabled the medical community to establish power over the body and well-being, the concept also allowed the humanity of the fragment to be referenced without human tissue to become representative of the surgeon. The removal of identity allowed the subversive practices of the anatomists to continue without objection. The museum was a space in which the concept of the patient was constructed. This concept was an important part of the establishment of a medical monopoly by the regular medical community by removing the sick-persons power over their own medical treatment. Smith uses this concept of the patient to display human tissue as medical trophies without diminishing the presence of the surgeon with the identity of the person it came from.

6 THE SOCIAL PERSON

Alongside the fragmented remains of patients were relics that intended to tell the story of the life of an individual, not as a medical case, but as a sentient and emotional person. Smith's interest in murder is repeatedly commented on and accounts of his involvement in the law and curation of the displays emphasise his dramatic inclination in the matter. Richard Smith was an avid theatre lover and had been working on a series of articles for the Bristol Mirror about the history of theatre in Bristol, he was prevented from completing them by his old age and ill health but managed to compile five volumes worth of notes, letters and cuttings on the subject (BRO: 45883/7-11). The volumes cover most of the first half of the nineteenth century, until his death in 1845, and demonstrate that his passion for theatre was substantial. This theatrical inclination, and enthusiasm for Bristol history, appears to have translated into his work as a collector and museum creator through his use of the space as a stage for stories of murder and punishment. These stories focus on the individual as a socially acting person rather than exchangeable object or medical reference and are highly dramatized. These fragments tell tragic stories with villains, victims, heinous crimes, the emotional climax of the hanging and prologues of anatomisation. They all involve the infliction of the 1752 Murder Act as their main theme and the character of Richard Smith is ever present as both narrator and morally ambiguous figure of medical authority.

Despite the monological nature of the stories told in the museum, the real events involved multiple truths and interpretations. This makes the Murder Act fragments intrinsically polysemic as, depending on the viewer, they represent the different relationships between individuals, medicine and the law. The fragments exist in the museum as socially embedded people as the Murder Act ascribed far more value onto their personal histories than the scientific value of their bodies. Material objects allow a person's social life to exist after their death (Hallam & Hockey, 2001), museum display here allows Smith to not only construct personal memory but history. The three central characters in these displays, Maria Davis, Charlotte Bobbett and John Horwood, are present as full, articulated skeletons. This utilises the ability of bones to represent the whole person, resulting from their contained-ness and wholeness (Krmpotich, et al., 2010), which adds authority to Smith's reconstruction of their identities. The inclusion of their skeletons within the museum is a statement of medicine's power over the construction of their memory and represents the communion of medicine and the law, and the power this afforded (especially considering the subversive activities the medical community was concurrently embroiled in).

Through its role as a depository for murder relics the museum tells individual stories that explain the wider context of crime, punishment and medicine in a compelling and local manner.

6.1 The 1752 Murder Act

The 1752 act For Better Preventing the Horrid Crime of Murder (25 Geo 2 c 37) forbade the burial of a criminal corpse in consecrated ground without first being subjected to dissection or gibbetting. Despite the obvious benefits to medicine of an increased supply of bodies, the reason for the initiation of the 1752 Murder Act was purely to increase the punishment and deterrent factor for the crime of murder. The act sought to aggravate the punishment for murder and set it apart as the most heinous crime at a time when capital punishment was inflicted for a multitude of crimes. From the late 17th to early 19th centuries there was a dramatic increase in the number of crimes that could afford capital punishment, known as the 'Bloody Code' (King & Ward, 2015). In the Tudor and Stuart eras only 50 different crimes had capital-crime status, however from 1660-1820 this quadrupled to more than 200 (Cooper, 1974).

Hangings were a public event, but the post-mortem section of the Murder Act was also a public spectacle, with crowds being admitted to view the body. The witnessing crowd typically changed over the three days or so that the body was on display. The first day saw the largest crowd where those present at the execution viewed the corpse, on the second day the crowd was a smaller, ticketed audience of educated people who viewed the dissection and the third day was reserved for medical men and their pupils (Hurren, 2016). The public events that formed the enactment of the Murder Act allowed the public to participate in their own justice system and affirm their sense of belonging within their community, whilst simultaneously indulging their interest in gore, the body and death (Hurren, 2018).

During this period of public executions, the museum served to immortalise the impactful yet temporary horror of the gallows, creating a compelling and ordered display of state power that contrasted with the rowdy and disordered hanging (Bennett, 1995). Public hangings drew immense crowds and often had a festival-like nature, central to a day of drunkenness and disorderly behaviour, a feature criticised by contemporary social commentators (Gatrell, 1994; Linebaugh, 1975). This crowd could function against the deterrent-intention of the executions, seeking to undermine authority especially when the punishment was considered too harsh for the crime. Riots and conflicts at the gallows stemmed both from the removal of the opportunity to interact with the healing corpse and from the labouring-class based social connections between the criminal and the crowd (Gittings, 1984). The disordered nature, and the associated risks, of public justice led to the privatisation of punishment through the creation of prisons (Foucault, 1977). The museum is an extension of this that directly

addresses the justice-witnessing crowd as it is transformed from an unruly mob at the scaffold into an ordered audience within the museum (Bennett, 1995).

The museum display of criminal bodies is a physical statement of medical power and expresses the friction between the medical community and the public over this. The purpose of the act was to define dissection as a punishment and was not a consequence of the demand for bodies for anatomists (the medical benefits were considered a fortunate consequence (Linebaugh, 1975)) and can be held culpable for creating the association between anatomy and the punishment of the poor (Eichmann, 2012). Through the Murder Act, dissection became a way to eternally punish executed criminals and the surgeons found a new role as inflictors of the law through '*wielding the powerful punitive scalpel*' (Eichmann, 2012, p. 10). However, the punitive role of the surgeons was not limited to the post-mortem desecration of the body and denial of burial. The ineffectiveness of the short-drop method of hanging, causing death by asphyxiation rather than spine-breaking, combined with uncertainty in medical death determination, especially in cold weather and the mistakes or deliberate subterfuge of the executioner resulted in criminals being delivered to the surgeons whilst not completely dead (Hurren, 2016). This gave the surgeons another level of juridical power as they were now responsible for completing the execution. Hurren (2016) states that it was this uncertainty of death that most damaged the reputation of the medical community, repeated reports of people surviving the gallows and the public interest in stories of this type created an uncertainty in public opinion as to whether true death occurred on the gallows or within the dissection halls. Their additional role as an executioner and the limitation to deviant bodies stigmatized the anatomist, aligning his reputation with that of the hangman (Eichmann, 2012). King (2017) states that there was a variety of reactions to this role within the surgical community itself, and the demand for their participation differed geographically between urban and rural areas. Some surgeons were only required to perform these dissections once or twice over their careers and others merely inflicted a minimal number of incisions before returning the body to their mourners, others approached it with more enthusiasm (King, 2017). Richard Smith's enthusiasm for this particular surgical responsibility was well known, with speculation that he 'delighted' in the operations (Saxtgar, 1922).

The Murder Act officially prescribed *either* dissection *or* gibbetting. The medical community received the majority of executes as gibbeting was much less common than dissection, being inflicted in only 10-20% of sentences (Tarlow, 2016). This was due to its enduringly gruesome nature, the costs involved and the lack of control it created: crowds were more difficult to manage in public spaces and as the gibbet remained for many years it was impossible to control public interactions with it (King, 2017). Gibbeting was therefore reserved for crimes that threatened the social order, state revenue or social taboos: considered 'social evil' (Hurren, 2016). Additionally the anatomist's demands for healthy,

young bodies and those of women meant that between the Murder Act of 1752 and the Anatomy Act of 1832 not a single woman was gibbetted (Tarlow, 2014) and, in murder cases where two men were convicted it was common for the older man to receive the punishment of gibbetting, while the younger received that of dissection (Tarlow & Dyndor, 2015).

The punitive power of post-mortem punishment extends far beyond the obvious psychological trauma caused by awareness of impending pain, violence and humiliation. The Murder Act shortened the time (to two days) between conviction and execution, denying both the deceased the opportunity to come to terms with their imminent death and the mourners the funerary rites that allowed proper grieving (Eichmann, 2012). The denial of a proper burial was an intimidating punishment as a mixture of Christian and quasi-pagan beliefs meant that a 'good' death was still of high importance to the eighteenth-century people, despite high mortality rates and regular interaction with death (Linebaugh, 1975). Due to Christian beliefs about the day of resurrection, and its requirement for an intact body, dissection was a powerful punishment as it essentially ensured complete and eternal death. Dissection also functioned to annihilate the identity of the deceased (King, 2017), during dissection identity and personal history are stripped away as the body becomes a proxy for the human form. Often the body was so destroyed that there wasn't enough to bury (Tarlow & Dyndor, 2015) and a marked grave within a churchyard functioned to readmit a person into the social body after their death (Eichmann, 2012). The denial of proper death rites aimed to cause definite death by ensuring both biological and social death by denying the mourners the proper avenues of memory making (Hallam & Hockey, 2001). Social death refers to the relational or narrative change that occurs in reaction to the real change of biological death and can occur much later than biological death (Tomasini, 2017). Removing this opportunity for reintegration and remembrance limits the ability for the deceased to endure posthumously in the social sphere, ensuring a more definite death.

This personal abhorrence to *either* dissection *or* gibbeting makes the ability of the medical museum to administer both even more significant. Dissection subjects the corpse to violation and annihilation and destroys the identity of the person along with it, gibbetting ensures that the person is remembered in the social sphere as a criminal and misanthropist. The medical museum allows the deceased to be subjected to the humiliation and violence of dissection before being publicly displayed as a criminal and preserved this way indefinitely. Material objects associated with the deceased are key to the endurance of social life beyond biological death (Hallam & Hockey, 2001), by controlling the material remains of the deceased through display of their body and associated objects the museum could define both the personal memory of the deceased and the accepted history of the events. This is a feature that Smith exploits effectively in his display of John Horwood.

King's (2017) interpretation of museum display as a form of gibbetting is a succinct explanation of the use of museum display to exacerbate the already aggravated capital punishment of dissection.

Whereas dissection usually sought to eliminate the social identity of the subject, the practice of retaining and displaying certain body parts allows the surgeon to modify the enduring identity of the subject and determine how they will be remembered by society. As an anatomist they strip the personal identity away from the body of the deceased, but as a museum creator they construct and then reattach a new identity, that of the deceased's criminal self, to the physical body. Then, through public display, it is this criminal identity that gets reintegrated into the social world and remembered. Display introduces a person to a new and potentially large group of visitors and as this new criminal identity can be longer-lasting and wider-reaching than the identity contained within the living memory of their surviving friends and family it can completely replace how the individual is perceived within the public discourse.

The similarities between gibbetting and museum display are striking, gibbets were designed to maximise horror and impact: the chains allowed the decomposing body to move and creak with the wind, the location was usually chosen to associate it with the crime and the post from which it was hung was frequently 30ft or higher, in a clear and public space, to ensure visibility (Tarlow & Dyndor, 2015). These three features of horror, criminality and visibility are also characteristic of museum display, where gruesome human remains are publicly displayed alongside descriptions and artefacts relating to their criminal history. Smith's museum construction of John Horwood, described in this excerpt from the Belfast Daily Mercury in 1856, reflects these aims of traditional gibbetting (Table 6).

> *'The most striking feature, however, indicating the bias of the founder's mind, is the memorabilia of criminals who have expiated their crimes upon the scaffold, and contributed to science by yielding their bodies to the scalpel. Articulated skeletons of these seem to grin the more horribly from the juxtaposition of the fatal cap and rope. Whilst to complete the scene relics of the victim lie near in the shape of fractured vertebra or battered and trephined skull.'*
>
> *(The Belfast Daily Mercury, 1856)*

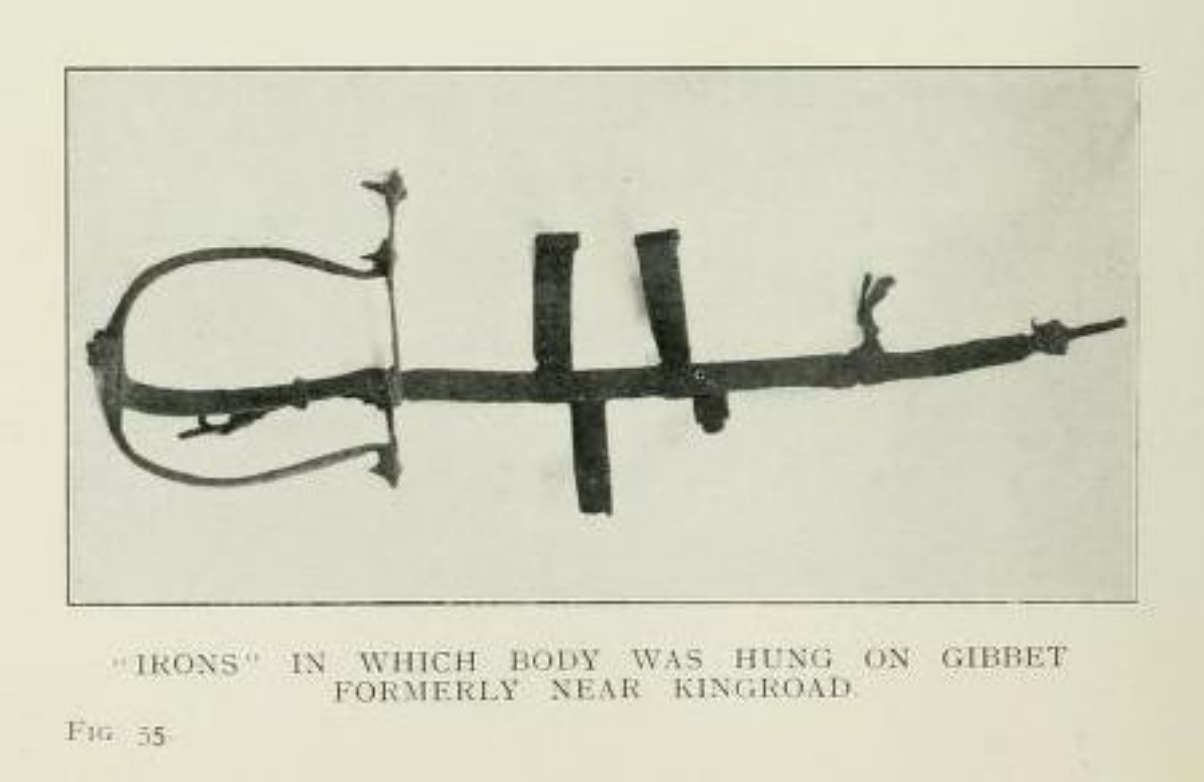
The *'bias of the founder's mind'* states again Smith's known obsession with murder.

Table 6: Comparison of the display of John Horwood and traditional features of gibbetting.

Feature.	**Traditional gibbetting.**	**John Horwood Museum Display.**
Horror.	Decomposing human remains.	Exposed human remains.
Association with crime.	Near crime location, in a criminal gibbet.	Alongside description of crime, associated with a book of the trail, displayed with noose around the neck.
Visibility.	High up in a public space.	In a glass case in a public space accessible to students, medical practitioners and subscribers.

Within society the judge had the ultimate power to lawfully end a life, and then, if considered appropriate, to further aggravate this punishment by inflicting *either* dissection *or* gibbetting. However, this seemingly unrivalled power over death and dying was surmounted by that of the surgeon. The surgeon could not only influence this decision through medical testimony, physically enact the actual execution due to the inadequacy of the hanging or even inflict the final punishment of dissection but he could also exacerbate the severity of the prescribed punishment by having the sole power of deciding whether to add gibbetting through museum display to the already numerous list of punishments.

This 'localised form of gibbetting' is best examined within Smith's museum by looking at the stories behind two displays in the museum: the skeletons of Maria Davis and Charlotte Bobbett and the numerous pieces relating to John Horwood. The also museum displayed a third Murder Act story, the gibbet of Matthew Mahony. The gibbet of Matthew Mahony, convicted of the murder of Sir Dinley Goodere alongside Captain Goodere and Charles White, shows how museum display can also aggravate the punishment of gibbetting itself by extending its already significant longevity. The case also raises several questions about the influence of class and status on post-mortem punishment, as the high-status mastermind of the murder Captain Goodere was returned to his family for burial (Foote, 1785) whilst the order following, low-status (Penrose, 1741) Mahony was gibbetted. However, as this study is focusing on the status of human remains within the museum this fragment will not be discussed in detail.



"IRONS" IN WHICH BODY WAS HUNG ON GIBBET FORMERLY NEAR KINGROAD.

FIG. 55.

Figure 28: The gibbetting irons of Matthew Mahony, from Munro Smith (1917).

6.1.1 The Skeletons of Maria Davis and Charlotte Bobbett

A detailed description of the case, court proceedings, executions and post-mortem punishment was written by Richard Smith in 1810: 'Manuscript Notes on Infirmary Skeletons' (35893/36/U).

In 1802 Maria Davis and Charlotte Bobbett were convicted of the wilful murder of Davis' infant son, Richard Davis. They had abandoned the baby on Brandon Hill with the intention that he would be discovered and taken into care but unfortunately the baby died during the night. Davis' husband had recently died, leaving her poor and alone to care for their child. Davis, who could no longer cope with the child's care, decided to abandon him to be taken in by another family or institution.

The child's body was discovered by two 14 year old boys, William Hoover and James Biggs, who had gone to Brandon Hill to shoot sparrows. The baby was squeezed into a very small basket, about five yards from the path with a cloth covering his face and when they uncovered the child, his tongue was black and hanging out of its mouth. Under the advice of a gardener they took the child to St Peter's Hospital, where the door keeper, Mr. Bracey, took the basket to the Council House. Mr. Bracey's description of the child when it was delivered to him is a distressing picture:

> *"The child's legs were crumpled up, its little fists were clenched and the tears were frozen in drops on its cheeks like beads, his tongue black and hanging from the mouth."*
>
> (BRO: 35893/36/u)

Davis and Bobbett claimed that they intended the child to be discovered but the prosecution claimed that the lack of sufficiently warm clothing was proof to the contrary. Hoover stated that the child was wearing a coat, but it was too short to cover its legs.

The two women were hung at the gallows on St Michaels Hill on the 2nd April 1802, after which they were taken, followed by a large crowd, to the infirmary to complete their sentence. The women were understandably distraught during the process (Bury and Norwich Post , 1802), but in Smith's description of the case he makes clear that Davis and Bobbett were completely unaware of the post-mortem aspect of their punishment; asking where their coffins were and begging the attending Ordinary, Mr Walcam, to personally ensure their correct burial.

When Davis and Bobbett's bodies were taken to the Infirmary it was directly after the hanging, in the same cart they arrived at the gallows in and was accompanied by a large crowd:

> *"After suspension the usual time the bodies were conveyed in the cart followed by an immense rabble to the Infirmary where the surgeons were in waiting to receive them"*
>
> (BRO: 35893/36/U)

This large crowd was common during executions but starkly contrasts with the secretive transportation of John Horwood's body in the next section. In her own confession Davis confirmed her lack of friends, she was widowed and appears to have either lacked or been estranged from her family as she had begged for lodging from one of the witnesses, Susannah Avard. This lack of mourners may have contributed to the lack of objection to the hanging but despite Bobbett having both close kin and public sympathy, there is no report of any attempts to rescue the bodies from dissection. The aggravated horror of infanticide over other murders is most likely the cause of this: considered a 'social evil' (Hurren, 2016) and more eagerly punished by the public. Davis especially, as the mother, was a target of this:

> *"You Maria Davis have added to the foulness of this crime, because you bore the name of mother! It was to you the unhappy infant was to look for shelter and protection, but you stilled the feelings of nature, you were insensible to the compunctions of your consciousness and your ear was deaf to the cries of a helpless child to which you have given birth."*
>
> The Recorder addressing Davis. (BRO: 35893/36/U)

This eagerness to see the women punished would have added to their significance as museum fragments, this aura of public justice and well-deserved punishment may also have reflected upon the Horwood display in the museum, tempering the controversy surrounding it.

The Murder Act sees the process of dissection completely destroy a person's body and identity, before the gibbiting of museum display reattaches a new identity to the remains. In Smith's account (BRO: 35803/36/u) the changing status of Davis and Bobbett's bodies can be closely tracked along their post-mortem journey: '*Davis and Bobbett*' left Newgate and were transported to the gallows but '*the bodies*' were cut down and transported to the Infirmary where, in this medical context, they became '*the subjects*'. This dehumanisation is symptomatic of the process of dissection where the person's identity is destroyed alongside their remains. They were placed in the committee room on the right-hand side of the great entrance and, in front of the crowd, Mr Godfrey Lowe exposed their chests and made the crucial incision, a temporary reinstatement of their personhood by acknowledging their criminal status. In addition to Mr Lowe, four other surgeons were present: J.P. Noble, Morgan Yeaton, J. Allard and Richard Smith. Lowe had been instructed by the corporation to give a public lecture on the bodies and requested Smith to undertake it, who did so '*cheerfully*'. The day after the execution Davis' brain was dissected in front of a large audience in the operating room and the day after that the thorax and abdomen of Bobbett met the same fate. During these demonstrations the bodies are understood as representations of the general human form, much like the anatomical preparations in the museum and this 'human' status replaces their personal individuality. The two bodies then disappear from the public sphere to undergo further destruction as they merge into a single entity in Smith's description: '*the muscles'* were dissected at leisure by the students. This dissection marks the change from archetypal human to the first object phase as they are conceptualised a collection of raw materials and '*the bones'* are sent to London for maceration and articulation. The financial exchange and labour invested into the fragments cements the change to object status. The articulated skeletons are kept in the committee room before the final stage of museum display re-integrates them into the public sphere as people, communicating their criminal history. Figure 28 depicts their changing status as they transition through the different stages of the Murder Act, Figure 29 transposes this onto a map of

Bristol. The breakdown of their identities into the object phase allows Smith to completely reconstruct their identity when they are integrated back into the public sphere as people through display. The display plaque (Figure 30) depicts how museum display re-associated the remains with their names, now defined only by their criminal histories and destined to only be remembered in this context.

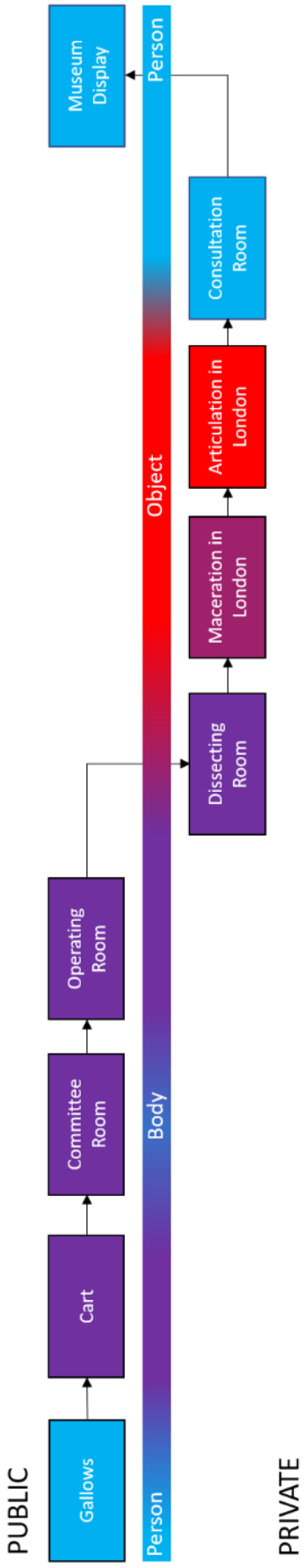


Figure 28: Diagram showing the changing status of Davis and Bobbett through the different stages of the Murder Act, where blue = person, purple = human body, burgundy = material and red = object.

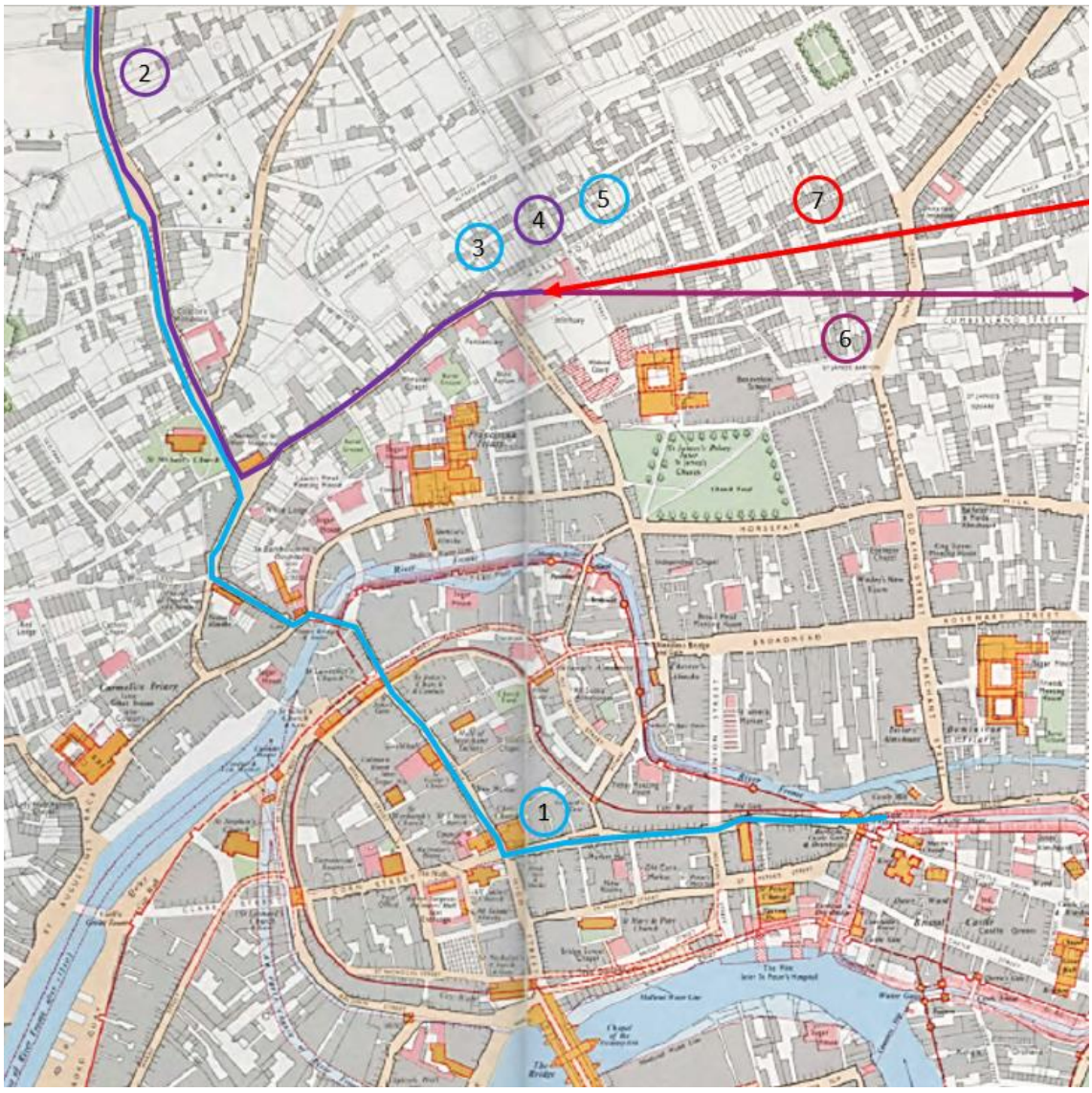


Figure 29: The changing status displayed across Bristol, Bristol in c.1820 (c) Historic Towns Trust 2011

Table 7: Table showing the points of status change for Figure 29

No.	Status.
1.	'Davis and Bobbett' leave Newgate.
2.	'The bodies' are brought publicly to the Infirmary in a cart.
3.	The crucial incision, customary among murderers, references their personhood again.
4.	Through public dissection they become representative of the general human form.
5.	Student dissection annihilates the bodies into raw materials, individuality is lost.
6.	Bones sent to London for maceration and articulation.
7.	They return as finished objects. Kept in the consultation room until placed in the Infirmary museum.

Davis and Bobbett were convicted of infanticide, one of the 'social evils' usually punished by gibbetting (Hurren, 2016), but most likely due to their sex and age (20 and 23 (The Morning Post and Gazetteer, 1802)) they were sent to the dissection table. Smith may have decided to locally gibbet them to adequately punish them for their crime and the deterrent-purpose of gibbetting may have been interpreted very literally as it was reported that their skeletons were used to intimidate John Horwood after Eliza Balsum's death in 1821 (Munro Smith, 1917). Their story also highlights several other themes: the ineffectiveness of the Murder Act as a deterrent, the personal importance of a proper burial and whether death, dissection and display was an appropriate punishment for the potentially unintentional mistakes of a desperate mother and her friend. These fragments retained their personal histories as their well-known stories acted as a powerful reminder of the consequences of murder. The women were subjected to hanging, public exposure, public dissection, dismemberment and museum display. In this case we see how museum display can add another level of punishment to the sentencing of execution and dissection. Where dissection destroys the identity of the deceased, museum display uses the remains as a blank canvas onto which a new identity can be imposed. Through displaying the skeletons in a criminal context and alongside descriptions of the crimes the deceased is reintegrated into the social sphere as a solely criminal and macabre individual, all other aspects of their identity eradicated by the process. Their skeletons were kept in a case in the consultation room of the Infirmary before being deposited in the Infirmary museum (Munro Smith, 1917). The skeletons were kept on display in the University of Bristol Medical School, alongside a description of their crimes, for over two centuries (Fissell, 1991; Houghton, 2013) until 2017 when they were incinerated.

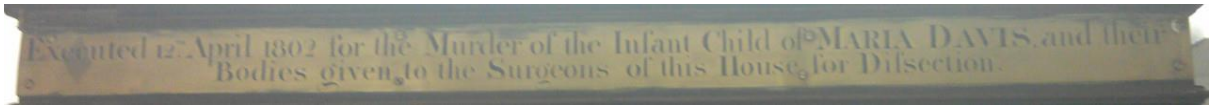


Figure 30: Plaque displayed alongside the skeletons in the University of Bristol Medical School in 2011 (Houghton, 2013)

The social lives of these two women extended far beyond their biological deaths, but it was the identity that Smith constructed for them that endured. The process of dissection and subsequent gibbeting enabled their identities to be destroyed and their new criminal-self to be reconstructed and imposed upon their bones. They continued to have influence as executed criminals, most relevantly when they were used to intimidate John Horwood, whose story will now be discussed.

6.1.2 John Horwood

Museums are important in the shaping of history by society (Pearce, 1993), Smith uses his museum to present his own version of events as fact. The most famous and prevalent murder-related collection included fragments and objects associated with the case of John Horwood, reflecting Smith's central role in the events. The collection included the skull of Eliza Balsum, full skeleton of John Horwood, a book bound in the skin of John Horwood, a bust of his head and the rope and gown from his execution.

The events involving John Horwood and the murder of Eliza Balsum in 1821 were a defining part of Richard Smith Junior's life and career. The story is well documented both by Smith himself and by numerous newspapers and historians and draws together several interesting ideas and phenomena surrounding criminality and the corpse in 1821: The 1752 Murder Act, beliefs around the healing power of the criminal corpse, the journey of an individual from person to resource and the practices of anthropodermic bibliopegy and phrenology. The controversy surrounding the case stems from the doubt as to whether Balsum's death was caused by Horwood or by Smith himself and the eagerness with which Smith was reported to have been involved in the case, especially in supporting a guilty verdict. It is an illuminating case study in several ways, highlighting the central role of medicine in all stages of the court proceedings and also being a clear representation of the 1752 Murder Act, post-mortem punishment and the journey of a convicted murderer from person to series of objects.

This account of the events around the trial is taken from Smith's own description of the events (BRO: 35893/36/v_ii). John Horwood and Eliza Balsum had been courting and on January 26th 1821 after being rejected by Balsum, Horwood threw a stone at Balsum which struck her on the head. She arrived at the Infirmary five days later, her injuries seeming minor but she quickly deteriorated after beginning treatment. Horwood was brought into the Infirmary to be identified by Balsum and Smith used the skeletons of Davis and Bobbett to intimidate Horwood. Balsum died on February 21st 1821 after receiving treatment from Smith, who performed a trephination and discovered an abscess under the bones of her skull. It is contested as to whether Smith himself caused the Balsum's death (Eyre-Brook, 1969; Anon., 1869; Rendell, 2012) but he testified against Horwood who was convicted and then executed. Smith's obsession with the case was remarked upon by others: Eyre-Brook (1969) states that it was a commonly held opinion that Smith had a

> *"marked and unbecoming interest in this trial"*
>
> (Eyre-Brook, 1969)

and claims that in the margin of a brief someone had added the note:

> *"in confidence this gentleman will be much disappointed if the prisoner is acquitted."*
>
> (Eyre-Brook, 1969)

Horwood was convicted of Balsum's murder and was hanged on Friday 13th April 1821, the first to be hanged at the New Gaol. Horwood's friends and family tried to appeal against the post-mortem punishment aspect of his sentence by writing letters to Smith, all requests however were refused. That these applications were made to the surgeons, rather than to the courts, clearly indicates the power held by the surgeons in this situation. The execution crowd was so vast that warnings were put in place to stop people getting injured or pushed into the river during crushes (Munro Smith, 1917). Smith's account of the events involving Horwood is completely focused on Horwood's body and the journey it underwent from person on the gallows, to body in the operating room and finally to the fragments in the museum that allowed Smith to reconstruct his own version of Horwood as a person. This process of stripping down personhood not only provided a blank canvas for Smith to reconstruct upon but also by creating objects from Horwood, Smith legitimised his ownership of Horwood's body. The reconstruction of Horwood allowed Smith to write the history from his perspective and his ownership of such important artefacts of the case added authority to his version of the truth.

Horwood's very public death on the gallows marks the beginning of his post-mortem status journey, and the last time his self-authored identity is attached to his body. The nature of the Murder Act blurs this slightly as his awareness of his impending death may have already initiated the dying process and the highly public, sensationalised nature of criminal trials had already started the construction of his criminal heterobiography. The process of dying is not an instant, the healing ability of Horwood's corpse immediately after he was cut down supports this, remarked upon in the hangman's statement in the Bristol Mirror on the 14th April 1821:

> *"A number of foolish women with their children ascended to the top of the lodge, after the culprit was turned off, for the purpose of having their disorders cured by touching the dead hands."*
>
> (Cooper, 2004).

Apparently juxtaposed to their status as anti-social actors, the criminal corpse possessed positive powers including the healing of various skin diseases, mainly those that cause some form of swelling (Penfold-Mounce, 2010). The healing power of the criminal corpse was contemporaneously explained

by their healthy nature and suddenness of death, this caused the vital life force that remained in their body after death to be stronger and have the most potent healing powers (Stuart, 2000). The healing touch of the hanged man's hand was also seen as a final act of atonement: the illness could be passed to the criminal as he was entering the afterlife, healing the living as a last attempt for redemption (Davies & Matteoni, 2015).

