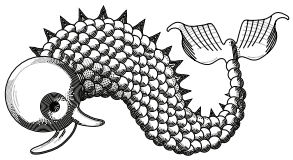
THE 18TH CENTURY BAPTIST CHAPEL AND BURIAL GROUND AT WEST BUTTS STREET, POOLE

By Jacqueline I. McKinley



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with contributions from

Kirsten Egging, Sue Johnson, Lorraine Mepham, Catherine Chisham, Rachel Every, Stephanie Knight, O. Röhrer–Ertl, and Andrew S. Wilson

illustrated by

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Front cover: Poole Harbour in the late 18th century (by permission of Dovecote Press)

Back cover: Hill Street Baptist Church (1815); Lifeboat Support Centre and RNLI Stores (on site of former burial ground); Commemorative stone marking site of Baptist burial ground (1870s)

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SUMMARY

This report covers the excavation and analysis of remains recovered from an intact, 18th century Baptist burial ground in Poole, Dorset, adjacent to the headquarters of the Royal National Lifeboat Institute (RLNI), the site owners. The excavation was occasioned by the expansion of the headquarters, including the construction of the RNLI training college, a new Lifeboat Support Centre, and stores.

The people buried in the West Butts cemetery had chosen to distinguish themselves from their fellow citizens by their religious Nonconformity. The aims of the excavation, analysis, and documentary research were to try and establish who they were, how they had lived, their status within the community, and if/how their burial rites may have otherwise distinguished them.

The sea had represented the main influence on the town's economy and success since the 12th century, and by the 18th century it was one of the country's major ports with a flourishing coastal, Mediterranean and New World trade, as well as a thriving fishing industry. A vast network of mercantile trading and associated manufacture developed in response to the maritime trade and the inhabitants of Poole were regarded to be of '... great opulence and respectability'.

The West Butts Street Baptist congregation was established in 1735, with 15 members including the congregation's one and only Pastor, John Bird. On the latter's decline and eventual demise in the 1780s, the congregation dwindled and the chapel was demolished. The burial ground proved to have served two Baptist communities. The Hill Street congregation was founded in 1804 and appears to have continued to use the West Butts cemetery, apparently until its formal closure in 1855. The burial ground had remained in the care of Hill Street until the 20th century and was largely undisturbed until the current development.

The general wealth of documentary information regarding 18th century Poole and its Nonconformist and Baptist inhabitants includes few direct conclusive links with the West Butts congregation. It has, however, been possible to form an impression of the world in which they lived and worshipped which, together with the excavated evidence, has enabled some aspects of the lives of the cemetery's population to be gleaned.

The chapel and cemetery were situated on the town's north-west foreshore overlooking Longfleet/Holes bay. All or part of 81 inhumation graves were excavated, containing the *in situ* remains of 83 burials (100 identified individuals). There was intercutting between graves, but relatively little disturbance to the burial remains. Some disturbed bone was redeposited in adjacent charnel pits. Most graves lay on a SW–NE alignment, at right-angles to West Butts Street, with a few, possibly later ones, set parallel to the street. Two major concentrations of graves were observable, with several pairs or smaller clusters, suggesting deliberate groupings. Several graves had been used for the burial of more than one individual.

Most burials had been made coffined and most bodies shrouded, the garments having been pinned together. The coffins, predominantly of elm but including some yew, were simply decorated using locally produced grips and grip plates. Upholstery pins had been used as decorative detail or to spell out biographical details in the coffin lid. Some use had also been made of sheet iron lettering and tin-dipped breast plates. Very little of the biographical data was legible.

Some 72% of the cemetery population was adult (>18 yrs), with an median age range of 30–55 yrs, though a minimum of 15% were over 50 years old. Females (61% adults) greatly outnumbered males (36%). The demographic and pathological data suggest relatively low fertility rates and better infant health than that seen in larger cities. The preponderance of females may reflect one or more factors, including the possibility that many never married (potentially reflecting the early Baptist practice of endogamy) or that they were married to seamen who spent a substantial amount of time away from home. Had the congregation's members included many sailors, the loss of life at sea would not be marked by graves on land. Women commonly outnumbered men in early Nonconformist congregations, possibly, in part, due to political, social, and economic consequences for males under the 1661 *Corporations Act*.