After his biological death, Horwood is taken to a private room under the gallows where the process of depersonalisation is begun by stripping him of his personality-indexing clothes. Smith collects these and the rope with which he was hung as the first Horwood-objects. Horwood is then secretly collected by Smith as, in an attempt to save Horwood from the indignity of dissection, a large group of people had planned to rescue his body when it was being transported from the gaol. Smith himself went alone to collect the body and personally bribed the reluctant gaol staff to assist him in moving the body to his coach. Horwood's body was concealed in the coach and accompanied by Smith and one of the Sheriff's yeomen. The transformative process of the route from the gaol to the Infirmary (Figure 31) is reflected in both Smith's language and in the contrast between the high opposition to removing Horwood from the gaol to the lack of opposition, even enthusiasm for, the dissection of the body in the Infirmary. In Smith's description of the events Horwood is referred to as simply 'the body' from when Smith sees his dead body in the Gaol, signifying the start of the transformation from person to anatomical subject. Horwood is then placed into the dead house where more legitimate Horwood-

objects are taken, in the form of a plaster cast of the entire head, one of the face and a drawing of the body.

The next stage returns Horwood to the public sphere as a fully depersonalised human body as his body is used as a human archetype to present public lectures on the body. The dissection of Horwood was attended by 80 people, more had applied but had been refused. Smith used the body to present a lecture on the general structure of the human body, applicable to a mixed audience. The demonstration of blood circulation on Horwood's body was accompanied by the same in reptiles, fish, birds and quadrupeds (Bristol Mirror, 1821). Through this comparative exploration Horwood's physical presence was reduced to a representation of the human form, this complete annihilation of self enabled Smith to completely reconstruct Horwood's identity within his museum. The following day he presented another lecture, again to a full audience, on the organs within Horwood's torso. The public use of Horwood's body then finished with two lectures on muscular function. During this stage

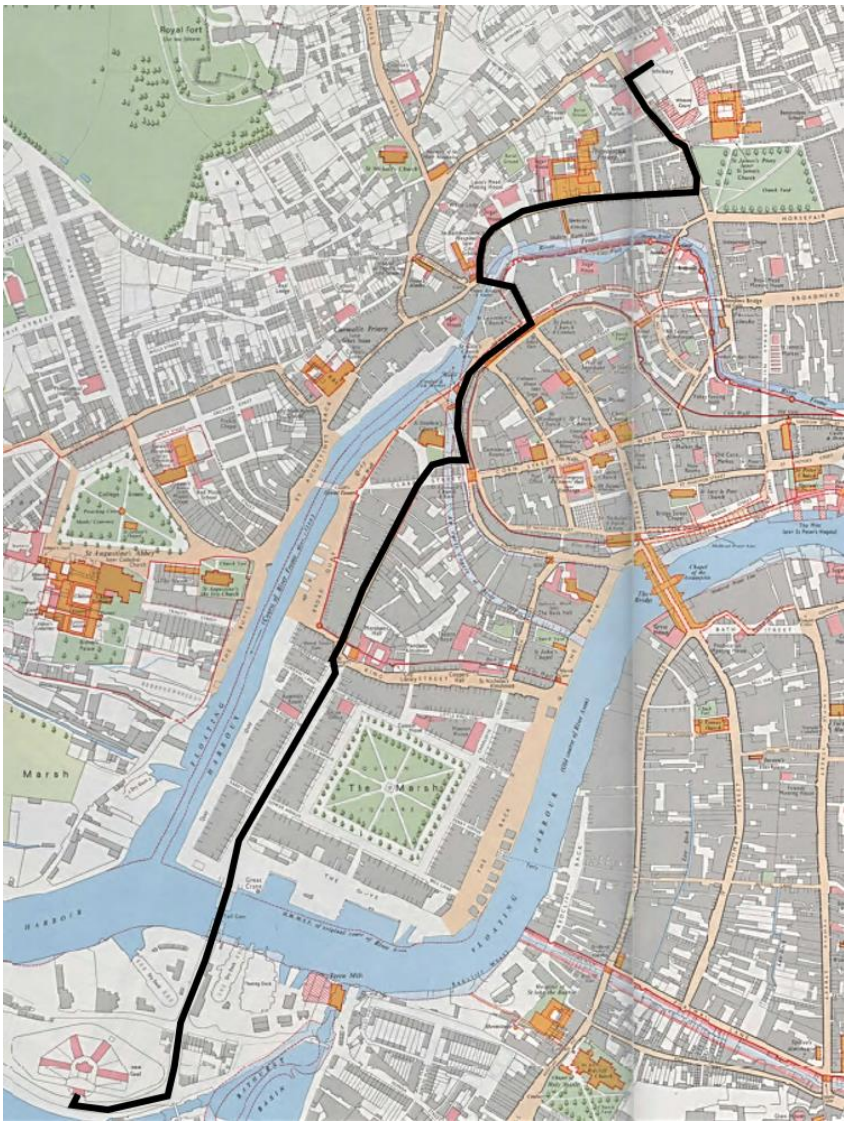


Figure 31: The route taken by Smith and Horwood's body from the Gaol to the Infirmary.

Horwood's already depersonalised status as 'the body' is further reduced to his basic parts in Smith's account: '*the muscles… the skeleton… the body'.*

The process was then returned to the private sphere in the dissection room as Horwood's body was given to the house students to continue the dissection, completing the destruction of the body as a representation of a living person. This annihilated body then provided the materials for the status journey to begin its object-creation phase. Horwood was split into two parts, the skeleton and the skin. The skeleton was macerated in the Infirmary, it is not recorded where the skeleton was articulated for display but this may indicate that it was Smith who did it, as with the Davis and Bobbet skeletons the location of articulation was detailed. In an adjoining tank Horwood's skin was tanned before being sent to Bedminster for dressing and then Essex to be turned into the book binding for the volume from which all this information was sourced. This use of the skin of a murderer as leather for book bindings, or anthropodermic bibliopegy, is not an isolated case. The skin of William Burke, convicted in Edinburgh in 1828 of murdering people in order to supply their bodies to the anatomist Robert Knox, and William Corder, the 'Red Barn Murderer' convicted of the murder of his finacee Marian Marten in Bury St Edmund in 1828, also faced the same post-mortem mutilation (Tarlow, 2016). Whilst Burke's skin was fashioned into a pocket book, Corder's was used in the same way as Horwood's: to bind a volume detailing his trial (Tarlow, 2016). Smith may have had several reasons to create this macabre artefact, besides merely legitimising his ownership of Horwood's remains. Doctors in the eighteenth and early nineteenth centuries crafted anthropodermic books predominantly as a way to indicate their own social status by situating themselves within the upper-class pastime of rare book collecting (Marvin, 2009). The craft also served as an indicator of their surgical skill, some deliberately associated themselves with the books to show their skill at dissection (Harrison, 2017), including John Hunter himself who had one of his works bound this way (Thompson, 1946). The application of this practice to the bodies of criminals materialised in the eighteenth century due to both the post-Murder Act increased availability of criminal corpses and the widely popular genre of gallows confessions (Connor, 2004). The binding of trial accounts within the skin of the criminal themselves also functions to support the validity of the conviction, offering a non-verbal admission of guilt reflective of other bodily countersigns such as the cross or thumbprint (Connor, 2004). This allowed Smith to use Horwood's own voice to support Smith's version of history. The economic exchange of Horwood's remains in the book creation finalise and legitimise the object transformation process. The skeleton was potentially articulated by Smith, as a highly skilled preparation-creator, and kept in his house alongside the other fragments until it was deposited inside the Infirmary as his museum.

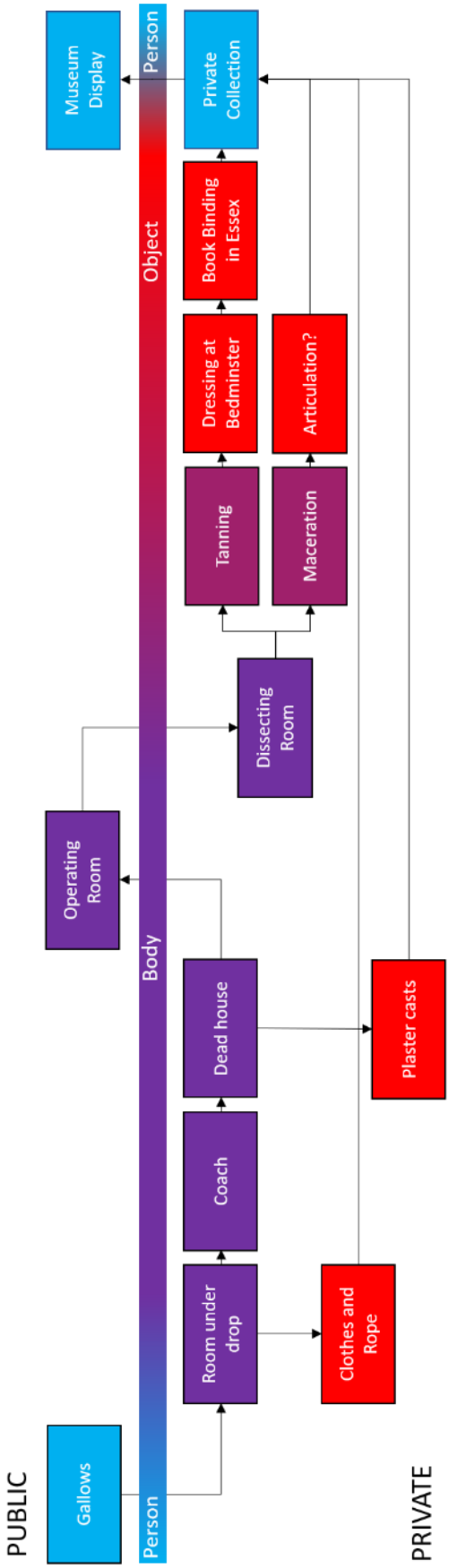


Figure 32: Diagram showing the changing status of Horwood through the stages of the Murder Act, where blue = person, purple = human body, burgundy = material and red = object.

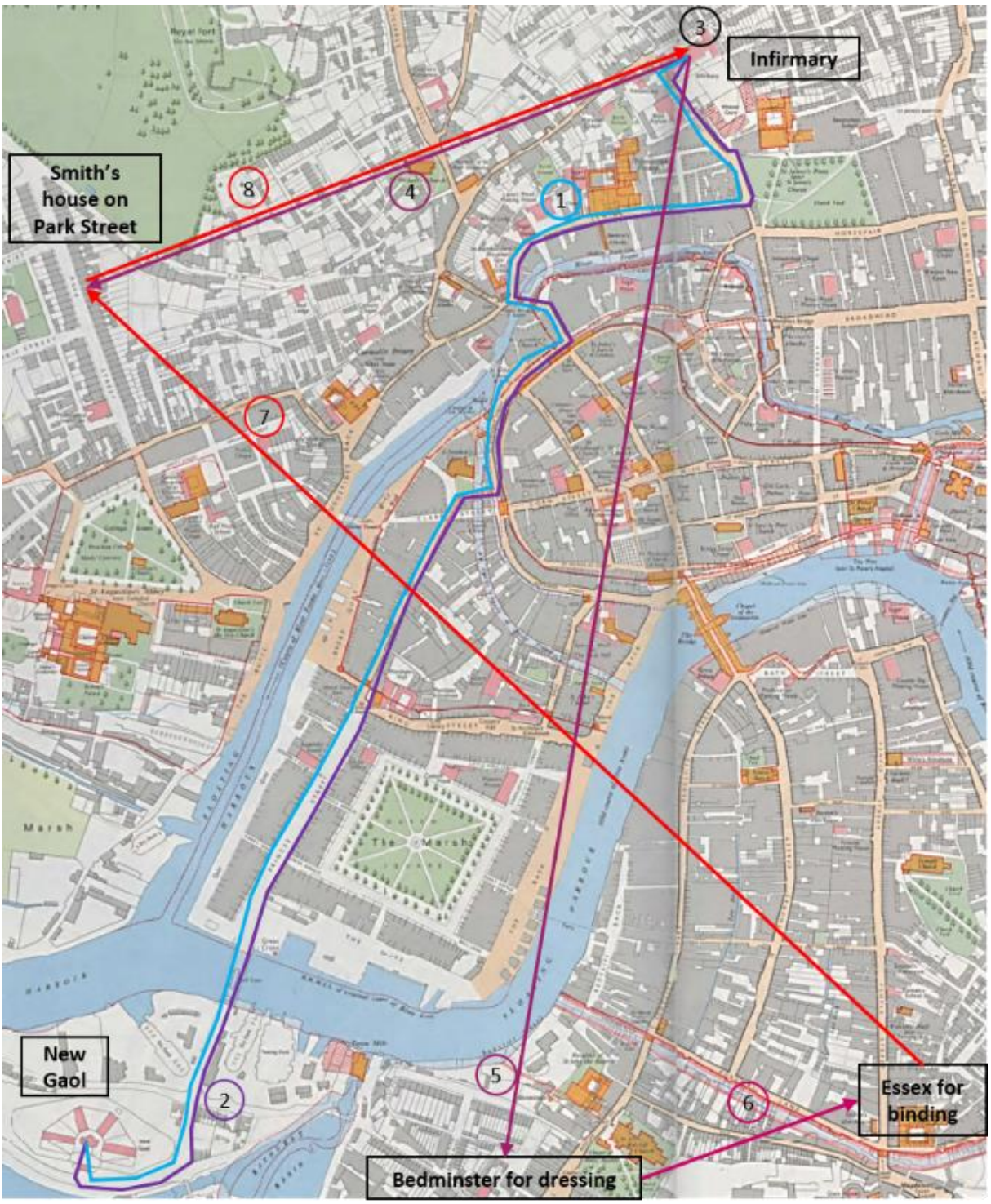


Figure 33: The changing status of Horwood displayed across Bristol, Bristol in c.1820 (c) Historic Towns Trust 2011

Table 8: Table describing the changes in status depicted in Figure 33

No.	Status change
1.	Route from freedom to incarceration and death after being identified by Balsam.
2.	Coach journey where Horwood becomes 'the body'.
3.	Multiple stages of dissection at different locations within the Infirmary break 'the body' down into parts and systems. Maceration and tanning turn remains into materials.
4.	The macerated bones go to Smith's house for articulation. Horwood's clothes, hanging rope, plaster casts and drawings also enter personal collection.
5.	Skin goes to Bedminster for tanning.
6.	Tanned skin sent to Essex to manufacture book binding.
7.	Finished book enters Smith's collection.
8.	Horwood fragments donated to Infirmary as part of Richard Smith's Museum.

These four collections of fragments (clothes and rope, plaster casts, book and skeleton) provided legitimate objects that Smith could use to construct Horwood's identity and the case history. The medical museum has been interpreted as presenting a multi-authored, dividual human body (Alberti, 2011a) and the creation of Horwood from these different elements manifests this on a personal level. Smith not only presented Horwood's personal history as that of his criminal self but also created a medicalised criminal history through the practice of phrenology. Munro-Smith (1917) includes that a phrenological wheel was created by Mrs. Mary Ann Schimmelpenninck and Horwood's skull was examined by Spurzheim himself. Neither Spurzheim nor the wheel's creator found the 'bump of murder' and deduced that Horwood's main mental features were combativeness, self-esteem and hope. Years later, in 1827, Richard Smith showed the skull to Spurzheim (apparently the skull was in Smith's house at this time) without stating to whom it had belonged, Spurzheim immediately proclaimed that the skull possessed all of the animal propensities and was fundamentally brutal. This confusion mainly highlights the unreliable nature of phrenological inquiry but also the centrality of the character of Horwood to the case. Phrenology is the study of the physical cranial manifestations of basic brain functions. Originally established by Dr. Franz Joseph Gall in the last years of the eighteenth century as a way of explaining human behaviour it was subsequently applied to studies of crime, mental health and morality (Schlag, 1997). It was a product of the enlightenment's desire to replace religious explanations with scientific information (Rafter, 2005). Phrenology was a popular science in the first half of the 19th Century and, before its demise into a quack science in the 1840s, it was supported by well-educated, respectable professionals including physicians and surgeons (Parssinen, 1974). The discipline however was founded on the incorrect assumption of the existence of

fundamental faculties, the physical manifestation of these in the cranial organs and the external expression of cranial organ size in cranial prominences. The inclusion of then-scientific proof of Horwood's deviance was a calculated move by Smith to further prove Horwood's criminal nature and paint Smith, the patient-treater, medical witness and ultimate punisher, as a pro-social actor in the events.

How Smith displayed Horwood is also a perfect manifestation of museum display as a form of gibbetting. Smith's display of Horwood exactly parallels the three gibbeting features of horror, criminality and visibility: the horror of a stripped skeleton and human leather bound book; the criminal association of the still-present hanging rope, description of the crime and detailed case notes in the book; and everything being displayed in glass cases in a museum ensured visibility. Horwood's story also highlights several other interactions of medicine and crime: the influence of surgeons in court, the practices of phrenology and anthropodermic bibliopegy and the healing power of the criminal corpse. Smith's descriptions of the case are also illuminating glimpses into the journey of a condemned criminal from person into a collection of materials. How Horwood was displayed in the museum is also a clear example of how museum display can be used to reconstruct Horwood's identity as his criminal self through a new dividual body.

Horwood's skeleton remained in the museum and was eventually kept in a cupboard in the University of Bristol, still wearing the hanging rope, until his burial in 2011 (Halliwell, 2012). In a hugely symbolic gesture, Horwood's body was finally buried on 13th April 2011 (BBC News , 2011), after his relatives discovered their connection through genealogical research. The ability for human remains to incite such a powerful response from distantly related strangers shows how powerfully they represent the identity of the deceased and the agency this affords them.

Smith's heavy involvement in the case means that this also serves as a way for him to construct his own identity and control any evidence that might challenge his version of the truth. Smith uses the personal histories of these museum fragments to explore his own interest in murder cases, utilising the facility of a collection for fantasy realisation (Pearce, 1993). The display is also a statement of the power of medicine in society. The position of the surgeon as the ultimate inflictor of the law and an influential provider of evidence is powerful enough already, but when combined with the presence of other potentially law-breaking fragments in the museum, Smith is depicted as an untouchably powerful member of society. Smith uses this localised form of gibbeting (King, 2017) in the legitimacy-bestowing museum environment (Ahren, 2013) to ensure that his truth persists as the dominant version of this history, reflecting favourably on himself.

The stages of the Murder Act enable the identity of a person to be completely broken down, Smith manipulates this process by creating objects from the broken-down body. Smith then uses these objects to re-construct the person from his perspective, to support his version of history. The Murder Act displays enable him to explore his fascination with murder and to promote this aspect of his personality as part of his post-humous identity. He created a legacy of himself as a character of immense power within society, the notoriety of the events only served to increase his own social relevance.

The Murder Act displays are the most famous aspect of Smith's museum and understanding how Smith constructed their histories is a crucial consideration when studying both the displays themselves and Smith as their creator. Smith's detailed accounts of the two cases are incredibly valuable sources of information about his understanding of the human body, as well as detailing the role of the surgeon and museum creator within the Murder Act.

7 CONCLUSION

Alberti (2011a, p. 100) states that the journey of human remains from the body into the museum was not only physical transition but also an ideological journey from person to thing where the route changes the status of the remains. Smith's museum exhibits a large amount of variation in this status, reflecting the variety of different journeys that meet there. The categorisation of an individual fragment also varies, depending on Smith's intentions: in order to assert his ownership, the entire collection is discussed as an assemblage of objects, whereas some of the individual fragments within it have some or all of their personhood returned to invoke sympathy or ignominy. In Modern Western philosophy the two concepts of persons and things exist in a polarised duality: the commoditised object against the individualised person (Kopytoff, 1986). The process of death can have a transformative effect on the human body allowing the person to pass into the sphere of the object (Kopytoff, 1986). Human remains exist in a constantly fluctuating status between person and object (Hallam, 2010) and by displaying human remains this study shows how Smith manipulated this ambiguity for personal and professional gain.

Studying how Smith understood the value of human remains not only illuminates the social, legal and physical supply network that once covered Bristol but also demonstrates the multifaceted uses of the museum as a way for Smith to construct, promote and immortalise his own identity and status. Smith interprets each fragment a particular way, emphasising a particular history, to maximise their value and capitalize on the social benefits of museum creation.

Fragments are presented as objects because of the objects capability to be owned and therefore inalienably associated with another person, becoming their post-mortem representation. Gifted fragments were presented as objects to fulfil the reciprocity obligation of gift exchange, and as representations of impressive social connections. Fragments inherited from Smith's father or donated to the Infirmary by Smith himself are presented as objects with indisputably defined owners to ensure and construct their posthumous legacy.

For the medical reference material Smith manipulates the area between person and object to his advantage. Fragments are stripped of their identity, replaces with that of the surgeon to become medical trophies. Others are given humanising details like age and gender, names, voices and recovery stories, this relatable humanity reflects favourably on the surgeon who saved them. The contrastingly ahistorical, more objectified fragments allow Smith to display fragments from controversial sources without invoking sympathy or objection. This depersonalised human approach is also employed in the display of healthy specimens to increase their scientific authority as an accurate representation of the

human body, by choosing to forget individual variation and the modification during preparation that might question the fragment's value as a proxy for all humanity. Smith also uses the construction of the scientifically ignorant patient to enforce the superiority of his understanding of health and healing, a powerful in a context of changing medical philosophy and competition. The objectification of human tissue is not exclusively achieved after death through preparation creation and display but can be instituted upon a living person through the creation of the medically objectified patient. This process of medical objectification is a feature of the changes in medical philosophy occurring during the 18th century where the socially realised, vocal 'sick man' was replaced by the passive, alienated and objectified patient (Jewson, 1976; Fissell, 1991).

The remarkable cases where fragments are presented as the remains of a socially recognised person utilise the fame and controversy of well-known events to increase the profile of Smith and his museum in public discourse. The Murder Act skeletons and fragments are used as props to tell the stories of their lives as individuals, despite having high-profile histories as an anatomical human archetype in public dissections or economic objects like the John Horwood Book. Even the apparent medical relevance displayed through their phrenological examinations centres around their personal, criminal histories. These criminal fragments were of high-value to Smith due to his central involvement in the cases and personal preoccupation with criminal cases, his control of them allowed him to define their history.

The different supply routes that channelled human remains into the museum greatly shaped the different fragments status and value, something that Smith utilised to construct a museum representative of his own character, ideals and legacy. These journeys are as social as they are physical, showing how human remains travelled through different relationships and the meanings they acquired along the way. Alberti (2011a) defines specimens as polysemic, as their many meanings depend on the relationships that they are part of. It is these relationships that enable the different supply channels of human remains, and these relationships that are exhibited on the museum shelves.

Alberti (2011a) defines the main routes as taking from wards, gift exchange and purchase. The lack of direct evidence for the purchase of human remains in the study material does not mean that this was not occurring; the hospital bribes or resurrectionist payments hint at this. This avenue requires further exploration, especially considering the creation of the Anatomy Act and the high proportion of foetal bodies in the museum.

The fragmentary nature of the museum's records was a frustrating obstacle in creating a representative understanding of the museum. However, by focusing on Smith's narrative in the

inscriptions, records and catalogues, the collections elucidated a wealth of knowledge about the relationship between creator and museum. This study did not aim to create a complete and permanent depiction of the museum as a collection of things, instead it aimed to contextualise the museum through the relationships and the people that formed it. The most interesting findings of this study centred around the museum as an embodiment of Smith's relationship with his father and as a space for Smith to indulge his interest in murder and define the histories of the cases he was involved in. The research into the Murder Act skeletons revealed a highly illuminating personal account of the involvement of medicine and the law, revealing Smith's understanding of the human body in great detail. The dedicated study of Richard Smith Junior himself, as a source of much of Bristol's medical history, has been long overdue and by exploring the history of the surviving fragments within the BRIPSC this study hopes to reactivate the fragment's powerful social and medical agency as patients, people and preparations.

Bibliography

Ahren, E., 2013. Making Space for Specimens: The Museums of the Karolinska Institute, Stockholm. In: S. Alberti & E. Hallam, eds. *Medical Museums: Past, Present and Future..* London: The Royal College of Surgeons of England, pp. 102-115.

Alberti, S., 2011a. *Morbid Curiosities: Medical Museums in Nineteenth-Century Britian.* Oxford: Oxford University Press.

Alberti, S., 2011b. Medical Museums Past, Present and Future. *Bulletin of the Royal College of Surgeons of England,* Volume 93, pp. 56-58.

Alberti, S. & Hallam, E., 2013. Bodies in Museums. In: S. Alberti & E. Hallam, eds. *Medical Museums: Past, Present and Future.* London: The Royal College of Surgeons of England, pp. 1-16.

Alberti, S. J. M., 2011a. *Morbid Curiosities: Medical Museums in Nineteenth-Century Britian.* Oxford: Oxford University Press.

Alford, H., 1890. The Bristol Infirmary in my Student Days. *Bristol Medico-Chirurgical Journal ,* Volume 8, p. 167.

Anon., 1869. A Skull and a Book. *The British Medical Journal ,* 2(457), pp. 373-375.

Anon., 1870. *Rules for the Government of the Bristol Royal Infirmary, confirmed at a General Board of the Trustees, held on the 25th of January, 1870,* Bristol : The Bristol Mercury and Daily Post Offices .

Anon., 1894. The Annual Meeting. *The British Medical Journal ,* 2(1753), pp. 268-271.

ANON, 1937. The Bristol Royal Infirmary Bicentenary. *Bristol Medico-Chirurgical Journal,* 54(206), pp. 287-300.

Appadurai, A., 1986. Introduction: Commodities and the Politics of Value . In: A. Appadurai, ed. *The Social Life of Things: Commodities in Cultural Perspective.* Cambridge : Cambridge University Press, pp. 3-63.

Aufderheide, A. & Rodríguez-Martín, C., 1998. *The Cambridge Encyclopaedia of Human Palaeopathology.* Cambridge: Cambridge University Press.

Baekeland, F., 2006. Psychological Aspects of Art Collecting . In: S. Pearce, ed. *Interpreting Objects and Collections .* London : Routledge, pp. 205-219.

Bailey, J., 1896. *The Diary of a Resurrectionist 1811-1812.* London : S. Sonnenschein & co. .

Barley, M., 1991. The Use of Upper Floors in Rural Houses. *Vernacular Architecture,* 22(1), pp. 20-23.

Barry, J., 1987. Publicity and the Public Good: Presenting Medicine in Eighteenth-Century Bristol. In: W. Bynum & R. Porter, eds. *Medical Fringe and Medical Orthodoxy 1750-1850.* London: Croom Helm, pp. 29-39.

Barry, J., 1987. Publicity and the Public Good: Presenting Medicine in Eighteenth-Century Bristol. In: W. Bynum & R. Porter, eds. *Medical Fringe and Medical Orthodoxy 1750-1850.* London: Croom Helm, pp. 29-39.

Bates, A., 2006. Dr Kahn's Museum: Obscene Anatomy in Victorian London. *Journal of the Royal Society of Medicine ,* 99(12), pp. 618-624.

Bates, A., 2008. Indecent and Demoralising Representations: Public Anatomy Museums in mid-Victorian England. *Medical History ,* Volume 52, pp. 1-22.

BBC News , 2011. *Murderer Hanged in Bristol in 1821 Buried.* [Online] Available at: http://www.bbc.co.uk/news/uk-england-bristol-13052364 [Accessed 24 January 2017].

Belfast News-Letter, 1951. The South Bank Exhibition. *Belfast News-Letter*, 7 May, p. 5.

Belk, R., 1988. Possessions and the Extended Self. *Journal of Consumer Research,* 15(2), pp. 139-168.

Belk, R. et al., 1988. Collectors and Collecting. *Advances in Consumer Research,* Volume 15, pp. 548-553.

Bennettt, T., 1995. *The Birth of the Museum: History, Theory, Politics.* London : Routledge.

Bourdieu, P., 1986. The Forms of Capital. In: J. Richardson, ed. *Handbook of Theory of Research for the Sociology of Education.* Westport, CT.: Greenword Press, pp. 47-58.

Bristol 24/7, 2017. *HISTORIC CHAPEL ON FORMER BRISTOL ROYAL INFIRMARY SITE SAVED FROM DEMOLITION.* [Online] Available at: www.bristol247.com/news-and-features/news/historic-chapel-former-bristol-royal-infirmary-site-saved-demolition/ [Accessed 12 February 2018].

Bristol Mercury, 1825. The Bristol Institution. *Bristol Mercury*, 31 January, p. 4.

Bristol Mercury, 1833. Bristol Infirmary. *Bristol Mercury*, 22 June .

Bristol Mercury, 1843. *British Library Newspapers.* [Online] Available at: tinyurl.galegroup.com/tinyurl/5NGTe0 [Accessed 24 October 2017].

Bristol Mercury, 1860. New Museum at the Infirmary. *The Bristol Mercury*, 6 October.

Bristol Mirror, 1810. To the Editor of the Mirror. *Bristol Mirror* , 3 February, p. 3.

Bristol Mirror, 1821. The Body of John Horwood. *Bristol Mirror*, 21 April , p. 3.

Bristol Mirror, 1825. The Bristol Institution. *Bristol Mirror* , 05 March.

Bristol Post , 2017. *Campaign launched to save BRI chapel - the oldest example of Bristol Byzantine architecture.* [Online] Available at: https://www.bristolpost.co.uk/news/bristol-news/campaign-launched-save-bri-chapel-477884 [Accessed 12 February 2018].

Bristol Post , 2017. *Government will decide if the old BRI building will be demolished for student flat development.* [Online] Available at: https://www.bristolpost.co.uk/news/bristol-news/government-decide-old-bri-building-506444 [Accessed 12 February 2018].

Bristol Times and Mirror, 1860. Bristol Royal Infirmary. Opening of the New Museum. *Bristol Times and Mirror*, 06 October, p. 8.

Bristol Times..., 1860. Bristol Royal Infirmary. Opening of the New Museum. *Bristol Times and Felix Farley's Bristol Journal*, 06 October, p. 8.

Brothwell, D., 1981. *Digging up Bones.* 3rd ed. Ithaca, New York: Cornell University Press.

Brunton, D., 2004. *Health, Disease and Society in Europe, 1800-1930.* Manchester: Manchester University Press.

Buikistra, J. & Ubelaker, D., 1994. *Standards for the Data Collection from Human Skeletal Remains.* Arkansas: Arkansas Archaeological Survey Research Series 44.

Buikstra, J. & Ubelaker, D., 1994. *Standards for the Data Collection from Human Skeletal Remains.* Arkansas: Arkansas Archaeological Survey Research Series 44.

Bury and Norwich Post , 1802. Sunday's Post. *Bury and Norwich Post* , 21 April .

Bush, G., 1796. *Bristol Record Society's Publications Vol. XXIX. Bristol and its Municipal Government 1820-1851.* Gateshead: The Northumberland Press Limited.

Bush, J., 1908. Early History of the Bristol Royal Infirmary. *The Bristol Medico-Chirurgical Journal ,* 26(101), pp. 193-206.

Bynum, W., 1987. Treating the Wages of Sin: Venereal Disease and Specialism in Eighteenth-Century Britain. In: W. Bynum & R. Porter, eds. *Medical Fringe and Medical Orthodoxy 1750-1850.* London: Croom Helm, pp. 5-28.

Carpenter, K. & Mansel , P., 1999. *The French Émigrés in Europe and the Struggle Against Revolution, 1789-1814.* New York: St Martin's Press inc..

Carter, P., 2014. Men About Town: Representations of Foppery and Masculinity in Early Eighteenth-Century Urban Society. In: H. Barker & E. Chalus, eds. *Gender in Eighteenth-Century England: Roles, Representations and Responsibilities.* London: Routledge, pp. 31-57.

Chaplin, S., 2008. Nature Dissected, or Dissection Naturalized? The Case of John Hunter;s Museum. *Museum and Society ,* 6(2), pp. 135-151.

Chaplin, S., 2009. *John Hunter and the 'Museum Oeconomy', 1750-1800 (PhD Thesis).* London : Kings College London .

Chartrand, R., 2000. *Emigre and Foreign Troops in British Service (2): 1803-1815.* Oxford : Osprey .

Coley, N., 2004. Home, Sir Everard, First Baronet (1756-1832) . In: *Oxford Dictionary of National Biography.* Oxford : Oxford University Press.

Connor, S., 2004. *The Book of Skin.* New York : Cornell University Press.

Cooper, D., 1974. *The Lesson of the Scaffold.* London : Allen Lane .

Cooper, P., 2004. Medicinal Properties of Body Parts. *Pharmaceutical Journal ,* 273(7330), pp. 900-902.

Cross, F., 1927. Early Medical Teaching in Bristol: The Bristol Medical School and its Association with The University College. *Bristol Medico-Chirurgical Journal ,* 44(164), pp. 73-112.

Davies, O. & Matteoni, F., 2015. 'A Virtue Beyond All Medicine': The Hanged Man's Hand, Gallows Tradition and Healing in 18th and 19th Century England. *Social History of Medicine ,* Volume 28, pp. 1-20.

Eichmann, N. L., 2012. *"A Peculiar Mark of Infamy" Punitive Dissection and England's Murder At of 1752 (PhD Thesis).* California : California State University .

Eyre-Brook, A., 1969. Richard Smith Junior and his times. *Bristol Medico-chirurgical Journal ,* 84(309), pp. 1-11.

Fabel, R., 2008. *Johnstone, George (1730-1787).* [Online] Available at: https://doi.org/10.1093/ref:odnb/14960 [Accessed 15 January 2019].

Farlex Partner Medical Dictionary, (2012). *struma. (n.d.) Farlex Partner Medical Dictionary..* [Online] Available at: https://medical-dictionary.thefreedictionary.com/struma [Accessed 5 March 2019].

Fisher., T., 1905. Bristol Royal Infimary: Objects of Interest in the Museum. *Western Daily Press*, 7 January.

Fissell, M., 1989. The 'Sick and Drooping Poor' in Eighteenth-Century Bristol and its Region. *The Society for the Social History of Medicine,* 2(1), pp. 35-58.

Fissell, M., 1991. *Patients, Power and the Poor in Eighteenth Century Bristol.* Cambridge: Cambridge University Press.

Fissell, M., 1991. *Patients, Power and the Poor in Eighteenth-Century Bristol.* Cambridge : Cambridge University Press.

Fissell, M. E., 1991. The Disappearance of the Patient's Narrative and the Invention of Hospital Medicine. In: R. French & A. Wear, eds. *British Medicine in an Age of Reform.* London: Routledge.

Foote, S., 1785. *The Genuine Memoirs of the Life of Sir John Dinely Goodere.* Worcester: J. Butler and James Grundy .

Foucault, M., 1977. *Discipline and Punish: The Birth of the Prison (translated by Alan Sheridan).* New York : Random House .

Francis, J., 1836. Sixth Meeting of the British Association for the Advancement of Science. *The Athenaeum: A Journal of Literature, Science, the Fine Arts, Music and Drama*, 27 August, p. 637.

Francis, J., 1836. Sixth Meeting of the British Association for the Advancement of Science. *The Athenaeum: A Journal of Literature, Science, the Fine Arts, Music and the Drama*, 27 August, p. 637.

French, R. & Wear, A., 1991. Introduction. In: R. French & A. Wear, eds. *British Medicine in an Age of Reform.* London: Routledge, pp. 1-8.