Pathological data suggest that infants and young children were generally well nourished and not subject to repeated stress from illness. The condition of the dentitions implies a non-self-cleaning diet rich in refined carbohydrates (eg, wheat flour and refined sugars). Males appear to have been employed in physically stressful activities involving heavy lifting and carrying and strong upper limb movement, the work probably often being undertaken within a confined space. Females seem more likely to have been involved in close work resulting in repeated strain on the neck and using often strong movements in the upper limb. Several females were so small and gracile they do not seem to have placed much, if any, physical strain on the skeleton. Overall, it appears those burying their dead at West Butts, whilst unlikely to have formed the upper echelons of Poole society, were probably relatively 'comfortable' trades people.

No trace of the demolished chapel survived, though its probable location was identified, as were the the cemetery's probable boundaries.

FOREIGN LANGUAGE ABSTRACTS

Ce volume décrit les excavations et l'analyse des vestiges trouvés sur un lieu d'inhumation baptiste du 18ème siècle intact situé sur le pourtour nord-ouest de Poole. L'assemblée des fidèles de West Butts Street fut fondée en 1735 par 15 membres identifiés par leurs noms, mais s'amenuisa dans les années 1780 suite à la disparition de leur seul et unique pasteur, John Bird. La chapelle fut démolie mais le lieu d'inhumation servit par la suite à une deuxième communauté baptiste, Hill Street, fondée en 1804, et ce jusqu'à la construction de leur propre église.

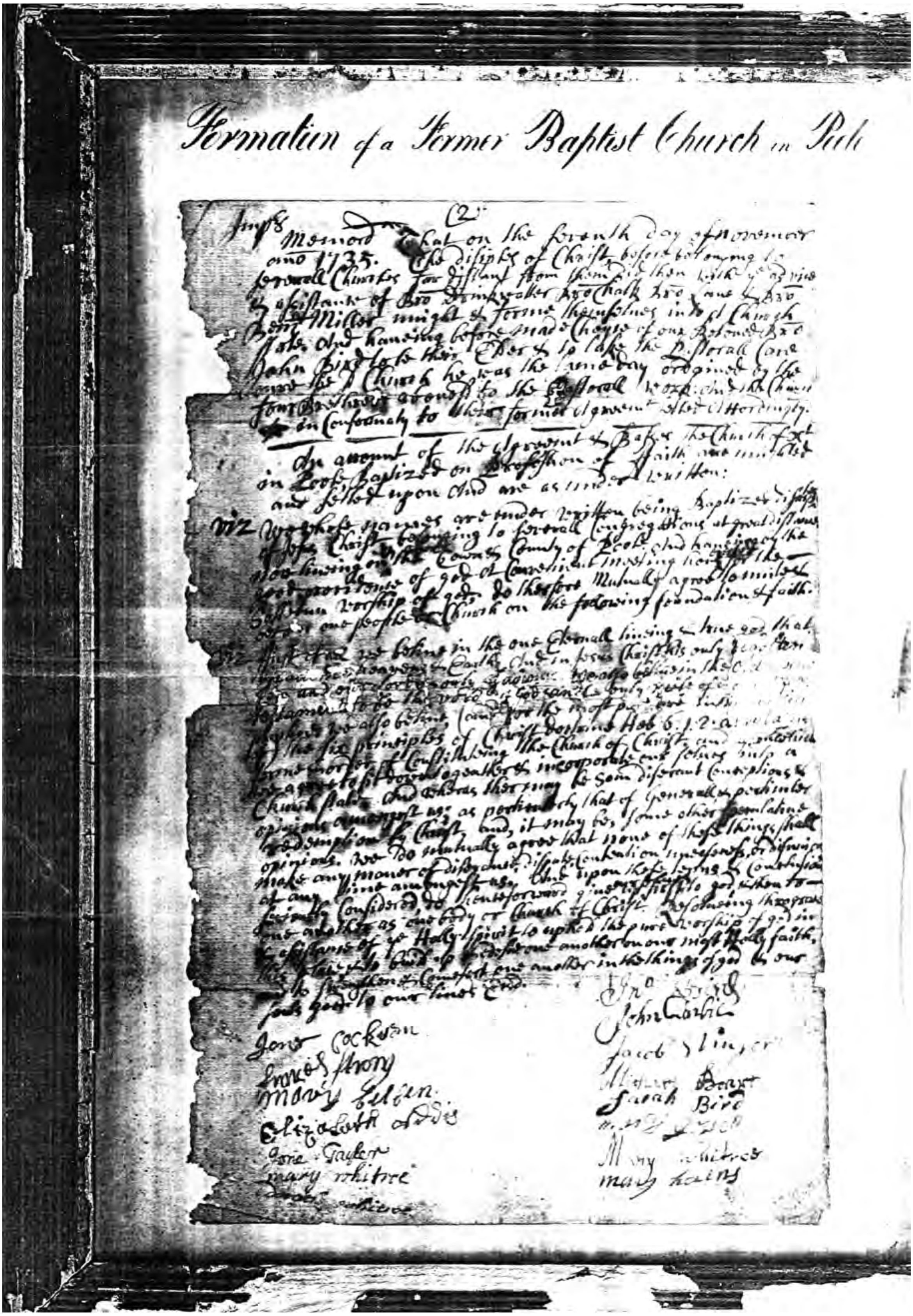
Les recherches documentaires qui les accompagnèrent rassemblèrent une mine de renseignements concernant la ville de Poole au 18ème siècle, sa population, sa situation économique et la propagation ainsi que l'étendue du mouvement non-conformiste et baptiste dans la ville, mais il n'y avait que peu de liens directs et probants avec l'assemblée de fidèles de West Butts. Il a cependant été possible d'arriver à une impression du monde dans lequel les membres de cette congrégation vivaient et professaient leur foi, ce qui, associé aux témoignages provenant des fouilles, y compris l'analyse ostéologique des cent individus identifiés, a permis de glaner certains aspects de la vie de la population du cimetière.

Traduction: Annie Pritchard

Dieser Band beschreibt die Ergebnisse der Ausgrabung und Analyse der Funde eines ungestörten, am nordwestlichen Stadtrand von Poole, Dorset, gelegenen Baptisten-Friedhofs des 18. Jahrhunderts. Die West Butts Street-Gemeinde wurde 1735 von 15 namentlich bekannten Mitgliedern gegründet, löste sich aber in den 1780iger-Jahren nach dem Tode ihres einzigen Pastors, John Bird, auf. Die Kapelle wurde abgerissen, aber der Friedhof wurde von einer anderen, 1804 gegründeten Baptistengemeinde, Hill Street, weiterbenutzt, bis 1813 deren eigene Kirche fertiggestellt war.

Die begleitende Auswertung von schriftlichem Quellenmaterial erbrachte eine Vielzahl an Informationen über Poole im 18. Jahrhundert, seine Bevölkerung, seine wirtschaftlichen Verhältnisse und der Ausbreitung der Non-Conformity- und Baptisten-Bewegung in der Stadt. Es ergaben sich allerdings nur wenige direkte Verbindungen und Aufschlüsse zur West Butts Street-Gemeinde. Jedoch war es möglich, einen Eindruck der Welt, in der die Gemeindemitglieder lebten und ihren Gottesdienst ausführten, zu vermitteln. Zusammen mit den Grabungsergebnissen und der osteologischen Analyse der 100 identifizierten Individuen war es so möglich, einige Aspekte der Lebensgeschichten der Friedhofspopulation nachzuvollziehen.