Gatrell, V., 1994. *The Hanging Tree: Execution and the English People 1770-1868.* Oxford : Oxford University Press.

Geary, P., 1986. Sacred Commodities: the Circulation of Medieval Relics. In: A. Appadurai, ed. *The Social Life of Things: Commodities in Cultural Perspective.* Cambridge: Cambridge University Press, pp. 3-63.

Gilbert, S. & Gubar, S., 2000. *The Madwoman in the Attic: The Woman Writer and the Nineteenth-Century Literary Imagination..* 2nd ed. New Haven: Yale University Press.

Gittings, C., 1984. *Death, Burial and the Individual in Early Modern England.* Beckenham: Croom Helm Ltd.

Glover, M., 1974. *The Peninsular War 1807-1814: A Concise Military History.* London : Newton Abbot.

Granshaw, L., 1992. The Rise of the Modern Hospital in Britain . In: A. Wear, ed. *Medicine in Society, Historical Essays.* Cambridge : Cambridge University Press, pp. 197-218.

Guerrini, A., 2004. Anatomists and Entrepreneurs in Early Eighteenth-Century London. *Journal of the History of Medicine and Allied Sciences ,* 59(2), pp. 219-239.

Gurwood, J., 1834. *The Dispatches of Field Marshall the Duke of Wellington, K.G. during his Various Campaigns in India, Denmark, Portugal, Spain, the Low Countries and France: From 1799 to 1818. Compiled from Official and Authentic Documents..* London: J. Murray.

Guthrie, G., 1815. *On Gun-Shot Wounds of the Extremities,* London : Longman .

Guthrie, G., 1820. *A Treatise on Gun-Shot Wounds, on Injuries of Nerves and on Wounds of the Extremeties Requiring the Different Operations of Amputation; in which The Various Methods of Performing these Operations are Shown Together with their After-Treatment; and Containi.* London : Burgess and Hill.

Hajdu, S., 2007. Soft Tissue Sarcomas. *Cancer ,* Issue 109, pp. 1697-1704.

Hallam, E., 2010. Articulating Bones: An Epilogue. *Journal of Material Culture ,* pp. 465-492.

Hallam, E. & Hockey, J., 2001. *Death, Memory and Material Culture.* Oxford : Berg.

Halliwell, D., 2012. *An Unjust Hanging: The True Story of John Horwood.* Cirencester: Memoirs Publishing .

Harrison, P., 2017. *Flaying in the Premodern World: Practice and Representation.* Martlesham: D.S. Brewer.

Harsant, W., 1899. Medical Bristol in the Eighteenth Century. *Bristol Medico-Chirurgical Journal ,* 17(66), pp. 297-314.

Hetling, W., 1831. Surgical Lectures at the Bristol Infirmary. *London Medical and Surgical Journal,* Volume 1, pp. 393-396.

Historic England, n.d. *Chapel Wing (only) to the Former Bristol Royal Infirmary.* [Online] Available at: https://historicengland.org.uk/listing/the-list/list-entry/1450692 [Accessed 2018 February 12].

Historic Towns Trust, 2017. *Atlas Historic Towns Volume 2 Bristol.* [Online] Available at: http://www.historictownsatlas.org.uk/sites/historictownsatlas/files/atlas/town/maps/bristol_1820_small_scale.pdf
[Accessed 11 December 2018].

Hobson, J., 2010. Bristol and the Foundation of its Madrigal Society. In: M. Crossley Evans, ed. *A Grand City - Life, Movement and Work: Bristol in the Eighteenth and Nineteenth Centuries.* Bristol: Bristol & Gloucestershire Archaeological Society.

Houghton, C., 2013. *conorjh.* [Online] Available at: http://conorhoughton.tumblr.com/post/43336275812/executed-12-april-1802-for-the-murder-of-the
[Accessed 13 May 2018].

Hurren, E., 2004. A Pauper Dead-House: The Expansion of the Cambridge Anatomical Teaching School under the late-Victorian Poor Law, 1870-1914.. *Medical History,* 48(1), pp. 69-94.

Hurren, E., 2016. *Dissecting the Criminal Corpse: Staging Post-Execution Punishment in Early Modern England.* London : Palgrave Macmillan .

Hurren, E., 2018. Other Spaces for the Dangerous Dead of Provincial England, c. 1752-1832. *History,* Volume 103, pp. 27-59.

Jewson, N., 1976. The Disappearance of the Sick-Man from Medical Cosmology. *Sociology,* Volume 10, pp. 224-44.

Jones, I. & Quigley, M., 2016. Preventing Lawful and Decent Burial: Resurrecting Dead Offences. *Legal Studies ,* 36(2), pp. 354-374.

Kaufman, M. & Wakelin, S., 2004. Amputation Through the Hip Joint During the Pre-Anaesthetic Era. *Clinical Anatomy,* Volume 17, pp. 36-44.

Kenny, A. & Skilton, A., 2017. The Bristol Royal Infirmary Specimen Collection. *Journal of Visual Communication in Media,* 40(3), pp. 123-126.

Khalil, E., 2005. An Anatomy of Authority: Adam Smith as Political Theorist. *Cambridge Journal of Economics,* Volume 29, pp. 57-71.

King , P. & Ward, R., 2015. Rethinking the Bloody Code in Eighteenth-Century Britain: Capital Punishment at the Centre and on the Periphery. *Past and Present,* 228(1), pp. 159-205.

King, P., 2017. *Punishing the Criminal Corpse, 1700-1840: Aggravated Forms of the Death Penalty in England.* London : Palgrave Macmillan .

Knott, J., 1985. Popular Attitudes to Death and Dissection in Early Nineteeth Century Britain: The Anatomy Act and the Poor. *Labour History ,* Issue 49, pp. 1-18.

Kopytoff, I., 1986. The Cultural Biography of Things: Commoditization as Process . In: A. Appadurai, ed. *The Social Life of Things: Commodities in Cultural Perspective.* Cambridge: Cambridge University Press , pp. 3-63.

Krmpotich, C., Fontein, C. & Harries, J., 2010. The Substance of Bones: The Emotive Materiality and Affective Presence of Human Remains. *Journal of Material Culture,* 15(4), pp. 371-384.

Lane, J., 1985. The Role of Apprenticeship in Eighteenth Century Medical Education in England. In: W. F. Bynum & R. Porter, eds. *William Hunter and the Eighteenth Century Medical World.* Cambridge: s.n., pp. 57-104.

Lawrence, S., 1988. Entrepreneurs and Private Enterprise: The Development of Medical Lecturing in Longon, 1775-1820. *Bulletin of the History of Medicine,* 62(2), pp. 171-192.

Linebaugh, P., 1975. The Tyburn Riot Against the Surgeons. In: D. Hay, ed. *Albion's Fatal Tree: Crime and Society in Eighteenth-Century England.* London: Allen Lane, pp. 17-64.

London Daily Post and General Advertiser , 1741. News. *London Daily Post and General Advertiser* , 21 April .

Loon, H., 1957. The Past and Present Medical Significance of Hip Disarticulation. *Artificial Limbs,* 4(2), pp. 4-21.

Loudon, I., 1987. The Vile Race of Quacks with Which This Country is Infested. In: W. Bynum & R. Porter, eds. *Medical Fringe and Medical Orthodoxy 1750-1850.* London: Croom Helm, pp. 106-128.

Lovejoy, C., Meindl, R., Pryzbeck, T. & Mensforth, R., 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,* Issue 68, pp. 15-28.

Lovell, N., 1997. Trauma Analysis in Palaeopathology. *Yearbook of Physical Anthropology ,* Issue 40, pp. 139-170.

Lovell, N., 1997. Trauma Analysis in Paleopathology. *Yearbook of Physical Anthropology,* Volume 40, pp. 139-170.

Lupton, D., 1998. *The Emotional Self: a Sociocultural Exploration.* London : Thousand Oaks.

MacDonald, H., 2009. Procuring Corpses: The English Anatomy Inspectorate, 1842 to 1858.. *Medical History,* 53(3), pp. 379-396.

Malawer, M. & Sugarbaker, P., 2001. Hip Disarticulation. In: P. Sugarbaker & M. Malawer, eds. *Musculoskeletal Cancer Surgery: Treatments of Sarcomas and Allied Diseases.* London: Kluwer Academic Publishers, pp. 337-348.

Mann, R., Wiercinska, A. & Scheffrahn, W., 1992. Distal Phocomelia of the Forearm in a Thirteenth-Century Skeleton from Poland. *Teratology ,* Issue 45, pp. 139-143.

Marvin, C., 2009. The Body of the Text: Literacy's Corporeal Constant. *Quarterly Journal of Speech,* 80(2), pp. 129-149.

Matthew's Annual Bristol Directory, 1820. *Matthew's Annual Bristol Directory for the Year 1820.* 22nd ed. Bristol : Matthews Matthews.

Mauss, M., 1966. *The gift : Forms and functions of exchange in archaic societies; translated by Ian Cunnison; with an introduction by E.E. Evans-Pritchard..* London : Routledge and Kegan Paul .

McBain, G., 2014. Modernising the Law on the Unlawful Treatment of Dead Bodies. *Journal of Politics and Law ,* 7(3), pp. 89-99.

Mitchell, P. et al., 2011. The Study of Anatomy in England from 1700 to the Early 20th Century. *Journal of Anatomy ,* Volume 219, pp. 91-99.

Mitchell, P. & Redfern, R., 2007. Diagnostic Criteria for Developmental Dislocation of the Hip in Human Skeletal Remains. *International Journal of Osteoarchaeology,* Issue 17, pp. 1-11.

Money, J., 1993. The Masonic Moment: Or, Ritual, Replica, and Credit: John Wilkes, the Macaroni Parson, and the Making of the Middle Class Mind.. *Journal of British Studies,* 32(4), pp. 358-395.

Munro Smith, G., 1917. *A History of the Bristol Royal Infirmary.* Bristol : Arrowsmith.

Murphy, E., 1996. A Possible Case of Hydrocephalus in a Medieval Child from Doonbought Fort, Co. Antrim, Northern Ireland.. *International Journal of Osteoarchaeology ,* Issue 6, pp. 435-442.

Neale, A., 1963. *Medical Progress in Bristol: The Long Fox Memorial Lecture.* Bristol : John Wright & Sons LTD.

Neve, M., 1983. Science in a Commercial City: Bristol 1820-60. In: I. Inkster & J. Morrell, eds. *Metropolis and Province: Science in British Culture, 1780-1850.* Oxon: Routledge, pp. 179-204.

Neve, M., 1987. Orthodoxy and Frindge: Medicine in Late Georgian Bristol. In: W. Bynum & R. Porter, eds. *Medical Fringe and Medical Orthodoxy 1750-1850.* London: Croom Helm, pp. 40-55.

Neve, M., 1987. Orthodoxy and Fringe: Medicine in Late Georgian Bristol. In: W. Bynum & R. Porter, eds. *Medical Fringe and Medical Orthodoxy 1750-1850.* London: Croom Helm, pp. 40-55.

O'Callaghan, C., 2014. Sarah Waters's Recreations of Victorian Domestic Space; or, the Lesbians in the Attic. *Peer English,* Issue 9, pp. 122-138.

Offer, A., 2003. Between the Gift and the Market: the Economy of Regard. *Economic History Review,* 50(3), pp. 450-476.

Ortner, D., 2005. *Identification of Pathological Conditions in Human Skeletal Remains.* San Diego, CA: Elsevier Science .

Parssinen, T., 1974. Popular Science and Society: The Phrenology Movement in Early Victorian Britain. *Journal of Social History,* 8(1), pp. 1-20.

Payne, L., 1977. *'To Lose Foolish Tenderness': Clinical Detachement and its Origins among Medical Men in Early-Modern England (PhD Thesis).* California: University of California.

Pearce, S., 1993. *Museums, Objects and Collections: A Cultural Study.* Washington, D.C.: Smithsonian Institution Press.

Pedwell, B., 2018. *Chapel Wing (only) to the Former Bristol Royal Infirmary.* [Online] Available at: https://britishlistedbuildings.co.uk/101450692-chapel-wing-only-to-the-former-bristol-royal-infirmary-central-ward/photos/215347#.XJOSvCj7SUk
[Accessed 21 March 2019].

Penfold-Mounce, R., 2010. Consuming Criminal Corpses: Fascination with the Dead Criminal Body. *Mortality,* 15(3), pp. 250-265.

Penrose, J., 1741. *The Reverend Mr. Penrose's Account of the Behaviour, Confession, and Last DYing Words, of the Four Malefactors who were Executed at St. Michaels Hill at Bristol, on Wednesday the 15th April 1741.*. Bristol : s.n.

Perry, C., 1981. *The Bristol Royal Infirmary 1904-1974.* Bristol: Portishead Press.

Peterson, M., 1978. *The Medical Profession in Mid-Victorian London.* London: University of California Press.

Peterson, M., 1978. *The Medical Profession in Mid-Victorian London.* London : University of California Press .

Phenice, T., 1969. A Newly Developed Method of Sexing the Os Pubis. *American Journal of Physical Anthropology,* Issue 30, pp. 297-301.

Philippart, J., 1820. *The Royal Miltary Calendar, or Army Service and Comission Book. Containing the Services and Progress of Promotion of the Generals, Lieutenant-Generals, Major-Generals, Colonels, Lieutenant-Colonels, and Majors of the Army, According to Seniority.* 3 ed. London: A.J. Valpy.

Porter, R., 1985. William Hunter: a Surgeon and a Gentleman. In: W. Bynum & R. Porter, eds. *William Hunter and the Eighteenth-Century Medical World.* Cambridge: Cambridge University Press, pp. 7-34.

Porter, R., 1997. *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present.* London: HarperCollins Publishers.

Prichard, A., 1892. The Early History of the Bristol Medical School. *Bristol Medico-Chirurgical Journal ,* 10(38), pp. 264-291.

Rafter, N., 2005. The Murderous Dutch Fiddler: Criminology, History and the Problem of Phrenology. *Theoretical Criminology,* 9(1), pp. 65-96.

Reinarz, J., 2005. The Age of Museum Medicine: The Rise and Fall of the Medical Museum at Birmingham's School of Medicine. *Social History of Medicine ,* 18(3), pp. 419-437.

Rendell, M., 2012. *The Sad Case of John Horwood, who Took 190 Years to be Buried.* [Online] Available at: http://mikerendell.com/the-sad-case-of-john-horwood-who-took-190-years-to-be-buried/
[Accessed 12 February 2017].

Richardson, R., 1987. *Death, Dissection and the Destitute.* London : Routledge & Kegan Paul Ltd.

Roberts, C. & Manchester, K., 1997. *The Archaeology of Disease.* 2nd ed. Oxford: Sutton Publishing.

Rogers, J. & Waldron, T., 2001. DISH and the Monastic Way of Life. *International Journal of Osteoarchaeology,* Issue 11, pp. 257-265.

Ross, I. & Urquhart Ross, C., 1979. Body Snatching in Nineteenth Century Britain: From Exhumation to Murder. *British Journal of Law and Society ,* 6(1), pp. 108-118.

RPS CgMs Development Control Committee B , 2017. *17/02413/F: Old Bristol Royal Infirmary Building Marlborough Street,* London : RPS CgMs.

Saxtgar, W., 1922. Crime and Its Punishment (III): the Noose and the Surgeon's Knife.. *Western Daily Press* , 12 August, p. 4.

Schlag, P., 1997. Law and Phrenology. *Harvard Law Review,* 110(4), pp. 877-921.

Shelley, M., 1818. *Frankenstein, Or, The Modern Prometheus.* Oxford: Oxford University Press.

Sketchley, J., 1775. *Sketchley's Bristol Directory.* Bristol: J. Sketchley.

Smith, R., 1826. Bristol Infirmary. *Bristol Mercury*, 1 January.

Smith, R., 1838b. Hyatids of the Heart. *The Lancet,* 30(778), pp. 628-629.

Smith, R. et al., 1834. 'To the Chairman and Committee on Medical Education'. *The Medico-Chirurgical Review and Journal of Practical Medicine,* Volume 21, pp. 161-163.

Stafford, W., 2008. Gentlemanly Masculinities as Represented by the Late Georgian Gentleman's Magazine. *The Journal of the Historical Association; London ,* 93(309), pp. 47-68.

Stuart, K., 2000. *Defiled Trades and Social Outcasts: Honor and Ritual Pollution in Early Modern Germany.* Cambridge : Cambridge University Press.

Suchey, J. & Brooks, S., 1990. Skeletal Age Determination Based on the Os Pubis: A Comparison of the Acsadi-Nemeskeri and Suchey-Brooks Methods. *Human Evolution,* Issue 5, pp. 227-238.

Sugarbaker, P. & Chretien, P., 1981. A Surgical Technique for Hip Disarticulation. *Surgery ,* 90(3), pp. 546-553.

Tarlow, S., 2014. The Technology of the Gibbet. *International Journal of Historical Archaeology,* Volume 18, pp. 668-699.

Tarlow, S., 2016. Curious Afterlives: The Enduring Appeal of the Criminal Corpse. *Mortality,* 21(3), pp. 210-228.

Tarlow, S. & Dyndor, Z., 2015. The Landscape of the Gibbet. *Landscape History,* 36(1), pp. 71-88.

The Belfast Daily Mercury, 1856. Human Skin Tanned. *The Belfast Daily Mercury*, 4 October.

The Dolphin Society, 2015. *Past Presidents 1749-1948.* [Online] Available at: https://www.dolphin-society.org.uk/past-presidents-1749-1948 [Accessed 28 August 2018].

The Lancet, 1832. An Act for Regulating Schools of Anatomy. *The Lancet,* 18(47), pp. 712-716.

The Morning Post and Gazetteer, 1802. Public Accounts. *The Morning Post and Gazetteer*, 19 April .

Thompson, L., 1946. Tanned Human Skin. *Bulletin of the Medical Library Association ,* 34(2), pp. 93-102.

Todd, T., 1921a. Age Changes in the Pubic Bone I: The Male White Pubis.. *American Journal of Physical Anthropology,* Issue 3, pp. 285-334.

Tomasini, F., 2017. *Remembering and Disremembering the Dead: Posthumous Punishment, Harm and Redemption over Time.* London : Palgrave Macmillan .

Tröhler, U. & Prüll, C., 1997. The Rise of the Modern Hospital. In: I. Loudon, ed. *Western Medicine, An Illustrated History.* Oxford: Oxford University Press, pp. 160-175.

Unruh, D., 1983. Death and Personal History: Strategies of Identity Preservation. *Social Problems,* 30(3), pp. 340-351.

Urban, S., 1814. Promotions. *The Gentleman's Magazine and Historical Chronicle,* Volume 84, p. 89.

Urban, S., 1826. Obituary. *The Gentleman's Magazine and Historical Chronical,* 92(2).

van der Merwe, A., Maat, G. & Watt, I., 2012. Diffuse Idiopathic Skeletal Hyperostosis: Diagnosis in a Palaeopathological Context. *HOMO-Journal of Comparative Human Biology,* Issue 63, pp. 202-215.

Ward, R., 2015. The Criminal Corpse, Anatomists and the Criminal Law: Parlimentary Attempts to Extend the Dissection of Offenders in Late Eighteenth-Century England. *Journal of British Studies ,* 54(1), pp. 63-87.

Watson, B., 1997. *When Soldiers Quit: Studies in Military Disintigration.* Westport, CT: Greenwood Publishing Group Ltd.

Watson-Williams, E., 1937. The Bristol Royal Infirmary Bicentenary. *Bristol Medico-Chirurgical Journal,* 54(206), pp. 387-300.

Western Daily Press, 1936. Notes of the Day: Bristol Surgeons Museum. *Western Daily Press*, 12 September, p. 9.

Windsor, J., 1994. Identity Parades. In: J. Elsner & R. Cardinal , eds. *Cultures of Collecting*. London: Reaktion Books, pp. 49-67.

Primary Sources

Bristol Records Office:

The Richard Smith Papers, 35893/36:

35893/36/y: Catalogue of Mr Richard Smiths Preparations.

35893/36/f: Biographical Memoirs Volume VI.

35893/36/e_i: Biographical Memoirs Volume V.

35893/36/v_ii: Miscellaneous papers etc. re case of John Horwood executed for murder.

35893/36/u: Manuscript notes on Infirmary Skeletons.

35893/36/x: Museum Visitors Book

Bristol Theatre by Richard Smith, 45883/7-11.

Appendices

APPENDIX A: TABLE EXPLAINING THE PATHOLOGY CATEGORIES USED IN FIGURE 13 FOR THE BRIPSC

Category.	Conditions included.	Fragments included.
Non-specific infection.	Non-specific infection, osteomyelitis and periostitis.	7, 65, 127, 143, 151, 169, 173, 179, 189, 195, 219, 223, 223 97.6 155, RC14, RC30, RC31, RC32, GP4, RC35, RC36, RC37, RC41, RC41 (74).
Trauma.	Fracture (healed fracture, non-union healed fracture, malunion healed fracture), trephination, amputation.	35, 41, 63, 65b 77, 85, 109, 217 64, RB11, RB7, RB12.
Osteoarthritis.	Osteoarthritis, DISH, ankylosing spondylitis.	193, 213, 243, 245, 247, 249, RG13, RG14, RG15, RG16.
Synostosis.	Ankylosis, fusion.	69, 129, 133 56.1, 133, 157, 181, RB1, RB9, RD12.
Syphilis.	Tertiary syphilitic bone disease, syphilitic node, caries sicca.	BACT 116 203, BACT 117, BACT 115, RE5, RE3, RE6, RE7, RE2.
Neoplastic disease.	Osteosarcoma, neoplasm.	163, 205, 207, BRI1, RK8.
Congenital deformity.	Talipus equinovarus, phocomelia, congenital dislocation.	BR12, GP90, RA9.
Scoliosis.	Scoliosis.	87, 93, 53(551), RA5.
Tuberculosis.	Chronic bone infection (assumed tuberculosis), tuberculosis.	RC34, RD11, RD13.
Metabolic disease.	Rickets, osteomalacia, osteoporosis.	6933, RA3, RA4.
Dwarfism with rickets.	Dwarfism with rickets.	RG18, RG12.
Morgagni's syndrome.	hyperostosis frontalis interna, defined as Morgagni's syndrome from catalogue.	PM8801, RE8.
Normal Anatomy		261, 263.
Paralysis	Wasting of tibial diaphysis.	187
Unknown	Thickening and reactive bone on skull.	235
Necrosis.	Necrosis (from catalogue)	RC33.
Hydrocephalus.	Hydrocephalus.	RA6.

Fracture and Infection.		147.
Fracture and osteoarthritis.		51 98.2.1.1.

Not included: 103 (plaster cast of humerus), BC50a (sternum soft tissue preparation), BRI 3 and BRI 4 (single ribs separated from RA5 during previous storage/movement).

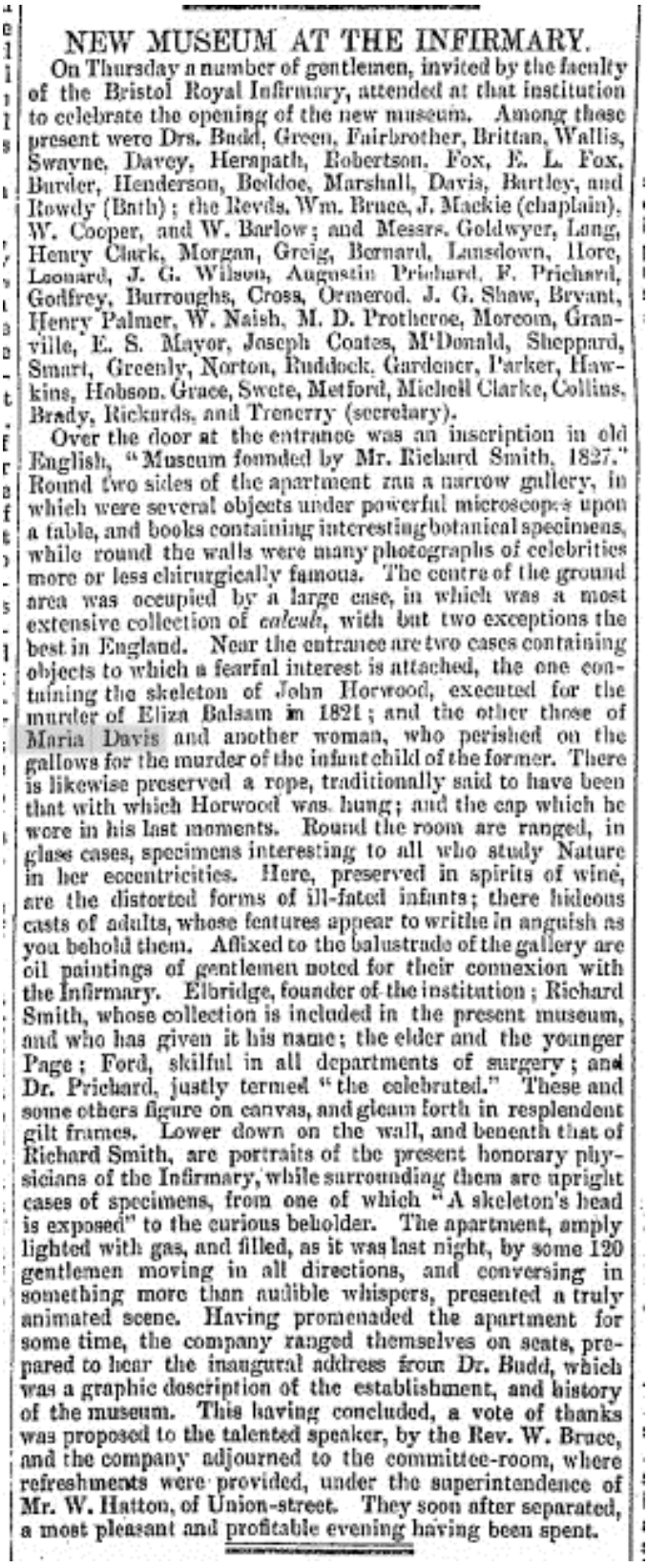
Appendix B: Table explaining the pathology categories used in Figure 15 for the BRO: 35893/36/y

Category.	Conditions included.	Catalogue entries included.
Cancer.	Cancers, tumours.	32, 56, 77, 91, 92, 94, 96, 111, 114, 115, 185, 224, 230, 261.
Trauma.	Fracture, amputation.	71, 78, 79, 81, 83, 85, 255.
Male generative organ diseases.	Scrotal hernia, disease of the testis, phimosis.	70, 110, 119, 165, 180, 187, 211, 290.
Skeletal diseases.	Spina bifida, distorted spine, hip cartilage erosion, cartilaginous substance removed from knee joint, diseased tibia.	101, 166, 192, 208, 229, 293.
Polypus.	Polypus.	84, 86, 218, 226, 228, 339.
Stomach or bowel disease.	Naval rupture, intussusception, omental hernia, inverted stomach, diseased stomach.	90, 183, 286, 286, 291, 292.
Infectious or parasitic disease.	Malaria (ague-cake), hydatids.	37, 38, 40, 41, 113, 221.
Aneurism.	Aneurism.	188, 217, 281.
Bladder or kidney disease.	Bladder disease, abscess, kidney calculi.	33, 264, 285, 288.
Birth defects.	Monstrous birth, false conception.	227, 231, 252.
Ulcer.	Ulcer.	57, 167.
Female generative organ disease.	Ovarious dropsy.	100, 116.

Elongated lymph.	Elongated lymph.	88, 89.
Excrescence.		26, 28.
Liver abscess.	Liver abscess.	280.
Thickened cuticle.	Thickened cuticle.	145,
Suppuration.	Suppuration.	184,

APPENDIX C: CONTEMPORARY DESCRIPTIONS OF THE MUSEUM

C.a. Bristol Mercury: 'New Museum at the Infirmary'



NEW MUSEUM AT THE INFIRMARY.

On Thursday a number of gentlemen, invited by the faculty of the Bristol Royal Infirmary, attended at that institution to celebrate the opening of the new museum. Among those present were Drs. Budd, Green, Fairbrother, Brittan, Wallis, Swayne, Davey, Herapath, Robertson, Fox, E. L. Fox, Burder, Henderson, Beddoe, Marshall, Davis, Bartley, and Rowdy (Bath); the Revds. Wm. Bruce, J. Mackie (chaplain), W. Cooper, and W. Barlow; and Messrs. Goldwyer, Lang, Henry Clark, Morgan, Greig, Bernard, Lansdown, Hore, Leonard, J. G. Wilson, Augustin Prichard, F. Prichard, Godfrey, Burroughs, Cross, Ormerod, J. G. Shaw, Bryant, Henry Palmer, W. Naish, M. D. Protheroe, Morcom, Granville, E. S. Mayor, Joseph Coates, M'Donald, Sheppard, Smart, Greenly, Norton, Ruddock, Gardener, Parker, Hawkins, Hobson, Grace, Swete, Metford, Michell Clarke, Collins, Brady, Rickards, and Trenerry (secretary).

Over the door at the entrance was an inscription in old English, "Museum founded by Mr. Richard Smith, 1827." Round two sides of the apartment ran a narrow gallery, in which were several objects under powerful microscopes upon a table, and books containing interesting botanical specimens, while round the walls were many photographs of celebrities more or less chirurgically famous. The centre of the ground area was occupied by a large case, in which was a most extensive collection of *calculi*, with but two exceptions the best in England. Near the entrance are two cases containing objects to which a fearful interest is attached, the one containing the skeleton of John Horwood, executed for the murder of Eliza Balsam in 1821; and the other those of Maria Davis and another woman, who perished on the gallows for the murder of the infant child of the former. There is likewise preserved a rope, traditionally said to have been that with which Horwood was hung; and the cap which he wore in his last moments. Round the room are ranged, in glass cases, specimens interesting to all who study Nature in her eccentricities. Here, preserved in spirits of wine, are the distorted forms of ill-fated infants; there hideous casts of adults, whose features appear to writhe in anguish as you behold them. Affixed to the balustrade of the gallery are oil paintings of gentlemen noted for their connexion with the Infirmary. Elbridge, founder of the institution; Richard Smith, whose collection is included in the present museum, and who has given it his name; the elder and the younger Page; Ford, skilful in all departments of surgery; and Dr. Prichard, justly termed "the celebrated." These and some others figure on canvas, and gleam forth in resplendent gilt frames. Lower down on the wall, and beneath that of Richard Smith, are portraits of the present honorary physicians of the Infirmary, while surrounding them are upright cases of specimens, from one of which "A skeleton's head is exposed" to the curious beholder. The apartment, amply lighted with gas, and filled, as it was last night, by some 120 gentlemen moving in all directions, and conversing in something more than audible whispers, presented a truly animated scene. Having promenaded the apartment for some time, the company ranged themselves on seats, prepared to hear the inaugural address from Dr. Budd, which was a graphic description of the establishment, and history of the museum. This having concluded, a vote of thanks was proposed to the talented speaker, by the Rev. W. Bruce, and the company adjourned to the committee-room, where refreshments were provided, under the superintendence of Mr. W. Hatton, of Union-street. They soon after separated, a most pleasant and profitable evening having been spent.

Bristol Mercury (1860) 'New Museum at the Infirmary' *Bristol Mercury,* 6 October

"Over the door at the entrance was an inscription in old English, "Museum founded by Mr. Richard Smith, 1827." Round two sides of the apartment ran a narrow gallery, in which were several objects under powerful microscopes upon a table, and books containing interesting botanical specimens, while round the walls were many photographs of celebrities more or less chirurgically famous. The centre of the ground area was occupied by a large case, in which was a most extensive collection of calculi, with but two exceptions the best in England. Near the entrance are two cases containing objects to which a fearful interest is attached, the one containing the skeleton of John Horwood, executed for the murder of Eliza Balsum in 1821; and the other those of Maria Davis and another woman, who perished on the gallows for the murder of the infant child of the former. There is likewise present a rope, traditionally said to have been that with which Horwood was hung; and the cap which he wore in his last moments. Round the room are ranged, in glass cases, specimens interesting to all who study Nature in her eccentricities. Here, preserved in spirits of wine, are the distorted forms of ill-fated infants; there hideous casts of adults,

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C.b: J. Francis: 'Sixth Meeting of the British Association for the Advancement of Science'

J. Francis (1836) 'Sixth Meeting of the British Association for the Advancement of Science' *The Athenaeum: A Journal of Literature, Science, the Fine Arts, Music and the Drama.* August 27 1836 p.637

characteristic of the place.

INSTITUTIONS: Philosophical and Literary..Infirmary, attached to which is Mr. Richard Smith's Museum†..General Hospital..Blind Asylum..Bristol Library..Library,

† Mr. Smith's Museum was an object of some attraction; amongst the contents most likely to excite the curiosity of the non-medical visitor, was the skeleton of a murderer, whose skull has been *phrenologically* marked by Spurzheim himself,—"the last words and dying speech," and all other documents relating to the murder, being actually bound up together in the skin of the malefactor, which had been tanned for that express purpose!—The heart of Sheriff Yeamans, who was hung in the reign of Charles I., 1643, by Fairfax, for an attempt to deliver the city to Prince Rupert, and which is converted into spermaceti.—A specimen of full grown *Siamesely*-conjoined twins. For the scientific pathologist, however, there were objects more worthy of attention; in the department of Necrosis, many interesting specimens of absorption and deposition of bony matter in accidents, and in Struma, and full 150 others of various kinds, hung in rows round the room. In the Museum upwards of one hundred cards, on each of which is displayed a set of biliary concretions, in some the specimens are very large and single,—in others 150 individuals are affixed; two specimens having a very singular external crystallization. The gem, however, of the Museum is the collection of Calculi. The plan of display is excellent. Each calculus, or, if there are several, one of the set is sawed through and fixed to the card-board, so that one half exhibits the nucleus and internal layers, the other half the exterior coating. Upon each card are written the name, age, domicile, &c. of the patient. Some of the calculi have foreign bodies for a nucleus,—a piece of bougie, a pin, four

of the Sectional Committee; the one (the Committee) should be the foreseeing and directing, and the other (the Chairman) the controlling mind of the Association. We take, as an illustration of the whole question, the proceedings on Thursday in the Section of Mechanical Science (to be published next Saturday). It appears from our Report, that while Mr. Enys was communicating much original information respecting the working of steam-engines in Cornwall (perhaps, says our correspondent, the most valuable communication made to the Section) he was interrupted by some person, who had for the occasion clothed himself in the garb of science, and who expressed a wish that he would conclude, as himself and friends were exceedingly anxious to hear Dr. Lardner on Steam Communication with America. Now, under the circumstances that a company has been established at Bristol for the purpose of opening such line of communication, the subject might have been judiciously selected for a popular address at

pieces of stick, the tooth of a cat, and a common cinder, two inches long and one broad.

These things we know are neither rich nor rare,
The wonder only is—how they got there!

Several specimens have eccentric nuclei. The most singular specimen is a set of four large, and twenty or thirty small calculi, entirely *carbonate of lime*. It is, perhaps, unique.

"Mr Smith's Museum was an object of some attraction: amongst the contents most likely to excite the curiosity of the non-medical visitor, was the skeleton of a murderer, whose skull has been phrenologically marked by Spurzheim himself, "the last words and dying speech" and all other documents relating to the murderer, being actually bound up together in the skin of the malefactor, which had been tanned for that express purpose: The heart of Sheriff Yeamans, who was hung in the reign of Charles I,. 1643, by Fairfax, for an attempt to deliver the city to Prince Rupert, and which is converted into spermaceti. A specimen of full grown Siamesely-conjoined twins. For the scientific pathologist, however, there were objects more worthy of attention; in the department of Necrosis, many interesting specimens of absorption and deposition of bony matter in accidents, and in Struma, and full 150 others of various kinds, hung in rows around the room. In the Museum upwards of one hundred cards, on each of which is displayed a set of biliary concretions, in some the specimens are very large and single, in others 150 individuals are affixed; two specimens having a very singular external crystallization. The gem, however, of the Museum is the collection of Calculi. The plan of display is excellent, each calculus, or, if there are several, one of the set is sawed through and fixed to the card-board, so that one half exhibits the nucleus and internal layers, the other half the exterior coating. Upon each card are written the name, age, domicile. &c. of the patient. Some of the calculi have foreign bodies for a nucleus,- a piece of bougie, a pin, four pieces of stick, the tooth of a cat, and a common cinder, two inches long and one broad.

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APPENDIX D: ADDITIONAL HISTORICAL CONTEXT

D.a: Background to the Bristol Royal Infirmary

By 1730 Bristol was the second wealthiest city in England, owing this wealth to the strong trade links and manufacturing industry provided by the city's port (Fissell, 1991). The city of Bristol was an important part of the triangular slave trade and these trade links also provided opportunity to export local goods, sugar being the most substantial of these (ibid). Economic growth invariably leads to population growth and due to the expansion in urban populations during the 18th and 19th centuries, hospitals were becoming increasingly more important as tools in increasing the productivity of the labouring poor, who were essential to the trade economy of the time (Granshaw, 1992; Tröhler & Prüll, 1997). This led to the establishment of many general hospitals, especially in areas with a significant manufacturing industry (Tröhler & Prüll, 1997) including the Bristol Infirmary. At this time there was also a transition occurring within healthcare. The hospital was becoming increasingly medicalised, involving the decline of apothecaries, the alienation of patients and the rise in power of the surgeons (Fissell, 1991). The bodies of the deceased provided valuable teaching material to the surgeons and post-mortem dissection and body snatching were commonplace, if not accepted by the public.

The Bristol Infirmary was founded towards the end of 1735 and started accepting patients in 1737 with 34 beds (Munro Smith, 1917). Although closely contested by hospitals in Edinburgh and Winchester the Bristol Infirmary is considered to have been the first establishment of its kind outside of London (ibid). It operated on a subscription basis where wealthy patrons could admit sick patients, the number of which depended on how much they were willing to donate (ibid). Hospital staff were not paid for their work, it was seen as a charitable donation and could also provide networking opportunities with those financing the hospital: wealthy people who were still treated at home and could be profitable clients for their private practice (Peterson, 1978).

In eighteenth-century Bristol, in agreement with the wider medical context, the differences between regular and quack medicine were undefined and overlapping. Quackery did not offer a contrasting understanding of medicine, rather they worked within orthodoxy to exploit certain influential aspects of regular practice for economic gain (Barry, 1987). The threat of quack medicine is a longstanding concern within the medical profession, defined as both an adversary and scapegoat when times were hard (Loudon, 1987). Every tier of the medical community was subject to dismissal as quack medicine by the one above it, excluding the physicians (Loudon, 1987). What defines 'quack medicine' has been explored in terms of obvious advertising and performative nature (Barry, 1987), a lack of qualification and itinerant nature (Loudon, 1987) or specialisation in a specific area, especially venereal disease (Bynum, 1987).

In the eighteenth century anti-quackery was not a prevalent concern until the 1790s where concerns about the growing power of the apothecaries caused them to become the targets (Neve, 1987). Bristol supported a large and wealthy community of apothecaries, enabled by the population's propensity for opium-based drugs and patent medicines were widely advertised in newspapers and were popular among the public (Neve, 1987). After the Apothecaries Act of 1815 this opposition was turned instead towards the dispensing druggists (Loudon, 1987).In the eighteenth-century Bristol contained a population of what Fissell (1991)describes as 'occasional' practitioners: those who had not gone through the standard process of apprenticeship and openly advertised and competed for business. The threat that they posed on the business of regular practitioners, like Smith, caused them to be discredited by surgeons such as Smith.

The medical museum formed an instrumental component in the fight against quack medicine and the establishment of a medical monopoly by the medical profession. Museums were associated with quack medicine in two ways, which will now be discussed. Firstly popular medical museums exhibited many of the features characteristic of quack medicine: their heavily advertised, performative and sometimes itinerant nature. This was combined with their sensationalist and titillating displays in their critiques. Secondly, some museums provided the stimulus and space for the direct sale of quack medicines by association with irregular practitioners.

In addition to the private museums of hospitals and colleges, like that of Richard Smith, that were the reserve of the medical community and their high-status associates, this period saw the expansion and subsequent decline of public anatomy museums. This was not a new phenomenon: early-Modern anatomical collections could be opened up to the public, although usually with a political motivation to assert their epistemological dominance, Reinarz cites the Medicis in 15thC Florence, or in an attempt to civilise the public (Reinarz, 2005). In the Eighteenth-Century, most anatomical museums were strictly for the use of medical men, either by restricted admission or by their private location within medical schools. There were displays available to the public, including waxworks and real material, but the general interest in anatomy that had grown during the eighteenth century began to decline in the latter half of the century (Bates, 2006). This interest was sparked again in the 1820s by the case of Burke and Hare and a rise in popularity of wax models, which widened the availability of anatomy as an interest (Bates, 2006) and the termination of public dissection as a punishment due to the 1832 Anatomy Act caused the anatomically-interested public to take up an interest in museumbased anatomy (Bates, 2008), leading to a growth in museum number.

Public medical museums were originally supported by the medical profession as the education of the people was seen as being crucial to combatting the threat of quack medicine (Bates, 2006). However,

this changed with the development of associations with quack medicine, causing popular museums to become the enemy of publications like the *Lancet.* This is exemplified in the case of Dr Kahn's museum (opened in 1851): originally lauded for being educational and well-presented, but due to economic difficulties, Kahn formed an alliance with Perry and Co, a company who advertised and sold nonmedically approved cures (Bates, 2006). This alliance effectively transformed the museum, through its open discussion and display of venereal disease and provision of on-site medical advice, into a walkin clinic for the concerned (and embarrassed) public. This hugely increased the profits from the business but also subjected Kahn to the attack of anti-quack campaigners, branded '*obscene and disgusting'* by the *Lancet* (Bates, 2006).

An influential weapon in the anti-quack campaigners' arsenal was the Obscene Publications Act of 1857, which regulated popular anatomy by restricting some material purely to professional use, stating that it would corrupt the public who were not as able to cope with the material. It was under this act that Dr Kahn's museum was forcibly closed two decades after it was opened (Bates, 2006). Smith's museum can be interpreted as a way to distinguish himself from these practitioners, by creating a visual library of medical knowledge and placing it in a space that was exclusive to those who had been through the approved educational pathways (or who had the social status to bypass this). The museum acted as an expression of his medical superiority, displaying information that was inaccessible to those he deemed inferior. Smith's museum was also not advertised, another feature to separate him from quack practitioners.

Medical museums formed a space in which the distribution of medical knowledge could be controlled. The restriction of admission to medical students, or Infirmary subscribers in the case of Richard Smith's museum (Munro Smith, 1917), maintained the exclusivity of medical knowledge. This was another method of ensuring the protection of their profession from competition. By attempting to maintain a medically-ignorant public the ultimate diagnostic power of the doctors could remain unquestioned and the closing of public museums tempered the threat of quack medicine. The fight against quack medicine as a whole can be seen as an attempt to further diminish any power that the poor held over their bodies and treatment by removing their ability to choose un-orthodox medicine. Unregulated, market-place medicine was not conducive to the formation of a medical monopoly by the orthodox practitioners. Neve (1987) defines the real threat to orthodox medicine as being not the irregular practitioner, but rather the 'drug-taking self-helper.'

D.b: The 1832 Anatomy Act

The Anatomy Act of 1832 allowed anatomists to perform dissections on the unclaimed bodies of those who died in workhouses and hospitals. In addition to establishing an anatomical inspectorate the act gave qualified medical practitioners immunity from being prosecuted for possessing a human body and also removed dissection as a punishment for murder, instead designating hanging in chains or burial at the court's discretion (The Lancet, 1832). The demand for cadavers was high and the opportunistic anatomists had to rely on unofficial sources of bodies. Body-snatching and the secret use of those who had died within the hospital created many problems for both the anatomists and the public: the poor were at risk of themselves or their family being subject to post-mortem violence and humiliation and the anatomists faced the threat of riots, violent clashes at graveyards or legal prosecution. The Act was created in response to the issues around and inadequacy of the systems (both official and illegal) of cadaveric supply for anatomists. In 1828 over two hundred members of the Bristol medical community, including all the Infirmary staff, signed a petition to pressure parliament to create a better solution for cadaver supply (Munro Smith, 1917). The main focus of this was that the detailed knowledge of human anatomy required by examination boards and for successful practice could only be attained through dissection experience, which in turn could only be attained through involvement with body snatching, a practice punishable by law. This motivated the creation of a House of Commons Select Committee to address the issue (Knott, 1985).

Despite the compelling reasons of the prosecuted doctors and the burking scandal the Act was originally rejected by the House of Lords in 1829 on the grounds that it lacked requirements for a Christian burial of the remains, something considered unattainable due to the completely destroyed nature of post-dissection remains and desire to remove parts to create preparations (Knott, 1985). It was finally passed after a further case of burking was uncovered in London in 1831, that of Bishop and Williams (Richardson, 1987). The new bill was based on the failed 1829 draft but addressed the desire for Christian burial to be observed (Knott, 1985). The bills final passing was not without objection, with some having the foresight to predict the impact of its failure to ban the sale of corpses creating a trafficking system between poor institutions and anatomists (MacDonald, 2009). The first corpse made available to the students of the Bristol Infirmary through the act was on March 24th, 1833 (Munro Smith, 1917).

The Act relied on the presumption of universal consent unless stated otherwise (MacDonald, 2009), a thinly veiled attempt at offering a choice to the poor as public opposition towards dissection was widely known. The 'opt-out' option was also not widely publicised (Richardson, 1987). The Act also relied on 'unclaimed' bodies to legitimise and legalise the use of these bodies, however this definition was unclear and complicated: claims towards the body were limited to close relatives and had to be made within a two-day time limit from death, regardless of whether they had been informed

(Richardson, 1987). Some corpses were left 'unclaimed' simply because the relatives could not afford the cost of a private funeral, although these situations were recorded as '*indifference*' in order to claim that nobody cared about the fate of the deceased's body (Richardson, 1987). This poverty defined indifference, as opposed to actual indifference, is blatantly outlined in the House of Commons Select Committee report preceding the Act's passing: in London in 1827 whilst 83% of workhouse deaths were officially unclaimed, implying a lack of caring relatives, 76% of them had relatives present at the parish funeral (Knott, 1985).

Richardson (1987) provides several motivations behind the Anatomy Act that question the idea that it was created to prevent further cases of burking after the events in Edinburgh in 1828. The Act benefits the medical community by providing a more adequate supply of corpses and provides protection for anatomists against prosecution for using illegal means to obtain corpses. This was in response to the prosecution of two doctors for involvement in body snatching in February/March of 1828, where previously only the body snatchers themselves were held accountable (p.77). The Act also placed the threat of dissection directly onto the bodies of the poor. Although poor graves were easier to rob and the rich sometimes invested in protective grave measures, everyone was at threat from grave robbing. The Act was an effective means whereby the rich could protect their bodies from dissection. This motivation for the inception of the act is supported by the actions of influential supporters of the act like Sir Astley Cooper, a prolific anatomist and supporter of the act, who went to great measure to ensure that his own body was protected from grave robbing and subsequent dissection.

The Act did little to increase the supply of bodies from those provided by body snatching, which also was not eliminated by the act, and the stigma attached to dissection remained, effectively making being poor as punishable as committing murder (Richardson, 1987). The Act facilitated a legal trade network of corpses, embedded in the welfare system, and proved lucrative for those with power in asylums, workhouses and Poor Law institutions (Hurren, 2004). The act also widened the divide between licenced surgeons and physicians and unlicensed apothecaries as the latter were not allowed to dissect unless under licenced professionals. It also acted as a catalyst in the disappearance of schools outside of hospitals through excluding them from this new supply conduit. The anatomy schools that existed within hospitals could also construct deals with parish authorities to trade beds and treatment for corpses (Richardson, 1987).

Despite being legally established the Act was unpopular, and the trade of corpses was still a covert affair. Mock burials were conducted where a sand-filled coffin was used in the funeral to convince mourners that a proper-burial was taking place, whilst the actual corpse was being sold to the

anatomists (Hurren, 2004). This occurred when the friends and family of the deceased were aware and wished to claim them but lacked the money to pay for a funeral. This charade protected the unions and institutions against upsetting the public and the subsequent political consequences whilst ensuring they didn't miss out on the financial benefits of the trade (Hurren, 2004).

The Anatomy Act may have provided the legal route to the museum for some fragments, but as it mainly provided healthy bodies it does not have a strong presence in the surviving pieces of the museum. It is worth mentioning, however, due to the central presence of the 1752 Murder Act in the collection. The 1752 Murder Act was a key influence in besmirching the reputation of the anatomists, and cemented the punitive perception of dissection. The presence of these displays of crime and punishment in the museum, after the 1832 Anatomy Act was implemented, must have been a powerful reminder that this new legislation viewed the unclaimed poor as deserving of the same treatment reserved for those guilty of committing the most heinous crime.

APPENDIX E: 'CATALOGUE OF MR RICHARD SMITH'S PREPARATIONS' FROM BRO:35893/35/Y.

Smith's Manuscript Catalogue of Preparations, taken from BRO: 35893/35/Y 'Catalogue Of Mr Richard Smiths Preparations'

No.	**Nature.**	**Entry.**
1.	Air cells in lungs of a turtle.	*No. 1 exhibits the air cells in the lungs of a turtle. This specimen is to show the great size conformation in cold blooded animals which {illeg.} the very slow {illeg.} than of atmosphere enables the subject to live so long under water, the same conformation may be seen in the toads lungs No.25: in both the pulmonary arteries have been filled with vermillion - the parts lifted??? And dried after which they are immersed in spirits Of turpentine.*
2	External ear.	*The external ear - to exhibit the vascularity? Of the skin. It was first dried and it was immersed in spirits of turpentine.*
3.	Portion of human intestine.	*Portion of human intestine - to show the valve of the colon and appendix coeci - a square portion of the caecum has been cut away to show the {illeg.} or valve in the colon which is at the lower part of the preparation. The appendix caeci or priapus vermiformes as it is sometimes called is curled up upon the left of the opening. The meseateric arteries have been filled with vermillion. This is the apparatus that prevents the regurgitation of the feces or the prolapse of enemas into the smaller intestines. It has been dried and it is immersed in spirits of turpentine.*
5	Placenta.	*The placenta or afterbirth unravelled and thereby shewn to be made up entirely of a can series of blood vessels. It is suspended by the larger, the smaller may be easily seen all over the outer part of the preparation. The placenta appears to have been previously injected with fene size and vermillion.*
6	Fibula.	*The fibula or small bone of the leg, rendered flexible by an acid and afterwards twisted round a cylinder. This preparation forms part of the analysis of bone, which being composed of earth and menbrane, will upon being immersed in diluted muriatic acid parts with the former and retain the latter, which be then flexible and so soft that hogs bristles may be thrust into it. Hence we learn that they firmness of bone depends upon its earthy particles - see also the two jars with the small bottle marked No.20.*
7.	Spine of a child.	*The spine or back bone of a child. To show the nerves tapering off from the spinal marrow here explored and coloured red with the injection. At the lower part maybe discovered a large bundle of nerve called the Cauda equina from its resemblances to a horses tail - see glass 22 for a fine specimen of the Cauda equina.*
8.	Thigh of a {illeg.}.	*The thigh of a Taebus/Jelus dissected to show the nerves.*
9.	Polypus from femoral artery.	*A polypus from the femoral artery - this was formerly considered as a disease but it was more well known to be merely formed by the coagulated lymph. Of the blood {illeg.} The componant parts of that fluid being spearated by mesh? Into the {illeg.} crassamentum the latter toher on it the form of the parts wherein the coagulation took place. The red particles are removed by maceration which renders the coagulated lymph colourless. Polypus in {illeg.}*

10.	Duplicate.	*A duplicate of the above No.9*
11.	Fetus arm.	*The arm of a fetus dissected to show the nerves.*
12.	Testicle.	*The lymphatic upon the spermatic cord of the human testicle filled with quicksilver.*
13.	Epididymis.	*That part of the human testicle called epididymis, filled with quicksilver, unravelled and dissected to show {illeg.} it is a continuous tube of considerable length although it appears {illeg.} on the testicles to be not above an inch or two long - which may be seen by reference to No. 14 - as one broken down. Glass marked No.4 - in turpentine.*
14.	Testicle.	*The human testicle. It is fastened up on the right hand by the vas diferens which reaches to the lower end at the bottom where it {illeg.} to mount up {illeg.} the epididymis which ends in the vasa efferentia. The latter maybe seen as six or seven lines of quicksilver leading to the body of the testis. a few of the tuberuli seminifere have been filled upon the brown body which is the dried testis there seminiferous tubes maybe beautifully seen in number 4.*
15.	Fetus.	*To demonstrate the progress of ossification in a foetus the month of utero-gestation, the bone suspended by a hair is the occipital that of the bottom of the parietal, the interest as formerly filled by the bloodvessels may be seen very beautifully by holding it up to the light.*
16.	Turtle mesentery.	*Lacteals upon the mesentery of a turtle filled with quicksilver. The mesentery attaches the intestine to the spine and affords a lodgement for the two mesenteric arteries and those vessels which carry the nourishment absorbed in the bowells to the receptaculum chyli Or perquets duct. The membrane here has been dried upon blue papers immersed in terpentine.*
17.	Scrotum	*The scrotum, or purse, to exhibit its septum which divides the testes from each other, the artery maybe seen well filled with red injection. Portions of the scrotum being removed on either side. Hold it upp to {illeg.} in the light.*
18.	Penis.	*A longitudinal section of the human penis to exhibit the pectenous or cant like process {illeg.} The penis is filled with mercury and dried. Upon being cut open the quicksilver escapes and upon the few particles which give it have a glare and shining appearance. The portion of the glans is below and the course of the urethra may be seen as a channel upon the cells imbedded in the portion of the corpus upon giosum once three?? It is in turpentine.*
19.	Lymphacts	*Small specimen of lymphacts upon the surface of the {illeg.} filled with quicksilver, dried and then immersed in turpentine.*
20.	Tibia.	*Two portions of the tibia, the larger bone of the leg injected and submitted to the action of diluted muriatic acid shows the vascularity of bones as the blood vessels may clearly be seen through and in the middle of the bone. See No.6*
21.	Dura mater	*The human dura mater, one of the membranes of the brain, the arteries are filled in red and the veins with white injection. The smooth surface is the outermost, on the other may be seen the {illeg.} which {illeg.} draws between*

		the folds of the cortical substance of the cerebrum. See a better specimen, No, 29.
22.	Candida equina.	*The large plexus or bundle of nerves of the lower part of the spine or back bone called from its resemblance to a horses tail canda equina. The preparation is suspended by a portion of the medulla spinalis.*
23.	Fetus.	*Specimen of the progress of ossification in a foetus. The of uterogestation above is suspended a portion of the pelvis {illeg.} is the temporal bones and lays the os frontis at the bottom. In the upper specimen it will be seen that at this period the ilium has a large edge of cartilage. The ischium has a small point of ossification as the pubis {illeg.} cartilage. In the larger specimen the {illeg.} once occupied by the blood vessels are very well shown.*
24.	Neck of the bladder.	*Has two faces - on one is written the number the word front and on the other reverse. The preperation exhibits the parts about the neck of the bladder. As the lower part hang the vencule semina has cut open to show their cells aboce is the prostate gland cut open and distended with a cross bristle - the two bristles {illeg.} from just above the pericule seminales are in the ducts of those bags and lead into the verumon tumor caruncle as may be seen by turning the preparation to the other side marked "reverse" where they maybe observed coming out the same orifice. Just below these bristles is the narrow neck of the bladder below which is a portion of the internal part of that visens. About midway its surface are seen two bristles which appear lost/last in the substance: they mark the entrance of the ureters, the two bodies which carry the urine fom the kindneys - they pass through the coats of the bladder obliquely which prevents regurgitation, the {illeg.} may be observed coming out on either side below from a part of the tube.*
25.	Toad lungs.	*Exhibits the air cells in the lungs of a toad, the particular conformation of which enable the animal to decompose atmospheric air so slowly that he can live a great length of time under water, se also No.1 - it is in turpentine.*
26.	from {illeg.}.	*A excrescence removed from the {illeg.} of a woman by the late Mr Godfrey Lowe AD 1800. Patient did well and was discharged the Infirmary in a fortnight. No. 28 is another but less - in spirits.*
27.	Penis.	*A transverse section of the penis which had been previously filled with quicksilver and dried. This suspended by a thread which passes through the great vein upon the {illeg.} near the which may be observed other smaller veins and the arteries. It is the presence of these veins against the penis? Which contributes greatly to the continance of erection, by preventing the return of the blood and consequently keeping the parts loaded. Just below them and on either side are the corpus cavernosum and at the bottom is the cavity of the urethra surrounded by the corpus spongiosum urethrae {illeg.}{illeg.}*
28.	{illeg.}.	*An enlarged and elongated {illeg.}. Mr J.P. Noble from the {illeg.} - the patient was well in a few days. A.D. 1800 No. 26 a larger spec in spirits.*
29.	Pia mater.	*The {illeg.} membrane of the brain called Pia Mater… see No.21 for the description in spirits.*
30.	Umbilical cord.	*The umbilical cord or naval string filled with quicksilver, the larger vessel is the vein, the two smaller which encircle it are the arteries. The red appearance is from a little blood being left accidentally in the vessels. The naval string forms*

		the medium of connection between the mother and child in the womb. The red vitae blood passes to the child by the vein and returns to the mother by the two arteries in a black exhausted state, forming an exception to the general law upon that subject.
31.	Rat penis.	*The penis of a rat, filled with quicksilver. The shape and disproportionate size of the glans which hangs down, are worth observation. The glans was filled by the great vein running from between the two corpora caernosum, and the two last from the {illeg.}. The spongiosum urethra appears like a {illeg.} on the otherside and had it communicated with the glans as is the case in the human subject, it must have been filled with mercury. In turpentine.*
32.	Fatty tumour.	*A fatty tumor removed by the late Godfrey Lowe and given me by his son Mr. Richard Lowe. In Spirits.*
33.	Kidney with calculi.	*A human kidney with two calculi in it. The smaller is in one {illeg.} and the larger {illeg.} the capit of the {illeg.} the part which receives the urine and pours it into the ureter. Belonged to the late Godfrey Lowe and given me by his son Mr Richard Low, in spirits.*
34.	Child's hand.	*A child's hand injected to show the vascularity of the cutis vera. No.55. Is the same thing in the foot. The quantity of cutaneous arteries render them almost massed of redness? In {illeg.}.*
35.	Glans penis.	*Shows the cells of the glans penis, the red shots upon the other side mark the ends of the corpora cavernosa where they join the glans.*
36.	Child mandible.	*The lower jaw of a child at about seven or eight months after birth, the whole infantile teeth may be seen through the transparent jaw and the arteries ramifying through the gum may be observed very finely upon four incisors in front of the preparation, at the roots of the two outer incisors lie the two cuspidate and imbedded further back in the jaw are the four molares or guidons, two on each side.*
37.	Hydatids.	*Specimen of hydatids of various size, they were all inclosed in in one large sac, or hydatids attached to the mesentery close to the intestine called colon in a subject opened by Mr. Richard Smith Junior (added afterwards) when an apprentice at the Infirmary AD 1794 from the same subject as No 38. 40.41. The liver and {illeg.} part of the intestine were loaded in spirits with them.*
38.	Hydatids.	*Specimen of hydatids from the same subject as No.37, 40, 41. In this the large sac is preserved and several hydatids maybe seen filling its cavity, others have fallen to the bottom. On the left may be observed the intestine and portion of the illium. It was in the collection of Mr. Godfrey Lowe and given by Mr Richard Lowe at his fathers decease to Mr. R. Smith - in spirits.*
39	Phalanx.	*A phalanx of one of the fingers, injected and rendered transparent by being immersed in diluted muriatic acid (see No.6) so that the vascularity is clearly apparent. By the side of it is suspended an injected tendon with its arteries - the preparation is to show that bones are more vascular than tendons.*
40.	Hydatids.	*Specimen of hydatids in the liver from the subject No.37.*

41.	Hydatids.	*Specimen of hydatids in the bile duct in which they appear tinged/lodged/twisted, in the liver of the subject No.37.*
42.	Iris (eye).	*The iris of the human eye suspended by one of the straight muscles - it is to show that the iris is vascular, the arteries may be traced from all the circumference and by the help of a slap may be discovered freely {illeg.}{illeg.} with each other. The space in the centre across which no vessel passes is the pupil. The iris (the back part of which called by the older anatomists uvea) divides the anterior from the posterior chamber of the eye being placed in the centre of the aqueous humour - N.B. the cornea transparent appears to have been dried with it.*
43.	Tympanum .	*The tympanum or drum of the ear with its bones - the membrane being shown to be highly vascular. The subject was about BLANK old the meatus auditorius is not formed yet, but they tympanum is cordoned by a bony circle.* *The bone in which it is situated is the temporal seen at the upper part. The 4 opicula auditus are visible convered in arteries, the stapes or stirrup is suspended by a thread - part of the incus or anvil, may be seen attached to and stretching the tympanum, the malleus or hammer is just above it, the orbiculare, the smallest bone in the body, is not discernable it was probably torn off in displacing the stapes.*
44.	Uterus.	*The uterus in the human subject slit open longitudinally to show the cavity in an unimpregnated state. The bristles are passed into the fallopian tubes from the body of the womb, at the lower part of which maybe seen hanging into the vagina a semiglobular body with a smooth surface this is the os internus, sometimes called os tincae, (from its resemblance to the mouth of a tench), and os uteri. By holding up the preparation the perforation maybe observed whence the catamenia are discharged, and through which when properly dilated the child passes. The frimbride have been cut off from the ends of the fallopian tubes - the cavity immediately above the os tincae covered {illeg.} is sometimes called the cavity of the cervix - in contradiction to the eye above which is the trass cavity of the womb.*
45.	Bear's kidney.	*Specimen of a conglomerated kidney. This is a bear's - every one of the cluster is a distinct kidney having a branch of the emulgent artery - a vein - {illeg.} and a pelvis, there is a cavity {illeg. Possibly: 'common to all'} to which is attached the ureter - one gland or portion is at the bottom of the glass.*
46.	Fetus	*A fetus in the BLANK month of uterogestation it is intended to exhibit the viscera - it was formerly in Mr. G Lowes collection but given to me by Mr. Richard Lowe. The sternum and integuments of the abdomen have been removed at the upper part on either side of the lungs, having the heart between them (the pericardium being removed) - immediately under the above viscera in a transverse dissection runs the diaphragm, the part which separates the thorax from the abdomen. The large smooth body in the centre is the liver, the right and left lobe are visible but not the third or lobulus spigelii. Below are the intestines coiled up in the usual manner.*
47.	Fetus.	*The fetus at about the fifth month of utero gestation dissected to exhibit its anatomy. From Mr. Godfrey Lowes collection, made for him by RS when his apprentice in 1793 - and given back by Mr Richard Lowe. The bones of the cranium and face are easily distinguishable, the fontanelle also at the the top. A bit of bristle is passed under the {illeg.} of the heart and bristles are introduced from the aorta in to the two subclavia and two carotid arteries between which*

		may be seen the trachea and thyroid cartilage. A portion only of the liver is kept in its place by a bent horizontal bristle. Three vessles are seen projecting one from the lower part of the liver and the other two from the loins meeting in a point close to the glass. The first is the umbilical vein - the other two the umbilical arteries, the vessels which keep the communication in the placenta and even further. In the loins just above the hip bones are two other bodies, they are the kidneys, two bristles pass from them and meet in the bladder just above the pubis. These bristles represent the course of the ureters being actually passed along a portion of the lower part. The two small roundish bodies near but rather above the bladder are the testicles not yet descended into the scrotum. One upper and one lower extremity have been dissected to show the cartilaginous ends of the bone, in the fetus.
48.	Teres or round worm.	*Specimen of the worm found in the human intestine called Teres or round worm. When exposed they generally burst and the ovarium protrudes which is the case here {illeg.} the appearance of young ones.*
49.	Tania or tape worm.	*Specimens of tania or tape worm, all differing somewhat in appearances, 60 is a finer specimen than either of these*
50.		
51.		
52.	Guinea worm.	*Specimen of the guinea worm, called vena medimensis, or dracunculus, found in the legs of a sailor upon the coast of Africa. This extracted by lassing hold of the head and fastening it to a piece of stick, round which the animal must be wound daily about the eighth of an inch at a time till the whole is extracted, if it breaks the animal escapes and produced great inflammation. No. 149 is a much larger specimen.*
53.	Lymphatics on turtle liver.	*Specimen of lymphatics upon the {illeg.} covering of the liver in a turtle. It is dried upon the paper and in turpentine.*
54.	Eel gills.	*The bronchial artery filled in the gills of an eel - the circulation of the blood in fishes is very peculiar, the gills answering the purpose of lungs wherein the blood which has been robbed of its oxygen particles and has become unfit for the support of the frame by passing through the various parts of the body is again renovated; there parts having the laver of deciphering water or at least of taking up from it the requisite quantity of oxygen. The work of the latter in distilled water is the cause why fish cannot live in it*
55.	Cutis vera of child.	*The cutis vera or true skin of a child for it is intended to show the great vascularity of that part - the arteries maybe observed to be numerous that these should appear almost as one mass. No. 34 is another dried and in turpentine.*
56.	Ulcerated cancerous breast.	*Mary Serjeant, aged 34 from winterbourne. An ulcerated cancerous breast case. This disease had been of long standing when the woman applied to the infirmary on the 3rd/1st of July 1799, and although this ulcerated gangrenous surface was very considerable as there were no diseased glands in the axilla it was determined to remove it. Mr Richard Smith performed the operation and*

		the woman went well. It has been about eight years after the operation when she came to complain that the other breast pained her a little; she then desired to come again if it did not subside and as she never returned it is probable that she found nothing further of it, the cicatrix from the {illeg.} avoid all loss of such, she was largely free from disease. *On the reverse side may be observed a cavity which communicated with the upturned? Parts. It has a piece of thread passed through it, some hydatids may also be observed, one large and has the cavity distended by a bristle. This case returns to law of Dr. Ad{illeg.} specimen of repleating cancer which he considers as a mass of hydatids.* *It was one of the worst cases which the writer ever saw succeeded by operation, and is valuable by showing that is possible.* *In the year 1789 upon going to bed she felt a pain much like that of a knife passing through it. It continued to be very small when the pain deceased she discovered a small tumour. It increased very slowly with a constant pricking, about six months before the operation it ulcerated. It was operated upon three days after her admission.*
57.	Ulcer.	*Demonstrated the vascularity of an old ulcer.*
58.	Villous coat of turtle stomach.	*Exhibits the villous coat of the stomach in a turtle, the other coats maybe also seen tolerably well at the cut edges.* *A specimen of No. 59*
59.	Turtle intestine.	*The {illeg.} of coagulated lymph thrown out in the intestines of eight? Animals - this is in the turtle. It has been stripped off from the upper part of the preparation. It exhibits also a good view of the ramifications of the mesenteric arteries.*
60.	Tonia or tape worm.	*A very large specimen of the tonia or tape worm - 49, 50, 51 are other specimens.*
61.	Fetus.	*Demonstrates the progress of ossification in a fetus in the BLANK utero gestation, the upper bone is {illeg.} parietal, the lower, one portion of the os frontis. The intestines once filled by the arteries may be very well seen by holding up to the light.*
62.	Turtle gullet.	*The gullet of a turtle; it is inverted and is remarkable for the papula or spicula which prevent the regurgitation of the food, but the chief use of the preparation is to show the difference between the upper and lower end of the gullet, the lower part of which is very vascular and probably {illeg.} to the stomach in the formation of gastric fluid.*
63.	Child femur.	*The femur or thigh bone of a child aged BLANK. It has been fractured and exhibits a good view of the formation of new bone which has considerably increased the size of it. The extremities are still covered with a considerable quantity of cartilage, but in the centre of each there has been absorption and bony deposit, the ends are more vascular than the centre and the cancelli in the centre of the bone are scarcely formed. (pencil: to be A52)*