Übersetzung: Jörn Schuster



Formation of a Former Baptist Church in Peele

(2)

Memorand That on the seventh day of November anno 1735. The disciples of Christ before belonging to severall Churches far distant from them [illegible] ... Miller [illegible] formed themselves into a Church State. And having before made Choice of our Beloved Bro John Bird to be their Elder & to take the Pastorall Care [illegible] Church he was the same day ordained [illegible] to the Pastorall work [illegible] in Conformity to their former agreement [illegible] Accordingly.

An account of the agreement [illegible] the Church [illegible] in Peele Baptized on Profession of Faith [illegible] and settled upon And are as under written:

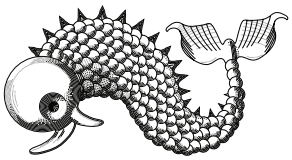
viz We whose names are under written being Baptized disciples of Jesus Christ belonging to severall Congregations at great distance [illegible] County of Peele [illegible]

[illegible]

Jono Cockson
[illegible]
Mary Gelsen
Elizabeth [illegible]
Jane Tayler
mary whitree

Jno Bird
John [illegible]
Jacob Slinger
[illegible]
Sarah Bird
[illegible]
Mary whitree
mary [illegible]

BUTTS STREET CHURCH



‘

Imp[rimi]s
Memor[an]d[u]m That on the seventh day of november
an[n]o 1735. The disciples of Christ before belonging to
severall Churches far distant from them did then with the advice
& assistance of Bre[ther] Drinkwatter Bre[ther] Chalk Bre[ther] Sane & Bre[ther]
Benjamin Miller unight & forme themselves into a Church
State. And haveing before made Choyse of our Belovd Bre[ther]
John Bird to be their Elder & to take the Pastorall Care
over the s[ai]d Church he was the same day ordained by the
four Brothers abores[ai]d to the Pastorall work. And the Church
in Conformity to their former Agreen[en]t setled Accordingly.

An account of the Agreem[en]t & Bases ?(of) the Church of [Chris]t
in Poole Baptized on Profession of Faith and ?(unighted)
and setled upon And are as underwritten:

Viz *We whose names are under written being Baptized*
disciples of Jesus Christ belonging to severall Congregations at great distances
now liveing in & about the Town & County of Poole And haveing by the
good providence of god a convenient meeting ?(however) for the
Sollemn worship of god do therefore Mutually agree to
unite & ?(become) one people or Church on the following foundation & faith.

Viz *First of all we believe in the One Eternall liveing & true god that*
made the heavene & Earth. We also believe in the Old ?(& New)*
Testament to be the word of God and ?(the) only (illeg) of ?(our) … ….
(illeg) we also believe (and for the most ?(part are) … … …
of) the six principles of Christ doctrine - Heb 6.1: 2 as a … …
forme & order of Constituteing the Church of Christ, and upon which
?(we) agree to sit down togeather & incorporate our selves into a
Church State.. And whereas ther may be som different Conceptions &
opinions amongst us: as particularly that of General & particular
redemption by Christ, and it may be some other ?(speculative)
opinions we do mutually agree that none of these things shall
make any manner of difference, dispute, Contention, uneasiness or dissension
at any time amongst us. And upon these terms & const[it]union
?(seriously) Considered, do henceforward give up our ?(selves) first unto god & then to
one another as one body or Church of Christ Resolving thro grace
by assistance of ye Holy spirit to uphold the pious worship of god in
this place & to build up & edefie one another in our most Holy faith,
and to strengthen & Comfort one another in the things of god & our
souls good to our lives end.