64.	Cuticle from child's foot.	*A preparation called podotheca from BLANK, it is the cuticle or scarf skin of the foot in a child, which has been very elegantly separated from the rete mucosum and cutis vera, and preserved entire. The cuticle is insensible and inorganised having neither blood vessels, nerves or lymphatics, but is marked by the corresponding figures of the cutis vera and the nail; which are an appendix to the cuticle and {illeg.} with it. (pencil: to be B73)*
65	Ossification in foetus.	*A very beautiful specimen of the process of ossification in a foetus. The os sacrum is terminated by the cartilagenous coxycc the points ossification are loaded with arteries and form the center of the several pieces. The broad illium is likewise edged with cartilage and there are boney deposits in the ischium and pubis but the head and neck of the femur may be observed to be at present one entire mass of cartilage the former/femur rests in its natural bed the acetabulum. One thread is fastened to the last of the lumbar vertebra, a second to the ilium and the other to the pubis. (pencil: to be A54)*
66.	Ossification in foetus.	*Shows the progress of ossification in a foetus in the BLANK of utero-gestation it is suspended by the foramen ovale and has the femur hanging from the acetabulum, the head, neck and chondyles of the femur are cartilagenous, the pubis and acetabulum wholly so, and the ischium has only one point of ossification. (pencil: to be A57)*
67.	Ossification in foetus.	*Specimen of the progress of ossification in the BLANK of utero gestation. The temporal bone is suspended and at the bottom of the bottle is a humerus, a scapula, a clavicle and a rib.*
68.	Oyster beard.	*Exhibits the blood vessels in the beard of an oyster. The beard is the lungs of the animal performing the same office as the gills of a fish, mainly the decussation of water from which the beard has the power of absorbing the vital principles and renovating the blood which in oysters is colourless. The cavity in the centre having two small black bristles in it marks the situation of the heart, see No. 54.*
69.	Ascaradis (rectal worm).	*A specimen of the small worm found in the intestinum rectum called ascaradis, from the greek words BLANK, turn the bottle up. (pencil: to be B44)*
70.	Child's penis.	*The preface of a boy exhibiting a specimen of a natural phimosis, so as to prevent the uncovering of the glans penis. (pencil: to be C56)*
71.	Femur, callus formation.	*A transverse section of a portion of femur after amputation or compound fracture, exhibiting a specimen of the substance called callus which the absorbents afterwards remove when the arteries are prepared to deposit bone in its place in order to restore firmness to the limb.*
72.	Mandible in child.	*Section of the lower jaw in a child of sixteen months old, to exhibit the state of dentition at that age. The two milk incisors and the first molars have passed through the gums. The two other molars may be seen imbedded in the gums, and the cuspidates, the latter is uncut and lying between the lateral incisors and*

		first molaris. On the side below the milk incisors may be seen the permanent incisors in considerable forwardness and immediately above the permanent incisors is the rudiment of the permanent cuspidates, the nerves may be observed running close to the fangs, they are derived from the inferior maxillary branch of the fifth pair or the gemini. The upper jaw of this subject is described at no.80 and it will be observed that the progress is nearly alike in both. *(In margin: No. 73 has no glass to protect it.*
74.	Intestine of a turtle.	*A specimen of the fine network form of the villous coat in the intestine of the turtle. The different coats of the intestine may be seen pretty distinctly upon the cut edge, and the ramifications of the mesenteric arteries upon the back part of it. The object of this network is to increase the surface for the absorption of nourishment/replenishment from the food.*
75.	Animal femur.	*The longitudinal section of the thigh bone in a young animal. Several arteries may be seen distinctly among the cancilli, also in the point of ossification in the extremity and likewise in the circumjacent cartilage, dried and immersed in turpentine. (pencil: to be A53)*
76.	Child mandible.	*Section of the lower jaw bone of a child about six or eight months old, the lateral incisor is cut and a portion of the bicuspids has made its appearance, the three molares, or grinders, are seen imbedded in the jaw and also the nerves which pass in at the fangs of the teeth. These nerves derive their origin from the 5th pair or trigemini and are called the inferior maxillary. Under the bicuspids and incisor teeth may be seen the rudiments of the second set.*
77.	Cancerous eye.	*A cancerous eye (pencil: to be C/D 19)*
78.	Femoral artery and vein.	*The femoral artery and vein of a subject who died a month after amputation. Oct, 1810. Mr Lowe's patient, belongs to the same subject as the specimen of a femur with the exfoliation.*
79.	Femoral artery.	*The femoral artery of a subject who died one month after amputation. The vessel having been stretched with needles, the {illeg.} rusts and the whole preparation is stained. There is artery low down {illeg.} off it here thread through it,*
80.	Child's maxilla	*Section of the upper jaw exhibiting the progress of dentition in a child at 16th months, the incisors and first molars have passed through the gums, internally near the root of the milk incisors maybe observed the permanent one in considerable forwardness, and just below the latter the rudiment of the bicuspids, in the front between the fangs of the lateral incisors and molaris which are cut lies the bicuspids as yet a considerable distance under the gum which latter is filled with red injection. The under jaw of this subject is described at No.72 and it will be observed that the progress is nearly the same.*
81.	Femoral artery.	*The femoral artery of Monis/Mavis/Monss Morgan, a Soldier who died the fourth day after the amputation. 21 March 1805, Mr Robert Lax's patient*

82.	Child maxilla.	*Section of an upper jaw, marks the progress of dentition in a child of sixteen months old. The central incisor of the first set has attained its growth, the lateral has not quite disengaged itself from the gum, and the first molaris is upon the point of piercing through that substance, the vascularity of which is pointed out by its redness. At the root of the first molaris may be observed the cuspidates still imbedded and below the molaris (which is piercing the gum) lie the two other molares, the pulp (which is over its formation) may be distinctly seen at the roots of the last molaris.*
83	Femoral artery and vein.	*A femoral artery and vein. The subject aged 15 died the sixth day after amputation 1808.*
84.	Uterus.	*A portion of the human uterus slit open and exhibiting a polypus at its base, the two bristes which meet near it mark the fallopian tubes the {illeg.} and ovaria being removed.*
85.	Femoral artery.	*Femoral artery, one month after amputation.*
86.	Polypus	*Disease of polypus removed from a boy 1812 by Mr. Richard Lowe. (pencil: to be C/d 21)*
87.	Cutis vera..	*A piece of the cutis vera of a negro to show the {illeg.} the substance by which the blackness of the skin is occasioned.*
88.	Lymph.	*Elongated and enlarged lymph?*
89.	Lymph.	*Is another of the same description (pencil: to be C/d 31)*
90.		*Another specimen by accident then is a subject of this number*
90.	Naval rupture.	*A specimen of naval rapture by accident this is a duplicate of this number (pencil: to be C60)*
91.	Tumour.	*A tumor removed by Mr Godfrey Lowe, given to me by his son. (pencil: to be C125)*
92.	Fatty tumour.	*A fatty tumor removed by My Godfrey Lowe and given to be by his son*
94.	Cancerous glans penis.	*A cancerous glans penis (pencil: to be C16)*

95		
96.	Cancerous glans penis.	*Cancerous glans penis (pencil: to be C18)*
99.		*Specimen shows a young {illeg.}xx*
100.	Clitoris.	*Diseased {illeg.} and clitoris. It was removed by Mr Daniel at the Infirmary {illeg.} 1813. It was not larger than a{illeg.} beginning in the clitoris and continues so for a {illeg.} a half hence it extended when she married and became pregnant and in ten months increased to present size.*
101.	Spina bifida.	*A specimen of the disease called spina bifida (pencil: to be B77)*
109.		*Search for this amongst papers - osophagunder {illeg.}*
110.	Strangulated scrotal hernia.	*Demonstration of the parts in strangulated scrotal hernia or rupture. This preparation is suspended by four threads of these the two lower are attached to the inferior portion of the oblique muscle of the abdomen where the abdominal ring is situated. The upper suspend a portion of the intertrium colon to which is attached a portion of omentum or Caul the lower portion of which has passed the ring and appears in front on a mass of fat or fatty membrane immediately below or under that mass of Omentum lies a fold of intestine, which in the omentum forms the contents of the sac. The sac itself is better seen by turning the preparation to the reverse, the front part having been cut away to shew the strangulated parts. On the reverse side the two ends of the intestine belonging to the strangulated fold are seen where previous to division, the communicated with the parts in the abdomen. The testicle is seen hanging by the spermatic cord 3 or 4 inches below the lowest part of the seminal sac demonstrating clearly that it is not at all concerned in common rupture. The tumica vaginalis is opened and shows the body of the testis covered by the tumica albuginea.*
111.	Schirrous breast.	*A schirrous breast removed by the writer's father at the Bristol Infirmary March 1775. The patients nname was Eliz Derran aged 51. She discharged quite well.*
113	Hydatid placenta.	*An hydatid placenta, the hydatids are very distinct and numerous, forming altogether a very elegant specimen.*
114.	Schirrous mamma.	*A schirrous mamma, it has been ulcerated above the nipple, the whole gland has been removed by a corridor/ cut and or incision and very little of the skin has been saved.*
115.	Fatty tumour.	*A fatty tumour removed by Mr Richard Lowe 24 Oct 1812. From the shoulder of Mary Webb, a servant, Sir Lormell Esq?, the {illeg.} subject was in her 39th year,*

		it weighed 2lb 3oz, the wound was still healed and the patient went from the Infirmary well. It began the size of a pea fourteen years before the operation.
116.	Ovarious dropsy.	*Specimen of ovarious dropsy. The distended ovary occupies nearly the whole of the glass being attached to the uterus by fallopian tube. The uterus has been slit open, the other tube and ovarium are undiseased.*
119.	Testis.	*A disease of the testis, a portion is cut out and lies at the bottom of the glass to exhibit a view of the internal organisation. Just above the cut portion maybe observed the vas deferens and the spermatic cord. A part of the scrotum has been removed with it and at one edge may observed an ulceration.*
122.	Human eye.	*The human eye, a portion of the circumjacent parts injected. The preparation is intended to show the puncta lacrimalia, the orifices which convey the tears to the nose, they have bristles passed into them, between them lies the body called caruncula lacrimalis. The cornea transparens appears like a dark circle, but the cornea opaca is covered with arteris. Overleaf. On the reverse may be seen the six muscles of the eye and the artery, the optic nerve has as well passed over it but the part mose worthy of note is the lacrimal duct upon the left, where the ends of the two bristles maybe seen emerging which had been passed by the puncta in front. It is dried and in turpentine.*
123.	Cutis vera.	*Specimen of the vascularity of the cutis vera, the cuticle is removed and it is in spirits.*
124.	Eye.	*Contains two preparations of the human eye, they are both suspended by the optic nerve. In the upper one the whitish expansion of the optic nerve called Retina is folded back upon the choroid. Upon the latter may be seen the vasa vorticosa. In the lower one the retina hangs in a bundle, a glass will discover upon its surface several blue veins. The vascular choroid coat lies behind it loaded with vessels. Some arteries may also be traced very distinctly upon the lower blue part. They are in spirits.*
125.	Eye.	*Contains two preparations of the human eye. The upper one is suspended by the optic nerve immediately below this may be observed a loose fine tunic of a brown colour in streaks. This is the choroid or second coat of the eye. The streaks mark the vasa vorticosa mentioned in No. 124. Where the brown choroid has been removed the reina or expansion of the optic nerve may be seen and within these two coats is the vitreous humour, at the lower part lies the chrystalline humour or lens. The lower preparation has a thread passing through the christalline humour, encircling which are the brown ciliary processes, underneath hangs the vitreous humour and a cut edge of the retina maybe observed round the upper part of it. The are in spirits but not injected.*
126.	Ox's eye.	*Two injected preparations of an ox's eye in turpentine. The upper one exhibits the Iris and Cornea lucida. The former forms the oval opening through which the latter is observed. The lower preparation shews the blood vessels upon the choroid coat, they are in turpentine.*

127.	Ox's eye.	*Two preparations of the ox's eye, in spirits. The upper one exhibits the oval iris, the cornea transparens having been cut away. The lower one shows the retina, or expansion of the optic nerve, which here covers the choroid coat, the parts being inverted. A large artery may be observed upon it.*
138.		*See below fourth number.*
128.	Choroid coat of eye.	*The choroid coat of the human eye, suspended by the optic nerve. The red vasa vorticosa and the blue veins are very apparent. (pencil: to be B75)*
142.	Lymphatics on lungs.	*A specimen of the square appearance which the lymphatics assume upon the lungs, a conformation less liable to injury from the sudden expansion and collapse of an organ than any other.*
145.	Thickened cuticle.	*A specimen of thickened cuticle, exhibiting the number of layers of which it often consists, one layer is peeled down. (pencil: to be B76)*
138.	Aorta.	*A portion of Aorta, with a bit stripped down to exhibit the vasa vasorum, or those arteries which supply the coats of the blood vessels with that fluid which as animal substance they require like other parts. (pencil: to be b69)*
149.	Guinea worm.	*Specimen of the vena medinensis, Dracunculus or Guinea worm, which are extracted from the legs of sailors coming from the coast of Africa. The head appears like a little black spot, it is taken hold of and tied to a quill, it is turned round every day until the animal is entirely drawn out, if the animal is broken it will produce excessive inflammation and uneasiness until it makes its appearance in another place.*
153	Turtle eye.	*I do not understand the anatomy well of this, it appears to be a turtles eye, the upper part seems to the bony ridge, and the body in the centre the chrystalline lens. In the lower preparation the cornea lucida appears to have been stripped down in order to explore the bony ridge of which that hung above is a detached specimen from another eye. The iris on that side of it called uvea may be seen on the other side of it.*
159.	Worm.	*Specimen of the worms found in the stomachs of frogs, about the beginning of Autumn, heatviscus? Has been injects and they continued to adhere to the villous coat. It was sent by Mr E. Jenner of Berkley to the writer's father.*
160.	Fetal heart.	*Exhibits the foramen ovale, or valve in the fetal heart between the auricles. The glass is numbered upon the side which corresponds with the right auricle whence the blood has an easy passage into the left.*
164.	Pig intestines with hydatids.	*The intestines of a pig with a large quantity of hydatids attached it.*

165.	Scrotal hernia.	*Specimen of the sac of a reducible scrotal hernia, it has no contents but shows that the hernia sac has no connection with the testis, of the latter a very good and natural view is exhibited. The tunica vaginalis has been slit open and the black bristles keep the lower portion from the body of the testis, above the smooth globular testis runs in a transverse direction the epidydimus. The reverse exhibits bristles passed into the spermatic vessels and the vas deferens which is suspended by a thread.*
166.	Spina bifida.	*The disease called spina bifida.*
167.	Ulcerated larynx.	*The larynx or windpipe in a state of ulceration. The preparation is suspended by a portion of the palate from which hangs down the uvula. The glottis is ulcerated off but the epiglottis remains pointing upwards to the uvula. On the reverse two strings are attached to the Os Hyoides below which maybe seen the thyroid cartilage and gland. The green colour is probably produced by the solution of the erago formed upon the pins used to separate the os hyoides from the thyroid cartilage.*
168.	Penis.	*A longitudinal section of the penis exhibiting very perfectly the left corpus cavernosum, its artery is also very distinct running down the centre of it. The canal of the urethra through which the urine passes is well shown. On the reverse lie one corpus cavernosum and half the glans, the cavernous bodies and spongiosum urethra appear to have been filed with quicksilver which has been suspend afterwards to {illeg.} it is in turpentine.*
170.	Lusus naturae chicken.	*A lusus naturae of a chicken with two supernumerary legs which appear to be attached to the sternum, the wings may be observed upon the back and the legs below them, but there seems to be some displacement of the parts, the eggs which produce these monsters have generally two yolks. (To be A.70)*
171.	Lusus naturae monkey.	*A lusus naturae of a monkey with three supernumerary legs. (to be A 68)*
172.	Lusus naturae kitten.	*A lusus naturae of a kitten having attached to its sternum four supernumerary extremeties. No 227 exhibits a preparation very much resembling this in a human subject. (to be A 69)*
173.	Lusus naturae pointer puppy.	*Lusus naturae of a pointer puppy with only three legs.*
174.	Lusus naturae kitten.	*A lusus naturae of a kitten completely double in everything but the face (pencil: to be A67). A portion of the abdomincal covering commonly both has been removed exhibiting the heart in situ. This is well worthy observation both here and in the next where they are dissected. It will be seen that these monsters are devoid of lungs and that the pulmonary artery usually forms the aorta of the*

		supernumerary corpse. Given it that the monent the funis/fundus umbiliculis is divided and the foetus becomes a breathing animal it must necessarily perish; having no apparatus to replenish the blood, hence we cause the cause of their death. In this case the pulmonary artery is clearly? Seen coming from the right ventricle and passing down the spine of the body on the right side whilst the aorta supplies the left.
176.	Lusus naturae pig.	*A lusus naturae of a pig, a portion of the abdomen is here removed (as at No.174, to which refer) and it will be seen to answer the general law of the pulmonary artery being the aorta of the supernumerary, it will here be seen crossing the spine and running to the left. (pencil: to be A66). The aorta has been cut off, it has a black bristle in it and may be known to be that vesse; by its giving? Off the carotids and subclavians on either side of the trachea, the other black bristle marks the other part of the vessel communicating with the left ventricle. The long white bristle is passed into the superior vena cava, on the left lie a few folds of intestine and at the bottom appears a large liver common to both.*
177.	Schirrous mamma from spaniel.	*Schirrons manna from a spaniel bitch belonging to Mr Richard Smith - he removed it AD 1780. The animal had been severley bitten by a cat two years previous to its excision, it nearly eight ounces. The animal recovered perfectly. (To be C/d 13)*
180.	Strangulated scrotal hernia.	*Demonstrates the anatomy of the parts in strangulated scrotal hernia. The scrotum has been slit down in front, the testicle lies distinct at the bottom, the sac and its contents are above the latter are seen behind the cross bar of brass? To hold open the preparation {illeg.} consist of a fold of intestine and some omentum the whole adhered in a mass from inflammation. The reverse of the glass shows the cut ends of the bowel etc and the back part of the sac.*
183.	Intussusception in intestine.	*A specimen of that twisting of the intestine called intussusception, this preparation was from the body of a dutch boy poisoned by arsenic, a portion of the intestine is removed to exhibit a teres worm which has been caught in the folds. (to be B48)*
184.	Suppuration on heart.	*A case of suppuration upon the surface of the heart, the preparation is suspended by portions of the lungs. Part of the right ventricle is removed and the aorta is slit open, both exhibit portions of coagulated lymph, usually known by the name of polyphi.*
185.	Schirra heart.	*A schirra heart, a portion is removed to show the internal disorganisation.*
186.	Female reproductive organs.	*A pelvis to demonstrate the female organs. Below are the external parts surrounded by the labia pudendi. The part resting upon the pubis is the urinary bladder to which is attached the umbilicus. The red body beyond and above the bladder is the uterus from which pass on either side the fallopian tubes having the ovaria lying above them. Beyond the uterus is the rectum lying upon the os sacrum. (pencil: to be A5) The two tubes which have bristles in them are the ureters. By turning the preparation to the side a view may be attained of the os*

		ilium, ischium and acetabulum, the great bundle of nerves may also be seen below the Ilium.
187.	Diseased testis.	*A diseased testis, the tunica vaginalis has adhered to the tunica albuginea very generally except where a threat suspends it. On the top are the spermatic cord and the vas deferens, the latter is the smaller.*
188.	Femoral artery aneurism.	*An aneurism of the femoral artery, the aperture maybe observed near the top. The broad expanse upon the right is the sac. It burst and the patient sunk instantly. Upon examining the body another sac was found upon the aorta close to the superior mesenteric {illeg.} clearly the constitutional disposition to the disease, the aorta is in No. 217.*
192.	Distorted spine.	*Exhibits the state of the bones in distorted spine. Jane Isaac, at 8 Years, May 1770, Dr. Rigge's patient. Died two years after she first began to complain of pain in her back, she had other malady and walked about the house to the last minute of her life. (to be B79)*
193	Skull portion.	*Specimen of {illeg.} have liss. The ossa palata and part of the upper jaw are wanting so that the turbinated bones are distinctly to be seen, two bristles are passed into. The reverse exhibits some of the nerves and a bit of bristle is passed through the pituatary gland.*
198.	Eye.	*The human eye suspended by the optic nerve to exhibit its coats, the white folds, in the middle is that expansion of the optic nerve called retina wherein exists vision, the brown one is the choroid or bloodvessel coat, and the outermost one is the sclerotica, better seen by turning round the preparation.*
203.	Horse embryo.	*The embryo of a mare in a very early period of utero-gestation (after-conception) some of the integuments being removed the right lungs, the heart and liver are easily discernible, the latter is very large which is usually the case in the foetus.*
208	Cartilaginous substance.	*A cartilaginous substance removed from the knee joint.*
210	Foetal tooth pulp.	*The pulp or membrane which forms the tooth. This specimen is from the jaw of a foetus in about the 6th or 7th month of utero-gestation, the points of a molaris may be seen upon the membrane and the arteries may be traces very distinctly and beautiful upon the latter.*
211	Omental hernia.	*An irreducible omental hernia, it adheres very strongly to the spermatic cord, its communication with the parts in the abdomen maybe observed upon the other side of the preparation. The testes with the tunica vaginalis slit open lies below what any communication with the diseases, this was probably discovered after death, as it might have existed in its present state for years without occasioning any inconvenience or requiring any surgical assistance.*
212.	Trachea.	*A division of the trachea, the razor did not happen to wound any blood vessels of consequence and the patient did not die, until he was destroyed by the constitutional effects of the invitation? This/it affords a good view of the*

		anatomy of the wind pipe. It is suspended by the {illeg.} of the Os hyoides, below that bone lies the thyroid cartilage and below the latter the evicoid or annular cartilage. Part of the glottis is kept open by a bristle and the epiglottis is above the opening pointing upwards between the cormun of the Os hyoides.
214.	External female sexual organs.	*The external parts of an old female subject. The large passage below the vagina having two bristles placed horizontally, the meatus urinarius has a bristle passed into it. The projecting body about an inch above the meatus is the preface of the clitoris. From this point go off two bodies, these are the nymphae nata, the left is of usual size, but the other is very much elongated, brought forward and fastened to the indendum. The reverse of the preparation exhibits at the upper part the diverging crura of the clitoris, the meatus urinarius and the cavity of the vagina.*
215	Diseased tibia.	*A diseased tibia from which the carious portion had been removed with a saw, to reduce the limb to a state of compound fracture, in the hopes that a new deposition of bone would be take place, at the expiration of the patient died of confluent small pox and the union was found to be only ligamentous as the preparation exhibits, the carious portion removed is amongst the bones marked. The case was Mr. J. P. Nobles A.D. at the Bristol Infirmary, an account is published of it in BLANK.*
217.	Aorta with aneurism.	*An aorta having an aneurismal sac near the superior mesenteric, this is from the same subject as the femoral aneurism No BLANK which see. That part of the aorta which has a piece removed is the side nearest to the spine, the origins of some intercostal vessels may be observed and immediately behind the sac the two emulgents, the arteries going to the kidneys. On the other side above the sac is the coeliaca and above the bifurcation into the iliacs at the lower part of the preparation is the inferior mesenteric.*
218.	Uterus with polypus.	*The Uterus with a polypus attached to the cavity of it. The womb is slit open and retained in that portion by two pieces of quill. The lowest black bristle marks the polypus. The two other pass into the fallopian tubes, which may be seen passing on either side, terminated by their {illeg.} and attached to the ovaria.*
221.	Disease of mesenteric glands.	*A disease of the mesenteric glands called ague-cake (from web: a form of enlargement of the spleen, resulting from the action of malaria on the system.) In front is a portion of the ilium slit open.*
222.	Dissected toad.	*A dissected toad, the lungs are the two red bodies hanging down in front. Near the lower part are the ovaria of a dirty brown colour and the intestinal canal forms the white convoluted bodies lying behind.*
223.	Cutis vera.	*A specimen of cutis vera. Its injection shows it to be vascular and exhibits the surface upon which are spread the extremeties of the nerves and blood vessels. The cuticle and its appendage the nail are removed, the beautiful? Form of the furrows are worthy of remark.*

224.	**Cancerous tongue.**	*The cancerous tongue of governor Johnstone who died at the Hotwells.*
226.	Polypus uteri.	*Specimen of Polypus Uteri. The womb itself is slit open and retained so by two horizontal bristles, two perpendicular ones pass through the cervix into the vagina. The polyphi are three in number one large one hanging down in the centre and two smaller on the left hand, just beside the smallest polypus is one half of the os tincae, the other half lying near the cervix of the largest polypus. The vagina is slit open and spread back to give a view of the disease.*
227	Monstrous birth.	*A monstrous child, born at Bedminster AD 1788. The foetus was at its full term, the head presented and the labour was not at all prematurely protracted. The inferior extremities are attached by the pelvis and two supernumerary arms to the thorax of the first. The integuments are taken away behind some bristles passed into the vessels etc, but the writer is unable to give any description of the internal oeconomy.*
228.	Polypus uteri.	*A very fine specimen of polypus uteri. The polypus is in front and has dragged the os uteri (marked by a globule of quicksilver) quite forward. A large portion of the disease has been cut away for want of room in the glass. A bristle marks the meatus urinarius above which appear the nymphae and clytoris. The reverse exhibits the fallopian tubes filled with quicksilver, and the ovaria or egg baggs.*
229.	Knee with spina Ventosa.	*A specimen of the disease called spina ventosa, or white swelling of the knee joint. The lower part is the head of the tibia to which the fibula is attached. The end of the femur is above and the patella is lifted up and suspended by two threads. The joint has been injected. The absorption of the cartilage is very apparent by the red appearance of the bony/long particles in its neighbourhood. The disease appears to have been making considerable progress*
230.	Childs head with tumour.	*A childs head with a large tumour underneath*
231.	Monstrous birth.	*A monstrous human foetus at its full time. There was nothing worthy remark in the labour, the woman was the wife of a butcher who fancied she had been frightened by the puppy of a bull bitch in her possession.* *This is a specimen of the maleformation called hernia of the brain, the bones being wanting in the back of the head and the cerebrum protruding not unlike ears. The case is sometimes called 'the maltshot? Head'. The front, the heart, right lung, diaphragm and large {illeg.} cake of the liver may be observed; and a part of the integuments having removed behind, another portion of the lungs and diaphragm together with the left kidney and a few folds of the intestine are visible.*
234.	Foetus, 10 or 12th day.	*The rudiments of a fetus at so early a stage of utero gestation as the 10th or 12th days contained in the amn membrane. The parts are not officially developed to be pointed out, the mass appearing merely as opaque upon adhering to the side of the membrane.* *The age of these fetuses are by no means well ascertained.*

235	Membrane for envelopment of foetus/	*the membrane for the envelopment of the fetus. This suspended by the one called chorion from its numerous blood vessels, being a mass of little else, at the lower part is attached a portion of the amnious membrane, the fetus has escaped and was lost. It is probably at the sixth week of utero gestation or after conception.*
236.	Foetus, 8 weeks.	*A fetus as the 8th week of uterogestation, the parts are sufficiently developed to be perfectly distance, the head is/ or usually happens disproportionately large. The parieties of the abdomen are removed to exhibit the viscera but they can scarcely be identified.*
237.	Ovum, 7 weeks.	*An ovum or fetus and its membranes. This is probably at about the 7th week after conception or as it is usually denominated utero-gestation. On the outer convex side is the brown mass of blood vessels called chorion, which is internally lines with the smooth amnious membrane, within which is contained the child, the large head lies to the left. The trunk occupies the centre, the extremeties are not yet formed though something of a beginning is apparent about the thighs.*
238.	Foetus, 3 months.	*The fetus at about 3 months after conception or utero-gestation. The integuments of the thorax and abdomen have been removed to exhibit the viscera, a bristle passes horizontally over the heart and lungs immediately below which lies the diaphragm or midriff. The liver occupies almost the whole space below having attached to it and passing down between the thighs of the foetus, the umbilical chord or naval string. (to be A.31)*
339.	Foetus, 9/10 weeks.	*A fetus 9th or 10th weeks.* *Duplicate it was dilated about three inches from the arms.*
239.	Rectal polypus.	*A polypus from the rectum of a female, the patient had laboured three or four years under the complaint and was reduced exceedingly and was emaciated, the AD 1806 she applied to Mr. J. P. {illeg.} with when lax arrived her. Her complaint was ascertained without difficulty and a ligature was passed around the small base in the middle of the tumour, the polypus came away in four days and in a week the subject began to mend and perfectly recovered {illeg.}.*
240.	Placenta.	*Placenta or after birth (to be Aa44)*
241.	Foetus, 3 months.	*A fetus at about 3 months after conception. It exhibits in situ heart and lungs having a bristle passe horizontally over them. The liver is removed to exhibit the capsula renales, lying above, and much larger at this period than the kidneys. The two small bodies above the grocius are the testicles. (to be A30)*
242.	Foetus, 11 weeks.	*Exhibits the size of a foetus eleven weeks after conception. The pericles of the abdomen have been removed, but nothing is shewn distinctly. (to be A33)*

243.	Foetus, weeks.	9	*Exhibits the size of the fetus at about the 9th week after conception (To be A37)*
244.	Ovum, weeks.	8	*An ovum, exhibits the fetus at about the the 8th week after conception. (To be A35)*
245.	Ovum, weeks.	6	*As ovum or fetus and its secundenies, the preparation has been injured by carriage, it may however still be made out. By holding it between you and the light an opaque spot may be observed about the size of the swan shot, this is the child or the rudiments of it. This at only the 6th week after conception, the shaggy membrane which envelopes it is the chorion, the pellucid one or blaccer the amnios.*
246.	Ovum, weeks.	6	*An ovum or foetus enveloped in its secundines, hold it up to the light. It is suspended by the amnios membrane, a pellucid looking bladder, below which hangs the chorion, or membrane of the blood vessels, looking shaggy and rough. About a quarter of an inch below and on one side of the place from whence it is suspended, maybe discerned an opaque spot as big as a crow shot, this is the embryo, or rudiments of the foetus, the parts are as yet an indistinct mass being at about the 6th week after conception.*
247.	Foetus, weeks.	7	*A fetus from negro parents at about the 7th week after conception, it appears quite a rudis indigestaque moles (a rude and disordered mass), through the separation between the head and the body, together with the rudiments of the extremities are discernible. A portion of the funis or naval string is attached to the abdomen, as the colour of the negro depends upon the rete mucosum, a pigment placed between the cutis vera and cuticle, this preparation shows that it exists at a very early stage of existence.*
248	Foetus, months.	4	*A foetus at the 4th month after conception, a horizontal bristle passes over the heart and lungs immediately below lies the liver and the thumbs of the fetus point to the intestines coiled up in their usual position. The fumis or naval string hangs down between the knees, the head has been opened perpendicularly and exhibits the cavities occupied by the right hemisphere of the cerebrum and the right portion of the cerebellum.*
249.	Foetus, months.	5	*A fetus at the 5th month after conception. The heart rests upon the diaphragm or midriff having the lungs on either side, bristles are flattened between the auricles and ventricles of it. Just above the heart lies thymus gland, the only part contained in the anterior mediasteum, the {illeg.} is not know.* *Immediately below the diaphragm lie the right and left lobes of the liver, below which are the intestines coiled up in their natural state.* *The head was carried off by a rat when under preparation (To be A25)*
250.	Foetus, months.	5	*A fetus at about 5 months after conception. The most prominent parts are the heart and the two lobes of the lungs, the latter divided by a horizontal bristle. Above the heart may be seen the great blood vessel called aorta, giving off the right carotid artery, which runs up to the head and the right subclavian which passes to the axilla or armpit, the arteria innominate from which arise the left carotid and left subclavian arteries on the right run the parvagum or 8th pair of nerves coming from the head and passing down the neck to be distributed to the viscera. The large perpendicular body in front is the trachea or windpipe.*

		The diaphragm or midriff is cut away. *Below the heart is a bristle pointing downwards, it is passed into the vena cava and goes into the right clavicle.* *Down the spine or back bone runs the aorta dividing just above the urinary bladder into the two iliac arteries.* *The kidneys are seen very large, lying flat on either side the back bones. Their ureters, the canals which carry off the urine, pass over an horizontal bristle on their way to the bladder, which is a round body just between and at the lower end of them.* *The testicles not yet descended to the scrotum have bristles placed under them.* *The brain has been removed but the parts are not so well seen as in some other preparations.*
251.	Foetus, 6 months.	*A fetus at about the 6th month after pregnancy. The reverse section has been made through the pericranium one of the head and carried on through the dura and pia mater and cerebrum. The parts fall back and exhibit a good view of the lateral ventricles. The two loan bodies in the upper part are probably the plexus choroides.* *The front exhibits a good view of the heart covered by its pericardium together with the right and left lobes of the lungs, the line between them is the anterior mediostinosum.* *The diaphragm or midriff remains and the liver having been removed, by holding up the preparation the orifice of the vena cava going to the right auricle maybe discerned. The stomach also remians, the phyloric orifice pointing to the right kidney.* *The thumbs of this preparation point to the testicles in their situation above the {illeg.}.*
252.	False conception.	*A mole or false conception. The amnious membrane in which it was enveloped hangs below transparent having attached to the upper part the fumis by which it was fastened and inosculated with the placenta. It appears casphored of cuticle {illeg.} - cutis vera- cellular and adispose substance enclosing above on the lower side is an {illeg.} - it was found amongst the afterbirths of a full time fetus by Mr. J. P. Noble AD 1791, given by him to Mr Thomas Brichanden/Richards and by that Gentleman to Mr. Shin{illeg.}x in London AD 1794.*
253.	Foetus.	*A feotus about {illeg.} months after conception. Exhibits a back view of the thoracic and abdominal viscera. The lobes of the lungs are on the upper part hanging down from the shoulder blades to the elbow, the medulla spinalis is bare and its nerves may be seen on the left passing over a perpendicular black bristle. The viscera near the right elbow is the liver, near it is the appendix vermiformis or coeci running over a bristle placed cross ways, immediately above the appendix is the right kidney, separated from the capsule renalis by a bristle pointing towards you.* *A portion of the head has been removed but exhibits nothing distinctly.*

254.	Foetus, 5th month.	*Is dissected on both sides. This the fetus of a black which the features independently of the colour caused by the rete mucosum indicate. (TO be A27) Infront: the sternum and cartilage of the ribs are well shewn, also the two clavicles which are perfect bone at a very early period. A black bristle is placed into one of the vessels in the umbilacle chord, above which lies the liver, exhibiting a very large convex surface. The intestines are coiled up underneath it in their natural situation.* *On the reverse* *The head has been opened and the two cavities of the lateral ventricles are exposed.* *On the left side are seen the cartilaginous ends of the scapula or shoulder blades. Ilium or haunch bone and the cartilaginous deposits on the spine of the back bone.* *On the right the ribs have been removed and the back part of the viscera are seen in the following order (keeping close to the back bone).The right lung, the capsula renalis, the kidney, and folds of the intestines, on the other side near the right elbow, touching the lower part of the lung and reaching to the intestines is the liver.* *The right ilium is removed, probably in the 5th month.*
255.	Tibia from compound fracture.	*A portion of tibia from compound fracture. It was removed seventeen days after the accident, above is a splinter of same bone, Goldyers case. {illeg.}*
256.	Ovum.	*An ovum slit open, the amnious membrane and attachment of the umbilacle funis are shewn.*
257.	Ovum.	*The perfect and unbroken ovum, at about the BLANK after conception, the choroid cast is everywhere presented to the eye. The amnious and the foetus being situated internally.*
258.	Ovum.	*An ovum, exhibits the Foetus as about the BLANK after conception, a little shapeless mass half way down upon the right of the preparation.*
259.	Ovum.	*An ovum at about BLANK after conception. The thick part has been cut open and exhibits the foetus and amnia membrane, the head of the foetus has fallen to the bottom of the glass*
260.	Ovum.	*A portion of an ovum at BLANK after conception. (to be A44)*
261.	Fatty tumour.	*A dissected fatty tumour removed by Mr Godfrey Lowe and given to me by his son. (to be C24)*
264.	Bladder and uterus.	*Part of the venica/renica and uterus? Of a female aged 18. A patient of Mr J.P. Barjew. From the bladder suspended by a thread is seen a fibrous excrescence which {illeg.} frequent expression of urine (for which she would never allow the catheter to be passed) and produced such general inturbence in the system that in two years the subject died. The preparation is suspended by the fundus uterus.*