Jone Cock?(ran)
Frances Strong
Mary Bellen
Elizabeth Addis
Jone Taylor
Mary Whitree
Dorathy Whitree*

Jno Bird
John Darbie
*Jacob Winzer**
Michael Board*
Sarah Bird
*Mary Joyce**
Mary Whitree
Mary Hains'

(transcription; Sue Johnson 2006)

CHAPTER 1
INTRODUCTION

England 1735 …

1735 saw the first performances of Handel's operas *Ariodante* and *Alcina*, and Rameau's *Les Indes Galantes*; the former in London the latter in Paris. The birth of one Bach (Johann Christian) in Leipzig – later to be known as 'the English Bach' – came in the same year as the composition of *3 Fugues for Organ with Pedal* by his older brother (Wilhelm Friedemann), both sons of the great Johann Sebastian (Kennedy 1996). The latter, together with Handel, Corelli, Vivaldi, and Rameau in France, formed the core of Baroque music composers. This musical form, with its harmonic complexities and emphasis on contrast frequently contained in the emergent setting of suites, *concerto grosso*, and sonatas, and so eloquently expressed in such pieces as the *Four Seasons* (1725), remained dominant until the middle of the 18th century (*ibid.*). Performances of at least some of these pieces would undoubtedly have been undertaken at venues in Poole as well as being attempted by enthusiastic amateurs at home. Less elevated but undoubtedly popular musical forms of the time included ballad operas such as John Gay's *Beggar's Opera* (1728; *ibid.*), the songs from which would doubtless have been sung in the street and taverns together with the many other extant broadside ballads and, Poole being a port, the inevitable sea-shanties.

The early 18th century (1720s) saw the development of a new literary form – the novel. The genre was seen as potentially damaging to young people and woman in particular, distracting them from interaction with other people and the outside world, reading being undertaken in the enclosed environment of a room, possibly lounging on another new arrival – the sofa. The greatest 18th century exponents of the novel included Sterne (*Tristram Shandy* 1759–1767), Smollett (eg, *The Adventures of Roderick Random* 1748), and Fielding (eg, *The History of the Adventures of Joseph Andrews* 1742 and *The History of Tom Jones, a Foundling* 1749). Daniel Defoe's *Robinson Crusoe* had been published in 1719, followed by *Moll Flanders* (1722). Samuel Richardson's moralistic but controversial *Pamela* (1740) was viewed as scandalous by many but caused a sensation and attracted a cult following similar to that of many modern television series. The common theme within these novels is the recounting of the realistic experiences of a middle-class individual; a theme generally illustrated in the titles of the books. Not all subscribed to this realism, however, Swift's satirical fantasy *Gulliver's Travels* being published in 1726. In 1735, the 25 year old Samuel Johnson married Elizabeth Porter (21 years his senior) and published his first work – albeit a French translation – his famous *Dictionary of the English Language* not being written until the middle of the century (1747–1755). Swift and Pope were both victims of the bookseller and publisher Edmund Curll, infamous for his unauthorised publications of writers' works and hack-written biographies of the famous, riddled with inaccuracies and inventions (http://en.wikipedia.org.wiki/Edmund_Curll). He also reflected the seedy side of publishing with his notorious pornographic publications, resulting in Defoe coining the phrase 'Curlicisum' for such items (*ibid.*).

Although the heyday of the 'Romantic' poets lay in the second half of the 18th–early 19th century, with the likes of Blake, Wordsworth, Coleridge, Byron, and Keats, the dawn of the genre lay in the late 17th and early 18th centuries, and has been linked to the scientific and technical revolution following the Restoration (1660). As economic and social changes increasingly distanced people from nature, so grew their appreciation of it in advance of its potential destruction/despoliation (Wright 1968). Pope's *Elegy to the Memory of an Unfortunate Lady* is considered one of the early examples:

> ...Then from his closing eyes thy form shall part,
> And the last pang shall tear thee from his heart,
> Life's idle business at one gasp be o'er,
> The Muse forgot, and thou belov'd no more!
> (*ibid.*. 1–3)

1735 saw the publication of Pope's satirical attack on the female sex – *Epistle to a Lady (Moral Essay II)* (Gordon 2002). The poem appears to specifically target aristocratic and wealthy women, criticising their constantly changing appearance – 18th century 'fashion victims'.