265.	Foetus, 12 weeks.	*Exhibits the size of a fetus at 12 weeks after conception. The viscera are exposed, a bristle passes across the heart and lungs, below which lie a bundle of fibres which the liver is composed, under this are the futes tunis.*
268.	Foetus, 11 weeks.	*A foetus at about eleven weeks after conception attached by the funis or naval string to the the secundines or after birth.* *The ovum has been turned inside out by which means the thin bladder like amnious membrane appears externally.*
269.	Foetus, 4 months.	*Shews the size of the foetus at about the 4th month, the viscera are exposed. In the thorax or chest lie the heart having the lungs on either side. The liver has been removed. The aorta passes over a bristle just at the point where the emulgent arteries are given off, 3 or 2 bristles are thrust between the capsulae renales and the kidneys.*
271.	Foetus, 6th month.	*A dissected foetus, it is at about the 6th month after conception. The two hemispheres of the cerebrum have been removed to shew the falx of the dura mater. It maybe observed attached to the upper part of the cranium and hanging loosley down in the shape of a seether (a type of pot) .* *The two lobes of the cerebellum are perfect and covered by that part of the dura mater called the tertorium below this running down the back bone is the spinal marrow. The BLANK is pinned back, the costoe or ribs being cleared of their integuments the viscera are seen in the interotices. At the eleventh costae the lungs are seen resting upon the posterior part of the diaphragm or midriff and the twelfth on either side touch the kidneys, at the end of the spine to the left of the black bristle is the rectum, the last of the intestines.*
272.	Foetus, 6/7 months.	*A foetus at about the 6th or 7th month dissected. A large portion of the cranium and the whole of the cerebrum and cerebellum are removed.* *Bristles are passed into several foramena marking the egress of the nerves. The two upper black ones mark the optic, the nerve of vision expanded in the eye into the retina.* *The two parts below, white, are the ocular orum/ovum motores distributed to the straight muscles of the eye. The intermediate bristles probably the pathetici, the trigeminium abductores, auditorii, and the last marked is the 8th or par vagum.* *This nerves may be traced down the neck by the side of the right carotid, passing over the right subclavian artery and expanding/expending itself upon the viscera of the abdomen.* *On either side of the pericardium maybe seen a nerve, that on the left runs over three black bristles, it is the 3rd pair of the neck (a spinal nerve) comes out between the 3 & 4 cervical vertebrae forming with other small {illeg.} the phrenic expends itself upon the diaphragm on the left side horizontally across the carotid artery just as it enters the head is the pharyngeal branch of the parvagum and sympathetic.* *On the right side, over a bristle runs the fourth cervical running towards the axilla to be distributed in the 5th, 6th, 7th cervicals and 1st dorsal to the several parts of the arm.* *The lungs are removed, by the heart is seen lying within the pericardium supporting the thymus gland, the use of which is unknown.*

		The diaphragm is exhibited covering the upper or convex side of the liver from the lower part of which the umbilical vein emerges and meets the two umbilical arteries at the naval which is here preserved. *The fibre passing from the naval to the top of the urinary bladder in the trachus.* *The futis tenes are coiled up in their natural order and the testicles are in the groin just above a couple of bristles.*
273.	Fetus, 8th month.	*A dissection of a foetus at about the 8th month. A portion of the cranium being removed a view is given of the internal parts of the skull but nothing is seen sufficiently distinctly though the nerves may be observed in a confused state.* *The large cavity in the forehead was ocupied by the anterior and {ILLEG.} below by the middle, lobes of the Cerebrum. In this preparation the injection appears to have been thrown by the umbilical vein and in consequence both veins and arteries are of a red colour. In front runs the trachea or windpipe and on either side the two carotid arteries the right having a black bristle in its upper portion.* *The large red vessels are the jugular veins, which under the clavicles form the subclavian and terminate the superior or descending vena cava.* *The coronary arteries ramify very beautifully upon the surface of the heart; the auricular of which are separated from the ventricles by perpendicular bristles, on either side of the heart lie the lungs.* *Below these in the shape of an arch is the diaphragm or midriff a muscle which separates the thorax from the abdomen.* *The large red body near the left hand is the liver with the naval string or umbilical cord attached to it and twisted round the subject's arm merely to hold it out of the way.* *The aorta and vena cava inferior or ascendens are exhibited running dow the spine and dividing in the iliacs.* *The two large oblong bodies on either side are the kidneys from which passes (over an horizontal bristle) the two ureters. Above the kidneys are places the capsula renales.* *The urinary bladder is distended just above the heel of the right foot, on either side is a black bristle these are placed down the umbilical arteries, which after birth dwindle into ligaments, they are in an unnatural position and so is the bladder. The body (tied with a ligature) about the size of a bean above the bladder is the rectum, the uterus with its appendages are stretched out horizontally between the bladder and rectum.* *The psoas muscles are dissected on either side; they pass from the loins towards the thighs.*
274.	Foetus, 7 months.	*A foetus at about the 7th month after conception. The back part exhibits a view of the {illeg.} of the skull. On front are demonstrated several nerves. The trachea or windpipe ends where the aorta begins. The part hanging down into the abdomen is the asophagus or gullet the stomach is cut off at its cardiac orifice.* *On the left of the preparation is seen the par vagum or 8th pair of nerves running from the head down the neck and aorta as far as the coeliaca artery where it joins the great semilanar ganglion formed by the two intercostals. The other is the same.* *A small branch off the par vagum passes round the aorta and goes up to the trachea.* *On the right the par vagum sends a large trig to the osophagus.*

		On the right of the preparation in the {illeg.} of a black bristle may be observed the sympathetic nerve, receiving branches from the intercostal, a curved bristle marks the spot where it communicates with the semilanur ganglion. *The subject is a female, the vertex of the bladder has been removed so the its internal {illeg.} may be seen. Above the bladder, stretched across is the uterus and its appendages and behind them is the rectum.* *The white patches I suspect to be an imperfect attempt to form spermaceti. The subject had been many years in spirits and AD 1794 was dissected by Mr F. C. Bowles.*
275.	Foetus, 6 months.	*A fetus at about 6 months after conception, to exhibit the cartilaginous state of the processes of the spine, the scapula and ilia. The kidneys are marked by bristles and the other viscera may be seen through the ribs.* *The occipat, or os occifitis, forming the back part of the head is well demonstrated its ossification is of course imperfect, its pericranium has been removed.*
276.	Foetus.	*A foetus at about BLANK months after conception. In the natural state the head is generally downwards and pressing against the Os tincae or Os internum. The transparent bladder in which the child rests is the amnios membrane wherein the waters are contained. This is ruptured previous to the birth most commonly. The large, flat, brown mass behind is the chorion a large congenies of vessels formed by the two umbilical arteries and the single vein. The naval string here passes around the neck of the child which often happens, without any thing unpleasant arising. All of these constitute the after birth or placenta.* *The flat side is the part which adheres to the uterus, but the circulation of the foetus and placenta are independent of the mother so that by suffering the naval string to bleed after its division you merely empty the large vessels of the placenta, the mother loses not a single drop.*
278.	Foetus, nearly full term.	*(to be A17) A foetus in the uterus at nearly its full time. The subject concealed her pregnancy and perished in the streets, the body was taken to St Peter's Hospital where the child was felt moving for several hours but the writers Father, at that time one of the surgeons to that institution was not sent for until too long a time had elapsed that there was no prospect of saving the foetus by the caesarean section, which might and ought otherwise to have been performed.* *The uterus is cut open by a crucial incision, the child is exhibited in its natural situation, the head pressing upon the Os internum or tincae. Below the latter hangs a portion of the vagina through which here has been a longitudinal incision and the piece turned up to exhibit the mouth of the uterus.* *The latter is about the size of a little fingernail and appears closed by an opaque membrane. The umbilical cord or naval string is twisted around the wrist? And a fold hangs just above the left eye. Near the right shoulder hangs an ovarium slit open and near the feet is the other in its natural state attached to the fallopian tube by a ligament.* *The reverse.* *Exhibits a back view of the child's position in the right corner (of the preparation) just below the toes a portion of the foot may be observed, between which and the childs right wrist is the naval string. It very soon terminates in the body of the placenta or after birth.*

		The cut parts of this substance are turned back and maybe distinguished from the portion of uterus by their darker colour. On the right side (of the preparation) it has been somehow separated from the uterus and there is a cleft between them. *The thin membrane which floats from the inside of the placenta is the amnious, which encloses the waters enveloping the child.* *The muscular fibres of the uterus and its strength are worthy observation.*
280.	Abscess in liver.	*Appears to be an abscess in one of the lobes of the liver, but the writer knows nothing of the case neither is there any mention of this among his fathers papers.*
281.	Aneurism of femoral artery.	*Aneurism of the femoral artery. This is the first case ever operated upon according to Mr Hunters plan in the Bristol Infimary.* *The subject was a BLANK at the bottom of St Michaels Hill near King David.* *The tumour extended high up in the thigh the sac is opened on the inner or under side near the femur. The ligature was placed just under the profunda branches, as the {illeg.} of the arterial system were not then so well understood and it was deemed of importance to preserve them. This operation was well performed and there were no embarrassing circumstances. The subject died in a few days from constitutional effects without any haemorrhage or apparent change in the limb.* *The writer's father invited {illeg.} all the practitioners of note in the city to see him operate and the room was more full than on any former occasion. The writer laments that his fathers notes are lost and he was himself too young in the profession to be aware of its importance.*
285.	Diseased kidney.	*A diseased kidney, on one external surface there appears to have been an abscess.*
286.	Inverted stomach.	*An inverted stomach apparently diseased but the writer knows nothing of the case removed from the glass.*
288.	Diseased bladder.	*A disease of the bladder, the upper part appears in a state of sphacelus. Below hang the two ureters, having bristles passed into them. A fibrous excrescence appears below attached to the inner coat, just above the neck. The prostate glands is divided. On the convex side of the preparation is a tube which passes into a quantity of muscular fibre on the inside is a bristle passed into some orifice. The former I do not understand, the latter probably marks the entrance of an ureter.*
290.	Diseased testis.	*A disease of the testis in Isaac Smith aged 22, admitted to the Bristol Infirmary, May 18 1778. From Preston Wiltshire. Contained?? The part in getting upon a horse and fainted?, he took no further notice of it, in a short time it began to swell, he became thirsty, restless with great pain especially at night, in twelve month is increased to the present size.*

291	Umbilical or naval rupture.	*A specimen of umbilical or naval rupture.*
292	Diseased stomach.	*Apparently a diseased stomach.*
293.	Acetabulum and caput femoris.	*A biscare? Of the acetabulum and caput femoris. The cartilaginous lining of the former has been exfoliated.*
296.	*PAPER RIPPED*	

E.a: Governor Johnstone

In Smith's catalogue (BRO: 35893/35/y) entry No. 224 reads:

'The cancerous tongue of Governor Johnstone who died at Hotwells.'

George 'Governor' Johnstone (1730-1787) was a controvesial character who began his career in the Royal Navy, achieving success as post-captain, before being appointed Governor of the colony of West Florida in 1764. In 1767 he was removed from this post after inciting warfare between his colonial forces and the North American Creek Indians, on returning to England he became a member of parliament for Cockermouth in 1768 and acted to support the East India Company in this role (Fabel, 2008). He returned to North America in 1778 as part of the Carlisle Peace Commission before being dismissed after accusations of bribery but was granted the post of commodore in 1779 before returning to parliament in 1781 and becoming a director of the East India Company in 1784 (Fabel, 2008). He died in Hotwells, Bristol in 1787 (Fabel, 2008) and a post-mortem was performed on him by Dr. Andrew Bain who describes several tumours in the lymphatic glands of the neck alongside the appearance of the tongue:

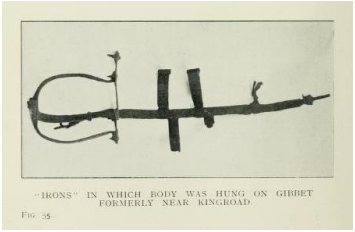
> *'Every muscle belonging to the tongue was annihilated, and formed an entire schirrous mass. The back part of the tongue had been consumed in great part by erosion, what had formed a contraction that altered its whole natural appearance, and left if of an irregular triangular form, of a watery aspect and by no means a bad resemblance to a turtle's heart.'*

(Royal College of Physicians of Edinburgh Catalogue: CUL/1/2/2068)

Bain's description of the post-mortem does not allude to how the tongue ended up in the possession of Richard Smith. Johnstone's tongue was included in the museum as it was the primary location of his affliction, however his reputation as a ruthless and destructive orator (Fabel, 2008) make this an even more appropriate representation. Speculation suggests that the potent symbolism of the cancerous tongue of a merciless debater may have caused Smith's desire for it. The journey that the fragment took between the post-mortem and the museum is undocumented and Dr Bain is absent from Smith's written work. A relationship may have been facilitated by their shared profession, they were both present at a meeting of the Bristol Institution for the Advancement of Science, a highly exclusive scientific lecture society formed in 1823 (Neve, 1983), in March 1825 (Bristol Mirror, 1825). involvement with freemasonry in Bristol, Smith from 1817 (Munro Smith, 1917) and Bain from at least 1790 (Money, 1993).

APPENDIX F: CONTENTS OF THE MUSEUM DERIVED FROM OTHER SOURCES.

Inclusions in the Museum from Other Sources.

Names	Description	Source
Hydatid	A large hyatid taken from the right ventricle of a woman that, when opened, contained eight or ten smaller hyatids. Given to Smith by Mr. William P. Broderibb.	**SMITH, R. (1838) 'Hyatids of the Heart'** ***The Lancet, 30(778)*****: 628-629** *'Both these preparations are in my museum deposited at the Infirmary, and open to the inspection of all professional and scientific persons, who will favour it with their company. Of course it is to the liberality of my Wiltshire friends that I am indebted for these valuable presents, and I am happy in this opportunity of returning my thanks to them thus publicly.'*
Hydatid	Two bags of hundreds of d found attached to the peritoneum of a new born, given to Smith by Mr. Charles. Bleeck.	
Skeleton of Maria Davis	Hanged on April 12th 1802 on the gallows on St Michael's Hill for Infanticide. Davis had left her child on Brandon hill to die, aided by Bobbett. Their bodies were taken to the Infirmary, followed by a large crowd and placed in the Board Room. Here the characteristic cross-shaped incision (for murderers) was make on their chest's and an anatomical demonstration was delivered.	**MUNRO-SMITH. G. (1917)** ***A History of the Bristol Royal Infirmary*** **Page 268**
Skeleton of Charlotte Bobbett		
Irons for hanging body on gibbet	A case of fratricide by Captain Samuel Goodere of his brother Sir Dinely Goodere. Goodere kidnapped his brother and ordered two men, Matthew Mahony and Charles White, to strangle his brother. All three men were sentenced to death and were hanged at the St Michael's Hill Gallows on April 15th, 1841. Goodere's body was delivered to the Infirmary, opened up and displayed to the large crowd that had followed him there and then delivered to the friends in the evening. Mahony was hung in chains at the Swatch at the mouth of the River Avon, these irons are now in the infirmary museum.	**MUNRO-SMITH. G. (1917)** ***A History of the Bristol Royal Infirmary*** Page 267-268  "IRONS" IN WHICH BODY WAS HUNG ON GIBBET FORMERLY NEAR KINGROAD. FIG. 55.
Head cast of Mary Ann Burdock	Mary Ann Burdock was convicted of murdering a widow, Mrs. Clara Ann Smith, lodging at the house she kept. Smith died after becoming ill and was buried in St. Augustine's Churchyard. Suspicions arose about Burdock's subsequently increased wealth and when combined with statements from two girls who had been hired to look after Smith led to the exhumation of Smith's corpse fourteen months after her death. Upon investigation it was discovered that Smith had died from yellow Arsenic	**MUNRO-SMITH. G. (1917)** ***A History of the Bristol Royal Infirmary***

	poisoning and Burdock was hanged at the jail on the New Cut on April 15th 1835.	
	Smith himself wrote a letter to the Lancet on the phrenology of Burdock. In the letter he attempts to destroy her character in multiple ways, saying she was a habitual liar, street-walker and showed no remorse in court. He presents the phrenological analysis of Burdock and her character. A cast of Burdock's head was procured for his museum.	SMITH,R. (1835) 'Phrenological Developments of the Late Poisoner at Bristol' *The Lancet London: A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health and News,* 2: 276-277
Skull of Eliza Balsum	Smith retained the calvaria of Balsum, showing the trephination.	MUNRO-SMITH. G. (1917) *A History of the Bristol Royal Infirmary*
Skeleton of John Horwood		MUNRO-SMITH. G. (1917) *A History of the Bristol Royal Infirmary*
Book of John Horwood	Book detailing the case notes and bound in Horwood's own skin.	On display in the M Shed or accessible as a scanned copy in the Bristol Records Office: BRO: 35893/36/v i
Rope and gown of John Horwood	Collected by Smith during the transportation of Horwood's body.	MUNRO-SMITH. G. (1917) *A History of the Bristol Royal Infirmary*
Bust of John Horwood	A plaster cast was taken of Horwood when in the dead house.	MUNRO-SMITH. G. (1917) *A History of the Bristol Royal Infirmary*
Milk Teeth	Smith's own milk teeth affixed to a card.	MUNRO-SMITH. G. (1917) *A History of the Bristol Royal Infirmary*
Parrot		
Heart of Sheriff Yeamans.	Hung in the reign of Charles I,. 1643, by Fairfax for attempting to deliver the city to Prince Rupert and which had been converted into spermaceti. Taken by Smith from a lead coffin found during building works in 1814, the body was very well preserved.	(Western Daily Press, 1936)
Specimen of the fully grown Siamesely-conjointed twins.	{spelling from article}	(Western Daily Press, 1936)
Clothes and remains of Patrick Cotter,	the Irish giant, failing to acquire the actual skeleton after he was buried under 12ft of rock to escape the same fate as Charles Byrne	(ANON, 1937) (Watson-Williams, 1937)
	Cast of the hand of the Irish Giant, items of clothing including a shoe and a stocking.	(Fisher., 1905)

Collection of calculi.	Well arranged and clearly catalogued, second to none. Nearly 900 individual calculi, 421 of these were removed from the human bladder and 204 of this 421 from infirmary patients. The pride of the museum, forming the subject of two scientific papers published by Smith.	(The Belfast Daily Mercury, 1856) Dr Budd's address at the opening of the museum (Bristol Times and Mirror, 1860)

APPENDIX G: THE BRISTOL ROYAL INFIRMARY PATHOLOGICAL SPECIMENS COLLECTION

G.a: Fragments from the Bristol Royal Infirmary Pathological Specimens Collection that were once in the collection of Richard Smith Junior.

Preparations linked to Smith from the Bristol Royal Infirmary Pathological Specimens Collection.

No.	**Nature.**	**Description.**	**Catalogue.**
GP4	Tibia diaphysis, osteomyelitis.	Presented in an unsealed plastic container. There is an inscription on the sequestrum, reading '1775'. The involucrum almost fully covers the sequestrum on one side, it is almost completely exposed on the other. The involucrum is very irregular in texture and is separated from the sequestrum in places. The exposed seqestrum shows signs of degradation as there are irregular lesions in the bone.	Chronic osteomyelitis of tibia with involucrum formation. This is an old specimen of a condition that one does not see nowadays, thanks to improved methods of treatment. It is the tibia of a child and the condition began, almost certainly, as an acute staphylococcal osteomyelitis. It would seem that they upper, rather yellow, part of the shaft had its periosteum attached and may have been viable. The rest of the shaft is dead and constitutes a sequestrum: it has a worm-eaten appearance as a result of partial absorption of the dead bone. The rough casing of bone on the outside of the sequestrum is called the involucrum and is laid down by the raised and inflamed periosteum. Holes running through the involucrum communicated with sinuses in the overlying skin and pus discharged through them. These holes in the involucrum are called cloacae. An osteomyelitis will not heal as long as any sequestra are present and in less advanced cases than this it would be feasible to do a sequestrectomy, relying on the newly formed periosteal bone to reconstitute the shaft.
RA3	Tibia and fibula	Complete shafts of both bones, missing all epiphyses except for the partial proximal tibial epiphysis. The compact bone is thin and the fibula exhibits signs of inflammation that has led to several sharp crests, an uneven surface texture and areas of fine-porosity. It has been inscribed with the words: '*A specimen of fragillits or molllities ossium'* and '*It will float on water'* among other illegible words.	*Tibia and fibula. This specimen, which is a very old one and without a history, has been labelled: - fragillits or molllities ossium; the former name is not now a pathological entity. In Mollities ossium, or osteomalacia, there is a gradual destruction, without inflammation of the cancellous tissue with consequent enlarging of the medullary cavity, which becomes filled with a soft, fatty material. The compact tissue is at the same time thinned and the bone bends or breaks with great ease. This specimen and the next would answer fairly well to this description, apart from the medulla, which has disappeared in preparation. But there are two other considerations in this case. There are signs in the first place of inflammation on all three bones, especially the fibula, which can have nothing to do with mollities ossium, and it may be they are examples of atrophy from disease, compare specimen No 6 and in the second place this change sometimes takes place as the result of senility.*
RA4	Long bone diaphysis	Part of a long bone, cut at one end and shattered at the other, the cortex is very thin and the bone is light. There is an illegible inscription on the shaft.	*Tibia. For description see no 120 (RA 3).* *Fragilitas ossium. The cortex of the bone has been reduced to a thin shell, the medullary cavity being correspondingly enlarged. Written: inscribed by Richard Smith 'fragilitas or marllites (?) ossium. It seems to be simple osteoporosis*

RA6	Skull, hydrocephalus.	This specimen has been mounted on a wooden plaque. The tooth eruption pattern is indicative of a child of 9±3months (Buikistra & Ubelaker, 1994). The individual exhibits a small face, with cranial expansion. The bones of the cranium are very thin, with a rippling and creasing pattern on the parietals. The frontal and parietal bossing is indicative of this condition (Murphy, 1996). There is a large triangular gap between the parietals on the posterior skull. There are several holes in the frontal and frontal bossing has led to orbital deformity. The word 'hydrocephalus' has been inscribed across the frontal.	*Hydrocephalus. This antique skull is from a child of about six months with hydrocephalus. One of the characteristic changes it shows is the way the orbital roofs have been pushed downwards. This gives rise to a characteristic eye deformity seen in the plaster cast. This specimen was repaired and remounted in November 1967. Its origin is not known, but the writing on the forehead is similar to that seen of specimens from the 1830s.*
RC34	Distal tibia	This specimen exhibits very finely porous reactive bone growth. The proximal shaft exhibits longitudinal striations. The periosteal bone growth has a porous, coral-like appearance and is distinguishable from the hole-ridden cancellous bone at the distal end (dead?). There is an inscription on the proximal shaft: '*N 354. Sarah White est 11. December 21. 1793. Mr Allard*.' The specimen is presented in a sealed glass jar.	*Tibia. Lower end is carious and has several pieces of necrosed compact bone buries in a new periosteal deposit, and in their neighbourhood there is a good deal of rarefying osteitis. The specimen involves the ankle joint; in many ways it is more suggestive of tubercular disease than anything else; it would be difficult to say whether this began in the Tibia or spread to it from the ankle joint, having started in one of the bones of the foot. The original note in an old catalogue under carionecrosis was, - Sarah White, aged 11, admitted to the infirmary on Dec. 21st. 1793 and operated on a few days afterwards by Mr. R. T. Allard. She had suffered from a bad leg for 2 ½ years and showed other marks of scrophulous diathesis. She did well.* *Lower end of tibia – chronic bone infection. Several areas of necrosed compact bone buried in periosteal new bone formation. The history suggests that the infection was of tuberculous origin, stating that the patient showed "other signs of scrophulous diathesis". The amount of new bone formation is against this diagnosis, but may be accounted for by secondary infection with other organisms via sinuses, a common occurrence in those days (1793).*
RC35	Distal femur, tibia, fibula, talus and	The knee and ankle joint have become ankylosed. Osteomyelitis of the tibia. The sequestrum is visible through the porous involucrum and several	*Necrosis of the lower end; the suppuration in this case has been long continued, and a mixed result has taken place – Rarefaction in some situations, sclerosis in others and deposit of new bone. The upper cut section of the bone shows sclerosis of the spongy medullary bone.*

	calcaneus.	large flakes of dead bone have been tied onto the specimen to show the exfoliation. There is a brown-black area on the most proximal flake, markedly different from the white colour of the rest of the bone. There appears to be partial epiphyseal fusion on the distal femur, proximal tibia and distal tibia and no fusion on either epiphysis of the fibula, suggesting that the individual was under 14 years of age (Buikistra & Ubelaker, 1994). Consultation of the accompanying volumes confirms that she was 12 years old. There is an inscription on the femoral shaft: '*No. 351. Mary Herbert, age 12. November 1790. Mr R. Smith's patient.*' Presented in a sealed glass jar.	*Tibia. Extensive chronic osteomyelitis involving the entire shaft. The knee joint and ankle joint are ankylosed. There is extensive sequestration and large flakes of bone are being exfoliated from the subcutaneous aspect of the bone, there was obviously an extensive ulcer here, the blackened area of bone forming part of the floor of the ulcer. There is very little new bone formation. This variety of osteomyelitis which used to be known as acute necrosis is seldom seen nowadays (date 1790).* *Bones of the lower extremity. Note made by Richard Smith: Subject, Mary Herbert, aged 12, Nov. 6th 1790. The motion of the knee and ankle joint being lost, large exfoliations appearing on the Tibia, and that bone being very extensively diseased, the limb was amputated directly after admission. The stump healed well, after a small exfoliation has come away.*
RC41	Distal femur, osteomyelitis	Seems to form a complete left femur with #RC 41 (74), the pathological growth appears to match and the presence of the same type of string near the potential separation site also indicates this. The involucrum envelops the proximal shaft, with a smoother surface on the anterior. The growth on the posterior shaft is larger, extends further down the shaft and contains several cloacal openings, exposing the medullary cavity. There is no separate sequestrum. The distal epiphysis surface is not present, although some of the underlying trabecular bone is. There is an inscription on the	*Femur. Necrosis of diaphysis, extensive and very irregular deposit of new bone with cloacae. This beautiful specimen is of historic interest. The Subject was Sebastian de Chamours, (written: or l'amour?l), chasseurs Brittanique. The limb was removed by Mr Gresley Emery, July 10th 1814. This was the first amputation at the hip joint performed in England. Mr Emery had been educated at the Bristol Infirmary.* *Femur: chronic osteomyelitis. (amputation by disarticulation at the hip). In this bone there is necrosis of the diaphysis to form a sequestrum, and there is extensive and irregular deposit of new bone with cloacae. This beautiful specimen is of historic interest. The subject was Sebastian de l'amour, one of the Chasseurs Brittanique. The limb was amputated by disarticulation at the hip joint, on 10th July, 1814, by Mr. Henry Gresley Emery, of Banwell. Mainly description from Munro-Smith.*

		unaffected distal shaft; although most of it is illegible some words can be discerned. The text appears to contain two names: (potentially 'The femur of') 'Sebastian de l'amour' and 'Dr Henry Gresley Emery'. The latter was confirmed by mention in (Munro Smith, 1917)	
RC41 (74)	Proximal femur, osteomyelitis	Forms a complete femur with #RC 41. The involucrum encases the proximal shaft, beginning just inferior to the lesser trochanter. In concordance with #RC 41 the anterior involucrum is considerably smoother and thinner than the posterior. There are two cloacal openings; one situated antero-medially, another larger posteromedially	
RE5	Right tibia and fibula, syphilitic node.	The medial tibial shaft surface exhibits the longitudinal striations and fine pitting of tibial periostitis (Roberts & Manchester, 1997), in addition to a swelling on the lateral side of the anterior crest, at roughly midshaft. The fibula also exhibits several plaques of new bone along it's anterior crest, one at midshaft and two at the distal end. There is a very faint inscription on the posterior tibia. The inscription on the proximal shaft reads: 'Fungus haematodes?', the inscription on the distal shaft appears to be the name of the patient and the doctor they belonged to but the writing is too faint to discern. The term 'fungus haematodes' was	*Tibia and fibula. The former showing a hard node, syphilitic in origin. There is a circumscribed formation of new bone over the centre of the shaft, which imperceptibly bevel off. The surface is rounded smooth and compact. The patient, Andrew Johnston, aged 27, was under Mr Lowe in May 1840, and was said to be suffering from Fungus Haematodes.*

		introduced in 1803 to limb tumours that were very vascular and fungating in nature (Hajdu, 2007)	
RE8	Left frontal and parietal	This specimen is of an unfused frontal and left parietal (held together by wire). The skull has been bisected down the midline to show the thickening of the trabecular mass of both bones. At the coronal suture the bones are of a normal thickness. The ectocranial surface exhibits microporosity and there are large pores on the inner surface of the parietal. Inscription: '*Thickness rather more than 3 {illeg.}*' and internally: '*Mr Richard Smith, Bristol Infirmary*'.	*Skull cap. This specimen is one of Richard Smith's, and it without a history. It had been thought to be a case of Paget's disease, but the fact that the thickening is so localised while the rest of the bones are natural negatives this idea. There has evidently been at some previous date a chronic osteitis, which has thickened very much certain regions, chiefly the frontal and parietal eminences, so that it very closely resembles the natiform skull of congenital syphilis. The sagittal suture has been obliterated, which takes place often in that disease; as a rule, however, these changes disappear as the patient reaches adult life. Another point is the fact that the inner table shews the presence of thickening, whereas in Parrot's nodes the outer table on is said to be affected. Almost certainly an example of Morgani's syndrome*
RG12	Right femur, achondroplasia and rickets.	This femur is considerably smaller in size than its complete epiphyseal fusion would suggest (Buikistra & Ubelaker, 1994) due to achondroplasia. The femur bows anteriorly and there is a marked ridge on the posterior shaft (Ortner, 2005). There is an inscription on the anterior shaft: '*Femur of a dwarf from Staple Hill near Mangotsfield givn to R.S. by Mr Henry Jeffries surgeon July 1820. She was about 3 feet 6 inches high, had a child in 1813, a crotchet case. Died in 1815*.'	*Femur. A very good example of rickets. This disease seldom persists actively for more than a few years; after this what are found are the deformities left after the child has recovered, and also some attempts at repair of these deformities. A child with curved tibiae, as it grows older, often shows much straighter bones due to the new bone being deposited most on the concavities, and less on the convexities. Often a well marked, bony ridge or buttress formation can be seen in the concavity, and that is shewn [sic] to some extent in this specimen. The bone is of normal weight for its size. The head of the bone has become depressed to less than a right angle. The subject was a Dwarf who lived at Staple Hill, near Mangotsfield, and this bone was given to Mr. R. Smith. by Mr. Henry. Jeffries, Surgeon, 1820. She was about 3 ft. 6 in. high, and had a child in 1813, a crotchet case, and died in 1815.*

APPENDIX H: UNDERGRADUATE RESEARCH PROJECT

This study's primary aim was to create a comprehensive catalogue of the collection, linking the fragments, their descriptions and the corresponding catalogue entry in one place. The presence of several names, either on the bones themselves or within the catalogue, and the events surrounding the reburial of John Horwood in 2011 directed the research focus towards reconnecting the fragments and their identities and historically situating the collection. to link the individuals in the collection with official records such as the inpatient register or parish birth records were unsuccessful but the study succeeded in discovering the story behind one fragment: RC41.

H.a: Methods

The specimens were documented individually, noting down the specimen number, body part, pathology and any inscriptions or modifications to the specimen. In order to make it possible to identify any specimens that were referred to in the historical records (especially Richard Smith Junior's case book) a detailed description was written because it was not possible to refer to both the specimens and the literature together as the volumes and records were confined to the Bristol Royal Infirmary and Bristol Records Office respectively. Despite the pathological focus of the collection, wherever possible, information was gathered about the age and sex of the individuals as it was thought that this might be useful in matching the specimens with any historical documents.

H.a.a: Ageing

For specimens containing part of the Os Coxae, if the areas were visible and undamaged, the auricular surface was examined according to Lovejoy et al (1985) and for the pubic symphyseal surface both the Todd (1921a) and the Suchey-Brooks (1990) methods were used.

For immature specimens epiphyseal fusion and dental eruption were used to ascertain age, both with reference to Buikistra and Ubelaker (1994).

H.a.b: Sex determination

The single applicable skull present in the collection was sexed using Buikistra and Ubelaker (1994). In order to determine sex from the pelvis, Phenice's (1969) analysis of the subpubic region was used, in addition to shape of the sciatic notch outlined in Buikistra and Ubelaker (1994).

H.a.c: Pathology

Because of the potentially descriptive nature of the corresponding literature, each specimen was described in detail in order to more accurately be able to match up the two sources and to provide a database to refer to whilst doing the historical research.

H.a.d: Historical research

When the material was discovered a number of volumes were also found, correlating to the material. After conducting the purely osteoarchaeological part of the research these volumes were then consulted and, where possible, the entries matched up to the specimens. This was conducted in this order to avoid any mismatched entries from influencing the cataloguing process. Most of the entries were similar to the first part of this research, purely descriptive accounts of the material, but some entries contained additional information about the patients or medical professionals involved. The numbers listed in the volumes far exceed the present material, demonstrating that the material was only part of the original collection. The identifying numbers on the specimens themselves do not match up to those in the books however a handwritten attempt has been made to match these up. Although nothing is known about the author or date of the books, they contain additional information so it can be assumed that they had access to more information about the specimens and therefore will be used as a source of knowledge about the collection.

As Richard Smith had been identified as a fundamental character in the collection, several of his own works were consulted, all of which are held in the Bristol Records Office. His case book from 1829-1843 (BRO: 35893/36/q) provided accounts of cases where part of the individual had been collected for his museum. Due to the illegibility of the handwriting it was extremely difficult to find any corresponding entries but several potential links were discovered. His catalogue of museum preparations (BRO:35893/36/y) was also consulted, but the book mostly concerns the wet specimens found alongside the bones and no links were found.

The inpatient registers for the BRI (BRO:35893/19/h-p) were utilized in an attempt to discover more information, especially their parish, about those individuals for whom a name and admission date were known as this would help to refine the family research for the individuals.

When RC41 was chosen to be the focal case study the small amount of information in the accompanying volumes was expanded upon and any literature about early hip disarticulation was examined. Volume 6 of Richard Smith Junior's biographical memoirs collection (BRO: 35893/36/f) also provided copious information about the surgeon involved.

Unfortunately the other patient names discovered in the process proved very difficult to research. As mostly only a name (sometimes very hard to discern) and a rough birth date were present, it was hard to confirm any findings. Online databases for genealogical purposes, most usefully Family Search, were used to search for these people but no concrete research paths were illuminated due to the uncertainty of data and the confusing results these elicited. The most regrettable set back was that two of the most promising named specimens, RC34 and RC35, belonged to two female children. Both

children survived their amputations but any attempt to trace their later lives was marred by the fact that any subsequent marriage, birth (of their own children) and death records would have included their husband's name and not the name that was included on the specimens.

Because of the largely anecdotal and unorganized nature of much of the historical literature (Richard Smith's personal accounts), in addition to the issues relating to reliability, finding out specific information was almost impossible. Due to the unequal distribution of historical information between the specimens certain specimens have been chosen to explore in detail. The rest of the material has been compiled into a table situated in the appendices, synthesizing both the forensic anthropological data and any matched historical documentation in order to display the vast amount of information in this collection in one place.

H.b: Dating the Collection

Although the collection was found with several accompanying volumes there were no concrete dates for the span of the entire collection. From the limited information on the specimens and in the volumes a rough date range of 1775-1913 could be ascertained, although there are many other specimens that could potentially fall outside of this range. Table 9 shows that the collection was continually added to after the death of Richard Smith Junior.

Table 9: Table showing the specimens with their corresponding dates, either directly from the inscription and volumes or indirectly via the career span of the surgeon (from Munro Smith (Munro Smith, 1917)).

Specimen number	Date	Information
GP4	1775	Inscription: '1775'
RC35	1790	Inscription: '1790'
RC34	1793	Inscription: '1793'
RE2	1797	Volume: 'presented to Mr. Richard Smith in 1797.'
RC41	1814	Volume: '1814'
RG12	Died 1816, given to R.S. in 1820	Inscription: 'Died in 1816
RA6	1830s	Volume: 'the writing on the forehead is similar to that seen of specimens from the 1830s'.
RE5	1840	Volume: 'under Mr Lowe in May 1840'
RA3 & RA4	Pre 1843 *	Inscription of 'fragillitas or molllities ossium' by Richard Smith (died in 1843).

RE8	Pre 1843 *	Volume: 'This specimen is one of Richard Smith's.' (died in 1843).
RA5 & RD 11	1873-1906	Volume: 'The patient was under Dr Waldo.'
RB9	1876-1907	Volume: 'under Dr Shaw'
RB7	1879-1907	Volume: 'The patient was under Dr. Shaw [1876-1907] and Mr Greig Smith [1879-1897]
RB11	1889-1913	Volume: 'Admitted under Mr Bush.'
*** Richard Smith Junior was practicing between 1796-1843 so it is most probable that these specimens are from then however the volumes do not specify which Richard Smith they are referring to so they could be from as far back as 1774.**		

Table 10: Table showing all the mentioned surgeons and physicians and the dates they were practicing at the hospital (from Munro Smith (1917))

Name	Elected	Died/resigned
	Surgeons	
Richard Smith Senior	Dec 15 1774	June 21 1791
Godfrey Lowe	Aug 15 1775	April 8 1806
Robert Jones Allard	July 7 1791	Sept 1810
Richard Smith Junior	**June 23 1796**	**Jan 24 1843**
Richard Lowe	July 9 1807	Feb 9 1850
James Greig Smith	Jan 9 1870	May 25 1897
James Paul Bush	Feb 12 1885	Jan 15 1913
	Physicians	
Henry Waldo	Assistant: Nov 25 1873	July 28 1876
	Physician: July 28 1876	Jan 23 1906
John Edward Shaw	Assistant: July 28 1876	Sept 11 1877
	Physician: Sept 11 1877	Sept 14 1907

H.c : RC 41, Sebastian de l'Amour

The focal case of this study was the story of RC 41 and how one fragment could be part of the story of several different people.

Figure 34: RC41 anterior and posterior.

RC41 is present in the collection in two parts: RC41, consisting of the distal femur, and RC41 (74), the proximal part. There is evidence (in the form of the same string attached to complementary parts) that they were once artificially attached together (Figure 34).

RC41: This distal femur displays chronic osteomyelitis and evidence of amputation. The involucrum envelops the proximal shaft, with a smoother surface on the anterior. The growth on the posterior shaft is larger, extends further down the shaft and contains several cloacal openings, exposing the medullary cavity. There is no separate sequestrum. The distal epiphyseal surface is not present, although some of the underlying trabecular bone is. There is an inscription on the unaffected distal shaft; although most of it is illegible some words can be discerned (Figure 35) The text contains the name: (potentially '*The femur of*') '*Sebastian de l'amour*'. The name of '*Dr Henry Gresley Emery*' was later discerned by reference to Munro Smith (1917).

RC41 (74): This specimen represents the proximal part of the complete femur. The involucrum encases the proximal shaft, beginning just inferior to the lesser trochanter. In concordance with #RC 41 the anterior involucrum is considerably smoother and thinner than the posterior. There are two cloacal openings; one situated antero-medially, another larger posteromedially.

Figure 85: Inscription on RC41

From consulting the catalogues not only was the inscription made clearer and confirmed but more information about the patient was learned:

> *The Subject was Sebastian de Chamours, (*written: *or l'amour?I), chasseurs Brittanique. The limb was removed by Mr Gresley Emery, July 10th 1814. This was the first amputation at the hip joint performed in England. Mr Emery had been educated at the Bristol Infirmary.*
>
> *This beautiful specimen is of historic interest. The subject was Sebastian de l'amour, one of the Chasseurs Brittanique. The limb was amputated by disarticulation at the hip joint, on 10th July, 1814, by Mr. Henry Gresley Emery, of Banwell.*

The second volume entry (seemingly the most recent version due to the name correction and larger quantity of information) contains a large quantity of text that has been copied from Munro-Smith's (1917) work, suggesting that the volumes were also an attempt to explain rather than just to catalogue.

Research into the practice of amputation by disarticulation at the hip joint revealed a large quantity of information about the exact operation that was conducted on RC41. Because of the pioneering nature of the operation, Guthrie (1820) included a detailed description of the operation in his work on the treatment of gunshot wounds which included some information about L'Amour himself.

L'Amour received a gunshot wound to the left leg in August 1813 during a conflict near St. Sebastián (Guthrie, 1820). He was taken to the general hospital at Passages and not transported to England for treatment until February 1814, his leg having become infected (Guthrie, 1820).

St Sebastián was a town on the North Coast of Spain that was put under siege by the Duke of Wellington from July to September 1813 (Watson, 1997). The conflict at St. Sebastian was part of The Peninsular War, which in turn formed part of the Napoleonic Wars from 1807-1814, named as such because it was fought in order to gain control of Iberian Peninsula (Glover, 1974).The Chasseurs Brittannique was a battalion in the British service, formed in 1801, from the disbanded Army of Condé (Chartrand, 2000). It was mainly composed of French émigrés: French nationals who fled France after the French revolution in 1789 (Carpenter & Mansel , 1999) and L'Amour was a corporal in this battalion (Guthrie, 1815).

The seizing of St. Sebastián was part of the pursuit of the French army after their defeat at the decisive Battle of Vitoria on the 21st June 1813 (Gurwood, 1834). The town was taken by storm on the 31st August 1813 (Gurwood, 1834) and the siege is famous for the violent mob behaviour of the British forces (Watson, 1997). As l'Amour was present at San Sebastián it is likely that he was also involved in the battle of Vitoria as part of the Chasseurs Britanniques.

The surgical operation was performed by Mr. Henry Gresley Emery (1777-1826), Inspector of Army Hospitals under the Duke of Wellington (Urban, 1826), most likely in Plymouth where he was senior surgeon in 1814 (Urban, 1814). Hip disarticulation was a radical and dangerous procedure that was only performed when the death of the patient was otherwise certain, mainly by military surgeons attempting to treat severe cases of traumatic injury to the upper femur (Loon, 1957; Kaufman & Wakelin, 2004). The procedure was first proposed to the Royal Academy of Surgery in 1739 by Sauveur Francois Morand (Mitchell & Redfern, 2007) but was not successfully enacted on a surviving patient until 1815. The procedure entails disconnecting the femur through the acetabulum, removing the whole leg and closing the wound over the exposed acetabulum, creating a stump (Malawer & Sugarbaker, 2001). It is significant that RC41 was part of the history of hip disarticulation; the procedure is still used today to treat malignant tumours on the proximal femur (Sugarbaker & Chretien, 1981).

The following account of l'Amour's life from the 18th July 1814 until his death on the 20th August is taken from Guthrie (1820, pp. 334-342). The operation was first proposed on the 18th July as it was decided that it was the only way to prevent his death. L'Amour initially refused the operation, but after reconsideration it was performed on the 21st July. After the initial procedures to limit blood loss, the femur was cut obliquely with an amputation knife, accounting for why the specimen is present in

two parts. In order to remove the remaining proximal half, the femur was completely exposed and then twisted outwards and a surgical knife was inserted into the acetabulum to disarticulate the femoral head.

In the days following the operation l'Amour was reported to be well, with some reports of abdominal pain and moderate amounts of discharge from the wound. On August the 7th l'Amour was woken by pain from the wound, which had started to bleed considerably, although where the blood was coming from was unknown. The bleeding only lasted a few hours. On the 10th August the account starts to document that L'Amour was becoming weaker and the amount of discharge from the wound had increased. He appears to improve: the wound is described as 'healing' and 'healthy' on the 15th and 16th, but by the 17th his condition starts to worsen again. On the 18th August the wound started to bleed profusely again and he appears to completely believe that his own death is imminent:

> *"His spirits have entirely forsaken him; he has given up all idea of living; feels disgusted with everybody and everything, and wishes to have a priest sent for" (Guthrie, 1820)* p340

Although on the 19th it is reported that he appears to improve, at 15:00 on the 20th August 1814, he died.

The body of l'Amour was dissected after his death. Several sinuses were noted in the innominate and the wound was filled with pus. The rest of his body was also examined: his liver was reported to weigh almost seven pounds, this enlargement had also affected the ribs, be pale yellow in colour and 'appear internally as if parboiled' (Guthrie, 1820, p. 342). This was attributed to alcohol abuse. The dissection also discovered inflammation in the stomach and small intestine, as well as pleural adhesions.

The Peninsular war provided much opportunity for operation on severely traumatic injuries by military surgeons (Guthrie, 1815). This specimen forms an important part of the advances in the treatment of trauma due to this. Having access to both osteological and historical information makes this specimen an exceptional part of the collection and shows how much can be learnt from the specimen inscriptions. The ability to combine both broad historical context and specific personal experiences with an artefact makes this collection an exceptional resource.

Dr Henry Gresley Emery plays the second role in the story of RC41. He was educated at the Bristol Infirmary and was known to Richard Smith Junior, who included a description of his life and several personal letters in his Biographical Memoirs (Smith, n.d. BRO:35893/36/f). Richard Smith Junior himself wrote to the Bristol Mirror in response to other claims about disarticulation at the hip joint to inform them of the operation on Sebastian de L'Amour, in a piece entitled 'The Great Surgical Operation' (Figure 20).

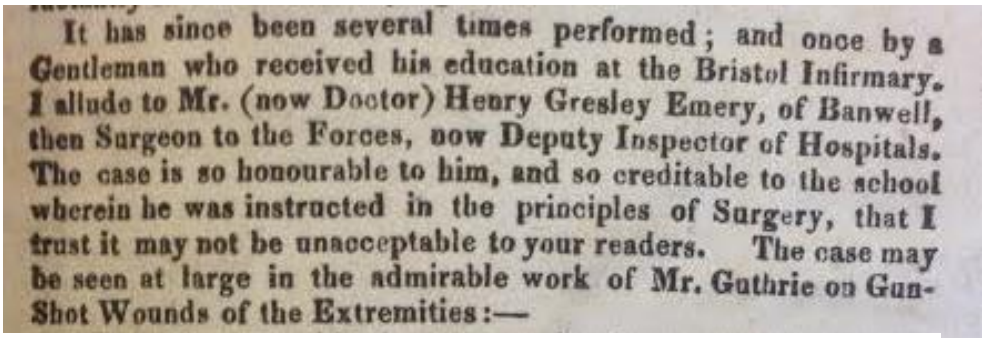
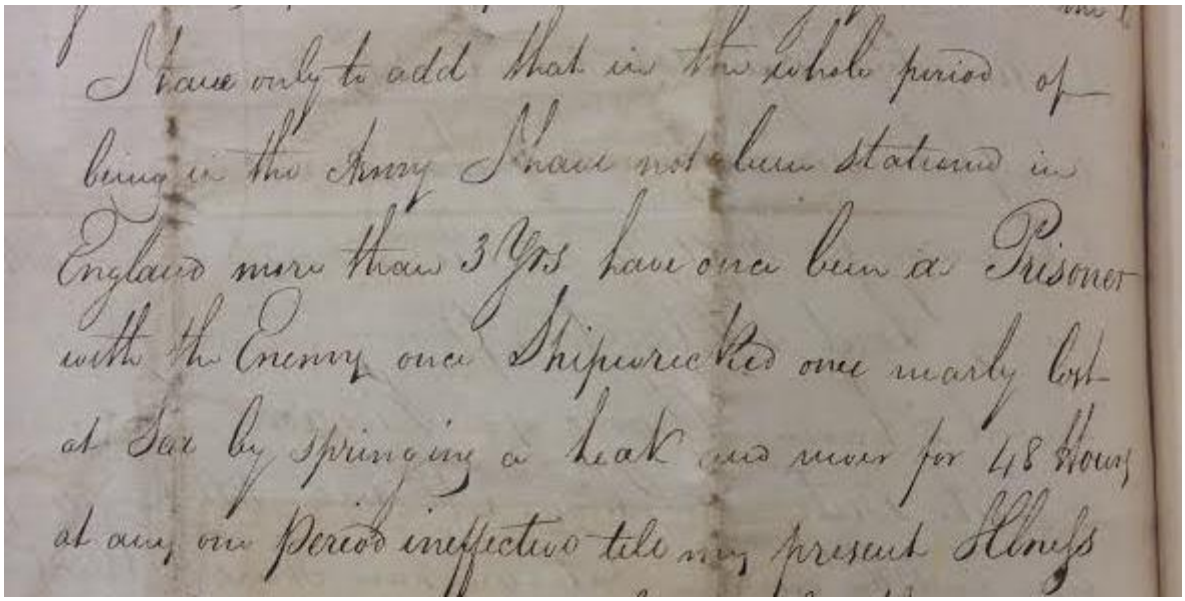

It has since been several times performed; and once by a Gentleman who received his education at the Bristol Infirmary. I allude to Mr. (now Doctor) Henry Gresley Emery, of Banwell, then Surgeon to the Forces, now Deputy Inspector of Hospitals. The case is so honourable to him, and so creditable to the school wherein he was instructed in the principles of Surgery, that I trust it may not be unacceptable to your readers. The case may be seen at large in the admirable work of Mr. Guthrie on Gun-Shot Wounds of the Extremities:—

Figure 96: An excerpt from the letter written by Richard Smith Junior to the editor of the Bristol Mirror, included in his Biographical Memoirs. BRO: 35893/36/f

In this memoir Smith has included several letters from Dr. Emery's brother, George Emery, to the BRI in which he volunteers Dr. Emery for the position of Apothecary to the Infirmary. Dr. Emery's personal communication to Richard Smith Junior is also included where he documents his active military career, beginning as an assistant surgeon in 1799 and achieving the rank of Inspector of Hospitals. Although Dr. Emery was eventually unavailable on the day of the election these letters provide valuable information about Dr. Emery and another element of the history represented by RC41.

Dr. Emery's medical career was eventful and active, including achieving senior staff surgeon at Plymouth (Urban, 1814) and Principal Medical Officer in the second Grande corps d'armee under Lord Hill, one of the two divisions of Lord Wellington's army in the battle of Waterloo (Philippart, 1820). Dr. Emery summarises his distinguished career in 1813 in the concluding lines of his letter to Richard Smith Junior (Figure).



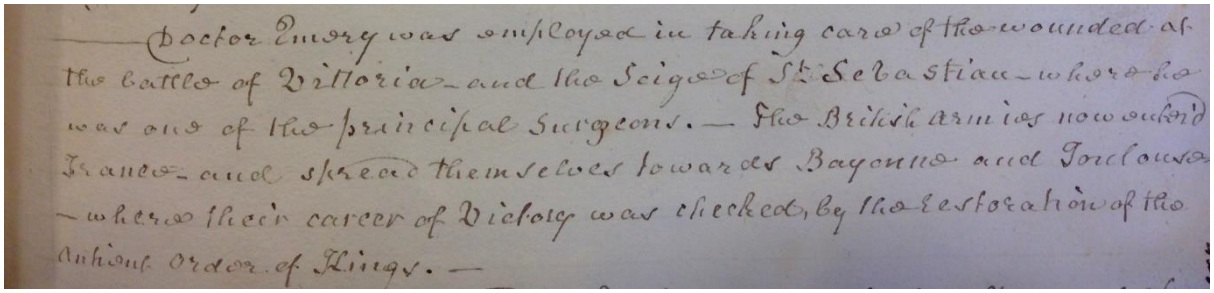
I have only to add that in the whole period of being in the Army I have not been stationed in England more than 3 yrs have once been a Prisoner with the Enemy once Shipwrecked once nearly lost at Sea by springing a leak and never for 48 hours at any one period ineffective till my present Illness

Figure 37: Excerpt from a letter written to Richard Smith Junior by Dr Henry Emery himself

The letter reads:

> *I have only to add that in the whole period of being in the Army I have not been stationed in England more than 3 yrs have once been a prisoner with the enemy, once shipwrecked, once nearly lost at sea by springing a leak and never for 48 hours of any one period ineffective till my present* {ILLEG.}.

This excerpt (Figure 21), taken from the transcribed letters of George Emery, places Dr Emery actually at St Sebastian alongside Sebastian de L'Amour.



Doctor Emery was employed in taking care of the wounded at the battle of Vittoria and the Seige of St Sebastian where he was one of the principal Surgeons. — The British armies now entered France and spread themselves towards Bayonne and Toulouse — where their career of Victory was checked by the Restoration of the Antient Order of Things. —

Figure 108: Excerpt from a transcribed letter written by George Emery nominating his brother for the position of Apothecary to the Infirmary

The ability to combine osteological material and historical information given by this collection can provide incredible amounts of knowledge around a particular specimen. The case of RC 41 provides a new artefact-focused perspective on these historical documents, creating a personal narrative centred on the history of the specimen, rather than just the pathological condition it displays. This is not only an important source of information but, by telling the story of the individual from whom the material was taken, it also creates a step towards returning personhood to the specimen, mirroring events such as the funeral for John Horwood.

RC41 testifies to the importance of reconnecting biological and historical information. The pathological information that could have been ascertained from the physical material alone gives an incredibly limited perspective on the situation. By reuniting specimen and story through a bio-historical approach it was discovered that RC41 does not just reflect the pathological environment of the past but also elucidates information regarding military history, surgical history and specimen taking, as well as the personal stories of two different people.

H.d: Full catalogue of the Bristol Royal Infirmary Pathological Specimens Collection including the corresponding catalogue entry where applicable.

No.	Summary.	Description	Catalogue entry
103	Plaster model of a proximal humerus	This piece appears to be made from plaster and has been painted. Potentially a mould. May be displaying features of osteoarthritis	
109	left femur	This specimen consists of a left femur that has suffered an oblique (or possibly spiral) fracture in the proximal third of the shaft, leading to malunion of the two fracture fragments. The bone has then attempted to heal but has not been set properly, leading to a misaligned femur. There is a considerable overlap between the fragments, leading to shortening of the bone and the distal portion of the shaft has been rotated slightly. There is some evidence of healing on the fracture site, with a soft callus being visible on the bone surface. This suggests that the fracture happened more than 3 weeks antemortem (Lovell, 1997).	***Potential*** *109 = 250. Femur.* *Fracture of shaft with great displacement, and on this account no bony union has taken place. The fragments are united by a large amount of firm fibrous tissue.*
127	tibia	This tibia has a lot of cortical thickening on the diaphysis, with varying surface textures. The anterior shaft is porous and pumice-like, whereas the bony growth on the posterior shaft is less fine-textured and there is a smooth, raised line running longitudinally down the shaft. There is a hole connecting the medullary cavity and the surface, indicative of an infection. The distal epiphyseal surface is not present.	
129	left innominate and femur, fused.	The femoral head and acetabulum have fused, affecting the angle of the os coxae as the pubic sympyseal surface is now facing inferiorly, potentially causing a forward bent posture. There is significant post-mortem damage to the iliac blade and greater trochanter. There are very fine longitudinal striations along the diaphysis and the distal epiphysis is unfused, meaning that the individual is under 21 years of age (Buikistra & Ubelaker, 1994, p. 43). The pubic symphyseal surface is too damaged to give a reliable estimate but the smooth billowing of the auricular surface appears to support this age estimate (Lovejoy, et al., 1985). There is a large amount of exposed cortical bone on the lateral side of the distal epiphysis. The lack of ventral arc, slight subpubic concavity and narrow medial	

		surface of the ischiopubic ramus (Phenice, 1969) present an inconclusive sex estimate, although the young age of the individual could account for this.	
133	left innominate and femur, fused.	This specimen has been bisected at the point of fusion to show the internal structure. There is no indication in the cancellous bone tissue as to where the femur and acetabulum meet. The external surface at the fusion point is porous and the remaining fragment of pubis is angled inferiorly.	
133 56. 1	left femur and pelvis, fused.	The femoral head and acetabulum has almost completely fused; there is only a slight ridge indicating the previous acetabulum rim. The fusion has caused the pubic symphysis to face inferiorly and the iliac blade is angled more towards the anterior, creating possibly a less upright posture. Although the pubic symphyseal surface has been damaged there are still clear horizontal ridges and there is no boundary line around the face, indicating an age of 18-21 according to Todd (1921a) and 15-24 (mean = 19.4) for the Suchey-Brooks (1990) method. The auricular surface, when examined in reference to Lovejoy et al (1985)was unclear to age as the surface was finely grained, with some porosity on the inferior demiface and lipping at the apex. The lack of ventral arc and subpubic convexity (Phenice, 1969) and very male sciatic notch (Buikistra & Ubelaker, 1994) all indicate that the individual was male, although the medial surface of the ischiopubic ramus suggested female.	
143	left tibia, osteomyeli tis	Large involucrum enveloping the proximal epiphysis and shaft. There is a very large cloacal opening exposing the sequestrum on the anterior shaft, in addition to three more on the posterior. The location of this infection is suggestive of hematogenous osteomyelitis as this area has a plentiful blood supply (Roberts & Manchester, 1997). The surface of the distal shaft also exhibits longitudinal striations and fine pitting, evidence of tibial periostitis which is separate from the osteomyelitis of the proximal tibia and possibly an indicator of stress and minor shin trauma (Roberts & Manchester, 1997).	

147	Proximal tibia	The head and proximal shaft of a tibia displaying evidence of a fracture and subsequent infection. The shaft has been flattened anterior-posteriorly and the proximal joint surface is angled mediolaterally. There is an opening inferior to the proximal head on the more concave side (it was presumed to be the posterior but the distortion makes this uncertain). This may be a cloaca, signalling infection, which is common in the tibial shaft due to its proximity to the skin surface (Lovell, 1997). The fracture itself is irregular in shape, with a shattered appearance indicative of a comminuted fracture.	
151	Left humerus, periostitis.	Diaphysis and distal epiphysis of a humerus with irregular, porous, pumice-like bone around the distal shaft and metaphysis. The bone is more coral-like on the posterior metaphysis.	
157	Tibia and fibula, fused.	The distal epiphysis and diaphysis of a tibia and fibula that are fused. The fibula has been dramatically flattened mediolaterally and merges with the tibia at the proximal shaft and twists before the distal articulation. There is a plaque of porous, pumice-like reactive bone on the medial tibia	
163	Distal femur, osteosarcoma	This femur exhibits the craggy, disorganised growth with spicules growing perpendicular to the original bone surface characteristic of an osteosarcoma (Roberts & Manchester, 1997). The distal femur is the most common site of this tumour type (Ortner, 2005). The massive growth is concentrated around the metaphysis and distal shaft. The distal articular surface is unaffected by the tumour but exhibits some subchondral wear and the exposed cancellous bone is also worn.	
169	Tibia, left.	A tibia missing the proximal epiphysis. The medullary cavity is filled with trabecular bone and there is an opening on the distal epiphysis, potentially cloacal.	
173	Right proximal femur, infection	The epiphysis has expanded with a porous, bulbous, web like bone structure, engulfing the greater trochanter with a large opening on the lateral aspect.	
179	Right tibia and fibula.	The two bone in this specimen have been joined artificially by nails in the fibula epiphyses. The tibia has increased in diameter and weight and exhibits porous, pumice-like surface texture at both epiphyses. There is reactive bone growth along the soleal line and between the tibia and	

		fibula. The presence of a cloaca at the proximal anterior epiphysis is suggestive of an infection.	
181	Tibia and fibula, fused	Both bones exhibit microporosity. There is irregular bone growth on the shafts of both bones, causing there to be multiple fusion sites. The non-contact sides of the shafts are smoother although do exhibit fine porosity.	
187	right tibia	The diaphysis of this tibia is thinner than expected, especially at the midshaft. The distal epiphysis is unaffected but the proximal end appears corroded, with completely exposed cancellous bone and large craters where the articular surfaces were once located. Wasting likely due to a form of paralysis.	
189	humerus	Very porous surface texture on the proximal diaphysis and several cysts within the head.	
193	left femur, osteoarthritis	A femur with marked changes to the bony contour of the proximal head and neck, osteophytes and porosity.	
195	long bone diaphysis	Section of the shaft of a long bone, bisected longitudinally to show the inner structure. The original cortex is still discernible as the slightly more orange-coloured sections. The medullary cavity has become filled with cancellous bone and the periosteum has expanded in diameter. The exterior surface is rough and porous.	
205	Proximal humerus, potential neoplasm.	The proximal epiphysis and shaft of a humerus exhibiting unusual growth around the margins of the articular surface, enlarging the diameter and flattening the contour of the humeral head. The growth is light, with a thin cortex overlying cancellous bone. The joint surface is pitted.	
207	humerus, neoplasm	The longitudinally bisected proximal humerus, prepared in order to display the internal structure. Three, small, dense growths are situated along one side of the expanded shaft; the internal view shows trabecular bone growth within these protrusions. The other side of the shaft exhibits a large growth of very thin cortical bone. Internally there is uneven, thick and disorganised cancellous bone growth, contrasting with the fine, regularly structures cancellous bone within the humeral head. The expansion consists of thin, smooth cortical bone.	

213	distal femur, degenerative joint disease	Exposure of cancellous bone on the articular surface, only a small eburnated circle of the joint surface remains on one of the condyles. The cancellous bone has been eroded with large pits on the articular surface.
21764	right radius and ulna	The radius is complete but only the distal half of the ulna is present. There is a healed fracture in the radius half way down the shaft, the bone has healed at an oblique angle and bends medially at the fracture site. There is fibrous soft tissue connecting the radius and broken end of the ulna, the ulna fracture site exhibits some bony outgrowth. The specimen appears to have been treated with a dark varnish.
219	Distal femur	Distal femur with a very porous, posterior shaft, eroded epiphysis and two cloacal openings on the anterior shaft, suggestive of infection in the medullary cavity. The cortex has expanded into the medullary cavity.
223	distal left tibia, periostitis	The distal half of a left tibia, cut transversely across the diaphysis. The bone exhibits porous, pumice-like plaque of bone on the medial shaft which protrudes to form a posteromedial ridge. The endosteum is unaffected.
23397.6155	Tibia, fibula, talus and calcaneus, infection.	This specimen consists of the distal halves of the tibia and fibula which have become fused with the talus and calcaneus. The tibia is fairly smooth whereas the fibula Is covered in uneven reactive bone, with a plaque of porous, pumice-like bone on the distal shaft. The distal end of the tibia exhibits a bulbous expansion of the thin cortex and the cavity is large and empty.
235	parietal	This bone has increased in thickness but the diploe has lost its cancellous structure and is now solidly cortical bone**.** There is some reactive bone along the internal site of the sagittal suture and the entire ectocranial surface has a finely grained, pumice-like texture. Unsure of cause, Pagets?
243	left innominate and femur, osteoarthritis	This specimen exhibits extreme osteophytes around the rim of the acetabulum and femoral head. The rim especially has become very large and porous, with uneven bone growth. The head of the femur and the inner surface of the acetabulum are porous. The subpubic region is conclusively male (Phenice, 1969), which is

		supported by the shape of the greater sciatic notch (Buikistra & Ubelaker, 1994). The pubic symphyseal surface is slightly depressed and porous, with a rim on the dorsal aspect but no ventral margin, indicating an age of above 50 (Todd, 1921a) and a range of 34-96 (mean = 61.2) (Suchey & Brooks, 1990). The auricular surface is very pitted and irregular and subchondral destruction on the inferior demiface, suggesting an age of 63 or over (Lovejoy, et al., 1985).	
245	Spine and several proximal ribs on both sides, DISH	C-2 to L-1. Candlewax like ossification along right side of T-6 to L-1.	
247	Thoracic spine, osteoarthritis	5 articulated thoracic vertebrae. Candlewax-like bone but down the midline (slightly right), potentially DISH. There is a large amount of lipping between the vertebral bodies on the right side.	
249	Spine	7 articulated thoracic vertebrae and 1 single. There is candle-wax like ossification along the right side of all the vertebral bodies. It can be diagnosed as DISH as it involved the continuous ossification of the anterior longitudinal ligament on the right hand side of the thoracic vertebrae (van der Merwe, et al., 2012; Rogers & Waldron, 2001).	
261	Proximal femur	A small, almost unidentifiable fragment.	
263	Left side of the face.	Containing part of the maxilla, zygomatic, frontal, nasal, sphenoid, ethmoid and lacrimal, no apparent pathology.	
35	Right radius, fracture	The radius has been bisected longitudinally. Malunion fracture where the two fragments have healed with overlap. The difficulty of bisecting a bone with this feature has meant that the proximal fragment has the appearance of cortical expansion into the medullary cavity but this is just an artefact of the preparation. The healing process has caused offsetting and potential shortening.	
41	fragment of long bone from the lower limbs, fracture	A longitudinal cross section of a misaligned, overlapping, healed spiral or oblique fracture. The internal aspect shows the mature bone growth joining the two fracture fragments where they overlap.	
51 98.	Pelvis and right femur,	The femur has remained situated in the acetabulum because of the bony growth around	

21.1	fracture and osteoarthritis.	the acetabulum rim and femoral head. An heavy impact through the femur appears to have caused a fracture across the acetabulum and iliac blade. This has caused the pubis and ilium to bulge medially, causing the femoral head to be visibile through several openings at the point of union for the three bones. Most of the femoral head is concealed within the acetabulum but there is clearly bone growth over the neck, giving the head a mushroom-like appearance. The trauma has caused osteoarthritis of the femoral joint.	
53 (551)	Spine and pelvis. Scoliosis	Sciatic notch = potentially male. This specimen exhibits a sharp posterior-anterior bend in the spine, with a slight lateral deviation. The sharp bend involves T-6 to L-2, with the apex of the curve at T-11. The involved vertebral bodies have collapsed/degraded and fused fibrously. The lumbar spine is angled more posteriorly Very complete (Including C-1). Tuberculosis? Potentially as it involves the collapse of the vertebral bodies, L-1 (lower spine) and the spinous processes are not involved (Ortner, 2005).	***Potential*** *53 (551) = 237. Spine and Pelvis* *Specimen almost similar to the previous one. It shows better the primary dorsal compensatory lumbar curves. The vertebrae are bent backwards in the dorsal region (kyphosis) and there is also lateral deviation with scoliosis, and the compensate the kyphosis there is lordosis in the lumbar region (that is the bending forward of the spine at this spot). In both this and the previous specimen the antero-posterior curves are more marked than is usual in these cases.*
63	Clavicle, fracture	Healed fracture, accounting for warped shape.	
65	long bone diaphysis, periostitis	A section of unidentified long bone exhibiting periosteal inflammation including a plaque of longitudinally striated bone and an area of reactive coral-like bone growth on the opposite side.	
65b	Distal half of left radius.	Porosity on the distal epiphysis, amputation.	
69	Distal humerus and radius and ulna. Right hand side.	Bony ankylosis of the elbow joint with a cavity in the middle of the joint. Fused at an angle and the radius bows laterally. There is a small, thin, sharp protrusion on the posterior ulna at midshaft. The epiphyseal line is still visible on the distal radius.	
6933	tibia and fibula	This specimen is markedly different from the others as it is reddish-orange in appearance with a fresh, waxy texture. The bone is soft at the epiphyses. This seems to be an artefact of the preparation process as the other bones are clean	

		and varnished. Both bones have been flattened mediolaterally and curve towards the anterior, with sharp anterior crests, potentially indicative of rickets (Ortner, 2005).	
7	Left tibia, periostitis	A plaque of porous bone is situated on the distal anterior shaft.	
77	right radius and ulna	A non-union healed fracture located where the distal and medial shaft thirds meet on the radius. This location is suggestive of a Galeazzi fracture, caused by falling onto an outstretched hand, which may also account for the non-union as this fracture requires surgical intervention to realign (Lovell, 1997). The fracture was transverse in nature and the two fracture fragments have healed separately, sealing the medullary cavity. There is fibrous tissue around the edges of the distal radial-ulna joint. The bones have been treated with a dark brown stain.	
85	left tibia and fibula	A fracture in the distal third of the fibula has resulted in fusion between the tibia and fibula at the fracture site. There is also a slight rounded swelling on the medial tibia surface opposite the fusion site.	
87	Spine, scoliosis	7 articulated and 2 loose vertebrae (together). 2 distorted ribs are also attached. The spine shows a lateral curve, resulting in vertebrae with wedge-shaped bodies at the apex. There is fusion along the posterior aspect as the spinous and transverse processes are indistinct between vertebrae.	
93	Thoracic spine, juvenile, fused.	This specimen has the lateral curve and wedge-shaped vertebral bodies of scoliosis. The lamina have fused on the posterior spine.	
BACT 115	Right femur, syphilis.	This femur exhibits cortical thickening and growth of cancellous bone within the medullary cavity. The bone surface is uneven and porous, with a thick, rough line of bone following the linea aspera on the posterior femur. A wedge-shaped section has been cut away from the distal shaft, potentially in order to display the distorted internal bone structure, a section of the femoral head has also been removed. The femur is bowed, showing the reduced structural strength of the bone. The bowing and thickening could be indicative of Paget's disease (Ortner, 2005).	Tertiary syphilis: periostitis. As a result of a very chronic untreated syphilitic periostitis the shaft of this femur has become greatly thickened. The marrow cavity is normal. Chronic inflammation of the periosteum has caused the osteoblasts to lay down layers of dense bone making it very heavy. The surface is much more smooth and regular than that produced by pyogenic organisms. Chronis syphilitic inflammation elsewhere stimulates fibroblast

			proliferation and fibrous tissue results: the response is of the same nature. Nowadays lesions like this are very rare – partly because of treatment but partly, apparently, because Europeans no longer suffer such gross tertiary lesions as they formerly did.
BACT 116 203	Proximal right femur and diaphysis, in two unconnected halves.	This specimen has been bisected longitudinally to show the internal structure. Externally, the diaphysis is swollen, unevenly textured and porous at the distal end of the specimen (possibly about midshaft of the complete bone). Internally the medullary cavity has become completely obliterated at the site of this swelling. The original cortex is still visible but there is trabecular bone between the periosteum and cortex and, in parts solid bone, filling the medullary cavity.	Tertiary syphilis: periostitis. This femur shows some characteristic features of tertiary syphilitic bone disease. The periostitis was localised to part of the shaft. The outer surface of newly formed bone is surprisingly smooth. The transverse section at the end of the bone shows very well that the added thickness is due to bone laid down by the periosteum. The normal shaft can be seen inside.
BACT 117	skull, syphilis (caries sicca).	Sex: possibly female. The nuchal crest was inconclusive, the supraorbital margin and glabella prominence were both possibly female. A very complete skull, missing the temporals, mandible and all dentition. The outer surface of the cranium exhibits widespread caries sicca lesions (mainly on the frontal and left parietal) and the inner surface is unaffected.	Tertiary syphilis: osteitis of skull. This condition of gummatous osteitis of the skull used to be common. It is now extremely rare. This specimen in a very old and valuable one. It shows a worm-eaten appearance of the outer table of the vault. This was due to a gummatous periostitis in which the scalp and the adjacent bone were involved. Such a condition used frequently to extend from an ulcer on the scalp, with a “wash-leather” slough in its base, through the bone into the meninges and underlying brain, Bone, meninges and brain were thus bound together in one gummatous mass with a caseous centre and scarred periphery. Eventually septic meningitis or some intercurrent infection caused death. In this case there does not seem to have been any bone production; it was evidently an actively progressive process.
BC 50a	Sternum soft tissue	This is the only specimen consisting only of soft tissue	
BRI 1	Proximal humerus, neoplasm.	This fragile specimen is cleaner and paler and whiter in colour than the rest of the collection. It exhibits unusual bone growth in the form of long	

		spicules which grow perpendicular to the original diaphysis. The spicles are more organised than #163 and is much lighter to hold. The bone growth is fragile and resembles ruffles in appearance.	
BRI 2	Left foot, talipus equinovarus.	This specimen consists of an articulated foot, complete with distal tibia and fibula but the 4th metatarsal and phalanges, the 5th intermediate and distal phalanges and the 1st distal phalanx are not present. The navicular and the medial and intermediate cuneiform have become fused. The talus articulates with the navicular and unusually also with the cuboid, lateral and intermediate cuneiforms. This deformity would have affected the individuals ability to walk (Roberts & Manchester, 1997).	*There is a label attached to the foot: 'Congenital Deformity of Foot. The 4th metatarsal is missing (club-foot), with the head of the talus articulating with the cuboid and cuneiforms, as well as with the navicular. The deformity has resulted in severe osteoarthritis.'*
BRI 3	Rib		
BRI 4	Rib		
GP 4	tibia diaphysis, osteomyelitis	Presented in an unsealed plastic container. There is an inscription on the sequestrum, reading '1775'. The involucrum almost fully covers the sequestrum on one side, it is almost completely exposed on the other. The involucrum is very irregular in texture and is separated from the sequestrum in places. The exposed seqestrum shows signs of degradation as there are irregular lesions in the bone.	Chronic osteomyelitis of tibia with involucrum formation. This is an old specimen of a condition that one does not see nowadays, thanks to improved methods of treatment. It is the tibia of a child and the condition began, almost certainly, as an acute staphylococcal osteomyelitis. It would seem that they upper, rather yellow, part of the shaft had its periosteum attached and may have been viable. The rest of the shaft is dead and constitutes a sequestrum: it has a worm-eaten appearance as a result of partial absorption of the dead bone. The rough casing of bone on the outside of the sequestrum is called the involucrum and is laid down by the raised and inflamed periosteum. Holes running through the involucrum communicated with sinuses in the overlying skin and pus discharged through them. These holes in the involucrum are called cloacae. An osteomyelitis will not heal as long as any sequestra are present and in less advanced cases than this it would be feasible to do a sequestrectomy, relying on the

			newly formed periosteal bone to reconstitute the shaft.
GP 90	right femur, potentially phocomelia	The distal end of the femur is not present an the tapered, posteriorly pointing and complete distal shaft suggests that this is not due to a traumatic incident and could possibly be indicative of a congenital malformation like phocomelia (Mann, et al., 1992).	
PM 8801	calvaria	Noticeable thickening of the trabecular mass of the frontal bone, with an uneven endocranial surface on the frontal. The completely obliterated sutures suggest this was the skull of an older individual, Hyperostosis frontalis internal (HFI)/Morgagni syndrome? The specimen is heavy.	
RA 3	tibia and fibula 1796-1843	Complete shafts of both bones, missing all epiphyses except for the partial proximal tibial epiphysis. The compact bone is thin and the fibula exhibits signs of inflammation that has led to several sharp crests, an uneven surface texture and areas of fine-porosity. It has been inscribed with the words: '*A specimen of fragillits or molllities ossium*' and '*It will float on water*' among other illegible words.	*Tibia and fibula. This specimen, which is a very old one and without a history, has been labelled: - fragillits or molllities ossium; the former name is not now a pathological entity. In Mollities ossium, or osteomalacia, there is a gradual destruction, without inflammation of the cancellous tissue with consequent enlarging of the medullary cavity, which becomes filled with a soft, fatty material. The compact tissue is at the same time thinned and the bone bends or breaks with great ease. This specimen and the next would answer fairly well to this description, apart from the medulla, which has disappeared in preparation. But there are two other considerations in this case. There are signs in the first place of inflammation on all three bones, especially the fibula, which can have nothing to do with mollities ossium, and it may be they are examples of atrophy from disease, compare specimen No 6 and in the second place this change sometimes takes place as the result of senility.*
RA 4	long bone diaphysis 1796-1843	Part of a long bone, cut at one end and shattered at the other, the cortex is very thin and the bone is light. There is an illegible inscription on the shaft.	*Tibia. For description see no 120 (RA 3).* *Fragilitas ossium. The cortex of the bone has been reduced to a thin*

			shell, the medullary cavity being correspondingly enlarged. Written: inscribed by Richard Smith 'fragilitas or marllites (?) ossium. It seems to be simple osteoporosis
RA 5	Spine, scoliosis. 1873-1897	This specimen has been mounted on a wooden plaque, similar to RA6, suggesting that this was done in the 1960s. It consists of an articulated spine with 10 ribs still present on the right side. Present are: C-6 and C-7, T-1 to T-12 and L-1 to L4. The deviation begins at T-3 and involves all of the thoracic vertebrae, although the most affected are T-4 to T-9. The spinous processes of the affected vertebrae are aligned laterally to the right and this deviation has caused the spine superior to the deviation to be angled more sharply towards the anterior. The vertebral bodies of T-5 and T-6, situated at the apex of the curve, are wedge shaped. These features are indicative of scoliosis (Aufderheide & Rodríguez-Martín, 1998).	*Spine. A very advanced case of Scoliosis; the primary curve in this specimen is greatest opposite the 6th dorsal vertebra, its convexity being backwards and to the left. The distortion beings as a lateral deviation, and when this occurs the spinous processes, being the most fixed point, owing to their muscles and ligament, tend to stay nearer the middle line, causing the freer bodies in front to rotate away from them, that is towards the convexity of the curve. So the curve as seen from in front is always greater than that of the spines seen from behind; as a result of the rotation of the vertebrae the transverse processes on the one side are pushed backwards, and can be seen to have carried the ribs back with them; so the left scapula and the right breast were more prominent than natural. The bodies of the vertebrae in the concavity have been so compressed that they are wedge shaped, the rib are crowded together on the one side of the concavity,, and more widely separated than usual of the convex side. There are two compensatory curves in this case, one above involving the last cervical and upper three dorsal, and one below from the ninth dorsal to the first lumbar; and these are both opposite in direction to the chief dorsal curve. The most common condition in thse cases is to have the primary curve high up in the dorsal region, and to the right, and the compensatory one in the lower dorsal and lumbar to the left, in which case the left loin becomes prominent, on account of rotation backwards of the left lumbar transverse processes, carrying*

			backwards the erecter spinal; and at the same time the right hip appears prominent, owing to there being a hollow above due to the concavity of the lumbar vertebrae in this situation. History: Patient, aged 30, died of heart failure. He was under Dr. Waldo.
RA 6	Skull, hydrocephalus. 1830s?	This specimen has been mounted on a wooden plaque. The tooth eruption pattern is indicative of a child of 9±3months (Buikistra & Ubelaker, 1994). The individual exhibits a small face, with cranial expansion. The bones of the cranium are very thin, with a rippling and creasing pattern on the parietals. The frontal and parietal bossing is indicative of this condition (Murphy, 1996). There is a large triangular gap between the parietals on the posterior skull. There are several holes in the frontal and frontal bossing has led to orbital deformity. The word 'hydrocephalus' has been inscribed across the frontal.	*Hydrocephalus. This antique skull is from a child of about six months with hydrocephalus. One of the characteristic changes it shows is the way the orbital roofs have been pushed downwards. This gives rise to a characteristic eye deformity seen in the plaster cast. This specimen was repaired and remounted in November 1967. Its origin is not known, but the writing on the forehead is similar to that seen of specimens from the 1830s.*
RA 9	right innominate and proximal femur, congenital dislocation	This specimen exhibits a triangular and undeveloped acetabulum as the femoral head now articulates with the lateral ilium, at the apex of the greater sciatic notch (articulation coloured yellow). The femoral head is triangular in shape, with lipping and osteophytes on the head and neck. There is a second articulation between the lesser trochanter and the posterior surface of the acetabulum (coloured blue) and surrounded by osteophytes. Whilst there is not much change to the iliac cortex at the femoral head articulation (yellow) the (blue) lesser trochanter articulation forms a raised plaque, indicative of a type 3 false acetabulum (Mitchell & Redfern, 2007). This condition would have caused shortening of the limb.	*Congenital dislocation of the hip. This specimen has no history. It consists of the right pelvic bone and upper half of femur of an adult (probably female). The acetabulum is small and undeveloped, because the head of the femur has not remained there; instead it has rested on the iliac bone just beneath the origin of the gluteus minimus, where it has been flattened by pressure. The articular surfaces of this false joint have been coloured yellow. A second articulation (coloured blue) has formed between the lesser trochanter and the posterior surface of the acetabulum. These false joints are surrounded by many osteophytes from chronic osteoarthritis. When these two bones are articulates it becomes obvious that there was a severe abduction deformity of the right lower limb.*
RB 10	humerus and ulna, fused	A humerus and ulna that have fused smoothly at an oblique angle at the elbow joint.	
RB 11	Proximal epiphysis of a right	Impacted fracture to the neck of the femur. The neck has been driven into the rest of the epiphysis, shortening it, and the head has been	*Femur. Extracapsular fracture, impacted and cured. The great trochanter is split by the neck, which*

	femur, fracture. 1882-1913 (Bush).	pushed downwards. There is abnormal bone growth along the intertrochantic line, causing a rim around the depression caused by the impact. There is also some unusual bone growth around the lesser trochanter and medial shaft.	*was driven into it, the head was depressed till the neck forms nearly a right angle with the shaft. The posterior half of the great trochanter and the lesser trochanter, with a portion of the shaft adjacent, has been detached as one fragment. The history of the case is interesting: Patient was admitted under Mr. Bush, and remained in for six weeks. It never could be decided whether he had a fracture or not. He could on admission lift his leg off the bed. He came in again a year later and died- when this specimen was obtained.*
RB 12	proximal femur, amputation.	This specimen consists of a proximal femur displaying evidence of a healed amputation. The shaft ends abruptly and the end of the bone has healed over, sealing the marrow cavity and showing that this operation was performed many years before death. The bony growth is smooth and there is some lipping on the posterior surface of the shaft.	*RB12: Femur, 21 years after amputation.*
RB 7	Calvaria 1876-1907 (shaw) 1879-1897 (smith)	This calvaria exhibits four round holes, two similar sized and one larger one on the left parietal and one much smaller on the right. The regular shape of these apertures are distinctive of trepanation, the largest one exhibits a groove around the rim, possibly indicative of the scraping method (Buikistra & Ubelaker, 1994, p. 160). The two similar sized holes on the left parietal have the sharpest rim and were therefore concluded to be the most recent. Working from left to right the maximum and minimum diameters of the holes were 23-21mm, 24-23mm, 27-25mm and 11-7mm.	*Skull cap. There are four trephine holes, that on the Rt. Side was made 2 years or more before death, while those on the Lt. were about 18 months old. They all show bevelling off of the bones, with scarcely any tendency to repair; this is the condition usually found in the skull, as the periosteum is but loosely attached to the bone, and not very vascular, the chief blood supply coming from the veins of the diploe, and the new bone when formed is seen to grow at the margins of a fracture for this reason. The patient was under Dr. Shaw and Mr. Greig Smith, suffering from epilepsy.*
RB 9	Mandible and maxilla, ankylosis of temporom andibular joint.	Fusion of both the temporomandibular joints. Dentition: RP_4 was lost antemortem as the socket has completely healed over. Only RM_2, RM_3 and RM^3 are still present, the rest appear to have been lost post-mortem. There is a large amount of calculus on the buccal side of RM_2, a moderate amount on the remaining dentition	*Base of skull and lower jaw. Bony ankylosis of both temporo-maxillary articulations. History: The patient, a man of 40, was under Dr. Shaw for arteriosclerosis, from which he died. He had received a severe injury to his lower jaw 17 years before, and*

	1876-1907	(Brothwell, 1981). The fusion of the jaw would have considerably restricted movement.	*this took a considerable time to get well. Since then the mouth has never been opened; he could take fluids and minced solids between his teeth and continued in good health for many years. Most of his teeth remained and got thickly covered by tartar, and his mouth got very foul. This must be a very rare specimen.*
RC 14	right tibia, osteomyeli tis	This specimen consists of the diaphysis and distal end of a tibia, presented in a plastic display case. The involucrum is fairly smooth and extends up the posterolateral shaft and on the medial side above a break in the sequestrum near the proximal end of the fragment.	*Tibia. Acute necrosis of portion of shaft, not yet quite separated.* *Tibia- osteomyelitis. Acute necrosis of portion of shaft, not yet quite separated..*
RC 30	right humerus	A humerus that has been bisected longitudinally down the mediolateral axis of the bone and displayed open, joined by wire. The lateral portion of humerus is missing the proximal end and both halves exhibit medullary osteosclerosis. The medullary cavity is almost completely cortical bone, with a small channel of cancellous bone in the proximal half of the shaft and a cavity just below the midshaft. The carious lesions connecting this cavity and the medial bone surface are suggestive of an infection.	*Osteoplastic osteitis or sclerosis. Chronic osteomyelitis of the humerus. Sclerosing type with marked thickening of the cortex, at one point almost obliterating the medullary cavity. Several cloacae present, also periosteal new bone formation in lower third.*
RC 31	Distal femur, proximal tibia and patella, osteomyeli tis.	Ankylosis of the knee joint has fused these three bones. The joint has been cut mediolaterally to show the internal structure of the fused joint. The femur exhibits severe osteomyelitis with several cloacae and an irregular bone surface. The thin sequestrum can be seen through these holes. From the superior view of the femur, the sclerosis of the medullary cavity can be seen. *Note:* The number-label of this specimen has misleadingly been applied upside down.	*Femur and knee joint. Chronic osteomyelitis of femur. Several cloacae present through which central sequestrate can be seen. The disease has spread to the knee joint resulting in bony ankylosis of the joint, and of patella to femur.*
RC 32	right tibia and fibula, calcaneus and talus, osteomyeli tis	Presented in a broken, unsealed glass jar. The tibia exhibits extreme distortion and destruction, there is no indication of a separation between cortex and cavity and the shaft has expanded anterior-posteriorly with very thin and irregular bone growth which contains many holes. The medial tibial shaft almost nonexistant and there are several carious lesions on the lateral aspect. There is also irregular bone growth on the fibula, which has become fused with the tibia at one point on the proximal shaft, two points at the midshaft and completely at the distal end. There is also	*Tibia and ankle joint. Chronic osteomyelitis of tibia showing extensive cavitation of the bone, the ankle joint and substragaloid joint have become involved resulting in bony ankylosis.*

		ankylosis of the ankle joint, with the fused talus and calcaneus being present.	
RC 33	tibia, necrosis	One of the specimens presented in a sealed glass jar. The bone is presented in two fragments, the obscured nature of the specimen suggests that this was not intended and the bone has broken whilst in the jar. The larger fragment consists of the proximal tibia (?) where the involucrum has enveloped the epiphysis and extends down the diaphysis on one side. The second fragment consists of only involucrum, which appears to have enveloped the distal end of the bone and may have once attached to the other involucrum midway down the shaft. The sequestrum is visible as the involucrum has become separated.	*Tibia, necrosis of entire shaft; this specimen was quite ripe for operation, the sequestrum could easily have been taken away had it been divided in the middle… But then it was before the days of anasthetics*
RC 34	Distal tibia 1793	This specimen exhibits very finely porous reactive bone growth. The proximal shaft exhibits longitudinal striations. The periosteal bone growth has a porous, coral-like appearance and is distinguishable from the hole-ridden cancellous bone at the distal end (dead?). There is an inscription on the proximal shaft: '*N 354. Sarah White est 11. December 21. 1793. Mr Allard*.' The specimen is presented in a sealed glass jar.	*Tibia. Lower end is carious and has several pieces of necrosed compact bone buries in a new periosteal deposit, and in their neighbourhood there is a good deal of rarefying osteitis. The specimen involves the ankle joint; in many ways it is more suggestive of tubercular disease than anything else; it would be difficult to say whether this began in the Tibia or spread to it from the ankle joint, having started in one of the bones of the foot. The original note in an old catalogue under carionecrosis was, - Sarah White, aged 11, admitted to the infirmary on Dec. 21st. 1793 and operated on a few days afterwards by Mr. R. T. Allard. She had suffered from a bad leg for 2 ½ years and showed other marks of scrophulous diathesis. She did well.* *Lower end of tibia – chronic bone infection. Several areas of necrosed compact bone buried in periosteal new bone formation. The history suggests that the infection was of tuberculous origin, stating that the patient showed "other signs of scrophulous diathesis". The amount of new bone formation is against this diagnosis, but may be accounted for by secondary*

			infection with other organisms via sinuses, a common occurrence in those days (1793).
RC 35	Distal femur, tibia, fibula, talus and calcaneus. 1790	The knee and ankle joint have become ankylosed. Osteomyelitis of the tibia. The sequestrum is visible through the porous involucrum and several large flakes of dead bone have been tied onto the specimen to show the exfoliation. There is a brown-black area on the most proximal flake, markedly different from the white colour of the rest of the bone. There appears to be partial epiphyseal fusion on the distal femur, proximal tibia and distal tibia and no fusion on either epiphysis of the fibula, suggesting that the individual was under 14 years of age (Buikistra & Ubelaker, 1994). Consultation of the accompanying volumes confirms that she was 12 years old. There is an inscription on the femoral shaft: '*No. 351. Mary Herbert, age 12. November 1790. Mr R. Smith's patient.*' Presented in a sealed glass jar.	*Necrosis of the lower end; the suppuration in this case has been long continued, and a mixed result has taken place – Rarefaction in some situations, sclerosis in others and deposit of new bone. The upper cut section of the bone shows sclerosis of the spongy medullary bone.* *Tibia. Extensive chronic osteomyelitis involving the entire shaft. The knee joint and ankle joint are ankylosed. There is extensive sequestration and large flakes of bone are being exfoliated from the subcutaneous aspect of the bone, there was obviously an extensive ulcer here, the blackened area of bone forming part of the floor of the ulcer. There is very little new bone formation. This variety of osteomyelitis which used to be known as acute necrosis is seldom seen nowadays (date 1790).* *Bones of the lower extremity. Note made by Richard Smith: Subject, Mary Herbert, aged 12, Nov. 6th 1790. The motion of the knee and ankle joint being lost, large exfoliations appearing on the Tibia, and that bone being very extensively diseased, the limb was amputated directly after admission. The stump healed well, after a small exfoliation has come away.*
RC 36	Right femur, periostitis.	There is periosteal bone growth around the entire shaft, which protrudes in a bulbous shape a noticeable distance from the large piece of dead bone forming the distal shaft. This bulbous shape suggests the presence of pus, confirmed by consulting the accompanying volumes. The epiphyseal lines for the distal femur and femoral head are still visible, indicating that the individual was no younger than 14 but no older than 23 (most likely to be under 21 due to the distal femur) (Buikistra & Ubelaker, 1994).	*Large piece of dead bone at lower end of Femur, and around this and higher up a great amount of new, periosteal deposit. The lower part of this had evidently been separated by a bed of pus from the dead bone beneath: acute necrosis of femur in this situation is often associated with very little ensheathing new bone, on account of the loose texture of the periosteum in this*

		Presented in an unsealed glass jar.	*situation, which does not throw out bone readily.*
RC 37	long bone, osteomyelitis	Presented in an unsealed glass jar. A huge involucrum with several large openings, exposing the sequestrum. The involucrum has been cut and separated longitudinally by wire, possibly in order to display the remaining sequestrum that it encased. Through the openings it is possible to see some trabecular bone growth across the medullary cavity.	*(written: Chronic osteomyelitis with exclusive sequestration centrally) it is cut to show the compact structure of the new bone.*
RC 41	distal femur, osteomyelitis 1814	Seems to form a complete left femur with #RC 41 (74), the pathological growth appears to match and the presence of the same type of string near the potential separation site also indicates this. The involucrum envelops the proximal shaft, with a smoother surface on the anterior. The growth on the posterior shaft is larger, extends further down the shaft and contains several cloacal openings, exposing the medullary cavity. There is no separate sequestrum. The distal epiphysis surface is not present, although some of the underlying trabecular bone is. There is an inscription on the unaffected distal shaft; although most of it is illegible some words can be discerned. The text appears to contain two names: (potentially 'The femur of') 'Sebastian de l'amour' and 'Dr Henry Gresley Emery'. The latter was confirmed by mention in (Munro Smith, 1917)	*Femur. Necrosis of diaphysis, extensive and very irregular deposit of new bone with cloacae. This beautiful specimen is of historic interest. The Subject was Sebastian de Chamours, (written: or l'amour?I), chasseurs Brittanique. The limb was removed by Mr Gresley Emery, July 10th 1814. This was the first amputation at the hip joint performed in England. Mr Emery had been educated at the Bristol Infirmary.* *Femur: chronic osteomyelitis. (amputation by disarticulation at the hip). In this bone there is necrosis of the diaphysis to form a sequestrum, and there is extensive and irregular deposit of new bone with cloacae. This beautiful specimen is of historic interest. The subject was Sebastian de l'amour, one of the Chasseurs Brittanique. The limb was amputated by disarticulation at the hip joint, on 10th July, 1814, by Mr. Henry Gresley Emery, of Banwell. Mainly description from Munro-Smith.*
RC 41 (74)	proximal femur, osteomyelitis	Forms a complete femur with #RC 41. The involucrum encases the proximal shaft, beginning just inferior to the lesser trochanter. In concordance with #RC 41 the anterior involucrum is considerably smoother and thinner than the posterior. There are two cloacal openings; one situated antero-medially, another larger posteromedially	
RD 11	Spine	This specimen consists of 7 ½ thoracic vertebra, articulated and bisected longitudinally down the midline. Although there is a lack of curvature in	*Dorsal vertebrae- the dried half of the previous specimen. History. The man, aged 55, was admitted under*

	1873-1906	the spine, there are other features that suggest tuberculosis. There is a lesion extending into the vertebral bodies from the articular surface between the vertebral bodies of the 5th and 6th (numbered from superior to inferior) vertebrae and a separate degradation of the 4th. The external surfaces of the vertebral bodies appear unaffected. There is slight wedging on the 3rd and 4th vertebrae, possibly due to the trabecular destruction in the 4th. This could have been the site of collapse and kyphosis if the disease was allowed to develop further.	*Dr Waldo for general weakness and wasting. He had a small pleural effusion on the left side, and some puspuric spots about the body and girdle pains. A note was made that no physical sign of spinal caries could be discovered, which illustrates how very latent a disease this can be, and also that his age should not exclude this disease, but usually spinal disease at his age, and especially when associated with pain radiating round the intercostals, turns out to be malignant disease. It is to be noticed that the spinal cord was not at all affected and no curvature had developed. P.M. Vol.15. p. 132. Med. Vol. p…..*
RD 12	Left femur and pelvis, fused.	The preparation of this specimen makes it difficult to understand. There is a longitudinally bisected femur that has become fused with the iliac blade of the pelvis. The femur seems to have become displaced from the acetabulum. The internal view shoes that the boundary of denser bone where the two parts join is almost imperceptible.	
RD 13	Spine, tuberculosis, juvenile.	There is severe degradation to the anterior aspect of the vertebral bodies and there is a sharp anterior bend, possibly caused by the collapsed vertebral body at the apex. The neural arches have been separated during preparation.	*Dorsal Vertebrae. There is an acute curvature around the 5th, 6th, 7th and 8th, the bodies of the 5th and 6th and 7th having almost disappeared. The curvature is less than a right angle, and even with this laminae and spinous processes do not form a sharp angle but a rounded curve, so that the term angular is not strictly speaking correct; an uncommon feature in this case is the extensive caries of the front of many vertebrae (2nd to 10th), due to the tubercular material spreading along the sides of the vertebrae, and involving them secondarily.*
RE2	left femur 1797	This specimen has been cut laterally just below midshaft and the two sections have been separated by a wire, in order to display the inner structure. The cortex has thickened, with an internal ring of cancellous bone and a small medullary cavity. The surface texture of the bone is porous and coral-like. The texture changes to	*Femur. The pathology of this fine specimen is doubtful. It certainly shows chronic, diffuse osteitis of the shaft, the cause of which is not evident. In some respects it resembles Paget's "osteitis deformans", in others, chronic syphilitic periostitis. It was*

		a sharper, more protruding surface following the linea aspera on the posterior shaft.	*presented to Mr. Richard Smith in 1797, and marked by him, Internal exfoliation. This name would suggest central necrosis, but then the entire absence of any internal ulceration or even any effort at the formation of a cloaca, is against to idea.*
RE3	right femur, syphilitic node.	This femur has been bisected longitudinally down the mediolateral axis of the bone. On the medial proximal shaft there is a smooth swelling. Around the distal shaft there is a more pronounced and porous enlargement of the periosteal bone surface. As the bone preparations have made the interior of the shaft visible it is clear where the original cortex once ended.	*Femur. Sawn through longitudinally, to show the localised thickening of the compact bone beneath the periosteum, the result of a syphilitic node; the old line of the compact bone can just be seen running up next the cancellous bone, but it passes soon imperceptibly into the new bone.*
RE5	Right tibia and fibula, syphilitic node. 1840	The medial tibial shaft surface exhibits the longitudinal striations and fine pitting of tibial periostitis (Roberts & Manchester, 1997), in addition to a swelling on the lateral side of the anterior crest, at roughly midshaft. The fibula also exhibits several plaques of new bone along it's anterior crest, one at midshaft and two at the distal end. There is a very faint inscription on the posterior tibia. The inscription on the proximal shaft reads: 'Fungus haematodes?', the inscription on the distal shaft appears to be the name of the patient and the doctor they belonged to but the writing is too faint to discern. The term 'fungus haematodes' was introduced in 1803 to limb tumours that were very vascular and fungating in nature (Hajdu, 2007)	*Tibia and fibula. The former showing a hard node, syphilitic in origin. There is a circumscribed formation of new bone over the centre of the shaft, which imperceptibly bevel off. The surface is rounded smooth and compact. The patient, Andrew Johnston, aged 27, was under Mr Lowe in May 1840, and was said to be suffering from Fungus Haematodes.*
RE6	Calvaria, syphilis.	This specimen exhibits several lesions where the bone has thinned and eventually broken through. The distribution is mainly on the frontal and right parietal. The endocranial surface is finely porous.	*Skull cap. The frontal and parietal bones show extensive scars, left after the exfoliation of large pieces of the external table; as it usual in this situation, very little new bone is deposited, contrasting in this respect with what takes place under similar conditions in the long bones; in many places the necrosis has extended through both tables. The inner surface of the bone is unaffected*
RE7	Calvaria, syphilis.	This calvaria has several (caries sicca) depressions, especially along the midline. These depressions do not affect the inner table but the endocranial surface exhibits microporosity all over and large pores on the frontal.	*Skull. Several pieces of exfoliated dead bone, one of which is very large and measures 3in. by 4 in. Patient died after the large piece was removed, from haemorrhage.*

			The black colour is in great part due to dust, but in these cases the bone is often quite black, from exposure to air and discharges, long before it separates. Written: skull. Syphilitic necrosis- less marked changes than the previous specimen. The outer table only is affected (RE6 = previous)
RE8	left frontal and parietal 1796-1843	This specimen is of an unfused frontal and left parietal (held together by wire). The skull has been bisected down the midline to show the thickening of the trabecular mass of both bones. At the coronal suture the bones are of a normal thickness. The ectocranial surface exhibits microporosity and there are large pores on the inner surface of the parietal. Inscription: '*Thickness rather more than 3 {illeg.}*' and internally: '*Mr Richard Smith, Bristol Infirmary*'.	*Skull cap. This specimen is one of Richard Smith's, and it without a history. It had been thought to be a case of Paget's disease, but the fact that the thickening is so localised while the rest of the bones are natural negatives this idea. There has evidently been at some previous date a chronic osteitis, which has thickened very much certain regions, chiefly the frontal and parietal eminences, so that it very closely resembles the natiform skull of congenital syphilis. The sagittal suture has been obliterated, which takes place often in that disease; as a rule, however, these changes disappear as the patient reaches adult life. Another point is the fact that the inner table shews the presence of thickening, whereas in Parrot's nodes the outer table on is said to be affected. Almost certainly an example of Morgani's syndrome*
RG 12	Right femur, achondroplasia and rickets. Died 1815, given to RS in 1820.	This femur is considerably smaller in size than its complete epiphyseal fusion would suggest (Buikistra & Ubelaker, 1994) due to achondroplasia. The femur bows anteriorly and there is a marked ridge on the posterior shaft (Ortner, 2005). There is an inscription on the anterior shaft: '*Femur of a dwarf from Staple Hill near Mangotsfield givn to R.S. by Mr Henry Jeffries surgeon July 1820. She was about 3 feet 6 inches high, had a child in 1813, a crotchet case. Died in 1815*.'	*Femur. A very good example of rickets. This disease seldom persists actively for more than a few years; after this what are found are the deformities left after the child has recovered, and also some attempts at repair of these deformities. A child with curved tibiae, as it grows older, often shows much straighter bones due to the new bone being deposited most on the concavities, and less on the convexities. Often a well marked, bony ridge or buttress formation can be seen in the concavity, and that is shewn [sic] to some extent in this specimen. The bone is of normal weight for its size. The head of the bone has become*

			depressed to less than a right angle. The subject was a Dwarf who lived at Staple Hill, near Mangotsfield, and this bone was given to Mr. R. Smith. by Mr. Henry. Jeffries, Surgeon, 1820. She was about 3 ft. 6 in. high, and had a child in 1813, a crotchet case, and died in 1815.
RG 13	Cervical vertebrae	Two cervical vertebrae displaying ankylosis of the left transverse processes, vertebral bodies and laminae.	*Spine. Cervical.* *Ankylosis has taken place on the left side, not only at the articulation, but also of the bodies and laminae; the upper articular facet on the left side shows the polished, eburnated surface often seen in this disease.*
RG 14	Spine, osteoarthritis	4 vertebral bodies, cut longitudinally so that only the anterior spine is present, displaying large, bony lipping between the vertebral bodies, fusing them mainly on the right side but once on the left.	*Spine. Dorsal- osteoarthritis* *The bodies show a variety of buttress formation, not very uncommon in this disease. This gives rise to ankylosis.* *'Old specimen. M. 204'*
RG 15	Proximal femur, osteoarthritis.	This specimen consists of the proximal femur, bisected longitudinally to show the internal structure. The neck of the femur has almost completely disappeared under osteophytes extending from the head. There are several cysts below the articular surface and some eburnation due to presence of smooth, shiny patch. The internal view shows sclerosis of the cancellous bone, another symptom of osteoarthritis (Ortner, 2005).	*Head of femur.* *Showing marked osteoarthritic changes in the head is flattened and deformed, there is erosion of articular cartilage – eburnation of the underlying bone, and extensive lipping of the margins of the head. The cut surface shows numerous cysts in the substance of the head, a common finding in this condition.*
RG 16	left innominate, osteoarthritis	The left innominate, the iliac blade has been cut vertically although this doesn't appear to be for display purposes. The acetabulum has a porous internal surface which has been degraded on the anteromedial surface and exhibits eburnation on the posterolateral. There is bony lipping around the edge of the acetabulum and porous woven bone growth. The ischial tuberosity has uneven, plaque-like bone formation on its superior half. The pubic region indicates that the individual was male with a lack of ventral arc, subpubic concavity and the medial surface of the ischiopubic ramus was broad and flat (Phenice, 1969). The pubic symphyseal face is smooth with a sharper rim on the dorsal margin, a slight depression on the superior part of the face and a	*Osteoarthritis.* *A beautiful example of eburnation of the roof of the acetabulum in the weight bearing area. Elsewhere, erosion of articular cartilage and lipping of the acetabular margins can be seen.*

		complete oval outline, suggestive of age between 45 and 49 according to Todd (1921a) and between 27 and 66 (mean = 45.6) for the Suchey-Brooks (1990)system.	
RG 18	Pelvis, femur, patella and tibia. Congenital dwarfism and rickets.	This individual's lower limbs are exceptionally small. The bones are presented in a plastic case and have been arranged incorrectly so that patellas face posteriorly and the tibias are subsequently incorrectly articulated. This creates a confusing specimen. The femurs are flattened mediolaterally and bow anteriorly, the tibias bow posteriorly (posteriorly in this configuration, would have been anteriorly in life), indicative of rickets. There is a large amount of osteoporosity on the distal femurs. The distal femurs, proximal tibias, femoral heads and greater trochanter and os coxae (apart from the ischium-pubis union) are all not fully fused, suggesting that the individual was under 21 but over 14 (Buikistra & Ubelaker, 1994).	*Healed Rickets of Legs.* *This is an antique specimen with no history. It consists of the pelvic and lower limb bones, without the feet or fibulae. There is symmetrical forward bowing of the femora, with well marked buttressing in the concavity, due to healing, and backward bowing of the tibiae (which is unusual in rickets). The radiographs show that the age of the individual was probably more than 14 years:* 1. *The centre of ossification for the iliac crest normally appears after puberty and is absent here.* 2. *The junction of the ischial and pubic rami (not shown in this view) is completely ossified. This normally occurs in a 14 to 16 year age period.* 3. *The head of the femur is well ossified but not yet joined to the neck.* 4. *The centre of ossification for the great trochanter (not shown here) is practically united to the shaft.* 5. *The outer epiphyseal bony centres are present but not yet united to the shafts.* *In the presence of disease, ossification is sometimes delayed, and so the age may be some years more than 14.*
RK 8	calvaria, neoplasm	A calvaria with a rounded growth on the right frontal. The growth projects both endocranially and ectocranially.	*This specimen illustrates one of the varieties of benign tumours which may occur in bone. It is known as an ivory or compact exostosis (or osteoma) and is much harder than the cancellous type. This specimen grows from the frontal bone. It is*

	composed of hard bony tissue. Ivory exostoses occur on the skull or bones of the face.

APPENDIX I: EVIDENCE OF ETHICAL APPROVAL

Research and Enterprise Development

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Application Review

ID	Submitted on behalf of	Name	Faculty	Department	Supervisor
42841	Kitty Marryat	Miss Kitty Marryat	Faculty of Arts	Anthropology	Professor Katharine Robson Brown

Status
Signed off
Date added
Oct. 5, 2016
Signed off date
Oct. 5, 2016
Is this a student project?
Undergraduate
Project title
A bio-historical study of a collection of pathological human skeletal remains from the Bristol Royal Infirmary.
Estimated start date
Oct. 17, 2016
Duration (months)
6
Project outline
The Bristol Royal Infirmary has taken the decision to move some of its more historical anatomical collections into the care of other institutions. As part of this the collections management group have identified a collection of mixed human pathological skeletal material that will be disposed of. The specimens are all dry, briefly catalogued, accompanied by some medical notes, but other than that unstudied. The aim of this project is to assess the pathological status of the material, recommend a strategy for curation, undertake a photographic archive, and undertake an investigation of the historical context of their collection and curation at the BRI. This will improve our understanding of the development of anatomical research and teaching collections in the 19th-20thC in Bristol.