The success of his 1731 moral works *A Harlot's Progress* (country girl turned prostitute eventually dying from venereal disease and subject to a merciless funeral) prompted Hogarth to produce an eight-part sequel, *A Rake's Progress*, a similar moral tale of a wealthy young wastrel who gambles and whores away his fortune to end his life in Bedlam. The publication in 1735 had been withheld until Parliament passed a *Copyright Act* (*Hogarth's Act*) to protect artists against

Figure 1 Eighteenth century private houses in Poole. Top row: *Poole House (*c. *1730); the Mansion House (1746–9); West End House (mid-18th century).* Bottom row: *Beech Hurst Mansion (1746–9); Gollafre House, St James Close; town house on Great Quay*

cheap copies being made of their works. Hogarth's works reflect both the individual realities of life in certain parts of early 18th century England and the fears of what may follow moral dissolution – fears endemic within any society. Much of the art world, however, was dominated by the grace and refined pleasures characteristic of Rococo painting, commonly featuring woodland scenes and naked (but artfully so) women. In England, the slightly idealised portraits of the upper echelons by Reynolds and Gainsborough were not to appear until the middle of the century.

Another popular and accessible art form lay in ceramics. The production of decorative items and collectables had long been a feature of the industry but the 18th century saw the establishment of three major producers in the Potteries – Wedgwood, Spode, and Minton – who were to dramatically expand production and the range of goods available (Lewis 1987, 99–117, 144–50). The increasingly widespread popularity of coffee- and, especially, tea-drinking lent particular impetus to the development of new ceramic forms (Stead 1985, 22).

The heavily embellished Baroque architecture popular in continental Europe in the early 18th century never attained the same sustained popularity in England as it did across the Channel. The North, or Great, Quadrangle of All Souls College, Oxford, completed in 1735, was designed by Nicholas Hawksmoor, described as one of England's Baroque architects (Curl 1993, 232). The final design was, however, though described as '... classical in conception', in the Gothick style to ensure compatibility with the surrounding buildings (Curl 2002, pl. 44; http://www.all-souls.ox.ac.uk/about/architecture6.php). By the 1720s Baroque was being replaced by a return to the Palladian form which was to preside throughout the Georgian period (1714–1830; Curl 1993, 155, 232–3; 2002). 1735 saw John Wood laying out Queen's Square in Bath – a row of houses comprising a single Palladian facade with central pediment designed to look like a single villa – whilst also commencing work on Prior Park, overlooking the city, for his patron Ralph Allen. Several of the mansion houses, public buildings and smaller properties constructed in Poole during this period survive unmolested (Figs 1–3).

The mode of dress adopted in the 1730s was little changed from the early part of the century. Women's hair was neatly trimmed and arranged in curls close to the head, covered at all times by a small neat cap. The farthingale had been reintroduced by the 1730s, sometimes producing an absurdly large cage (Picard 2000, plate of 1741 court dress). The style was denounced from pulpits but worn by women at all


Figure 2 Eighteenth/early 19th century Inns and Taverns: New Quay and the Antelope, *High Street*

levels of society. Dress sleeves extended to the elbow, thereafter being formed of frills of lace. Dress necks tended to be very low; stays were also worn extremely low either outside the gown or with the gown laced up the front over a stomacher. Only stockings were worn below the dress; pre-1737 these were coloured, green being particularly popular, thereafter, white became and remained the colour to wear. A fan appears to have been an essential accessory. For men, the three-cornered hat – some simply bordered with braid – remained ubiquitous throughout the century, worn over a wig; bag-wigs, tie-wigs, and bob-wigs having supplanted the full wig of the later 17th century. Shirts with elaborately frilled fronts and cuffs were worn below waistcoats left fashionably open at the front to display the shirt and cravat. Coats had deep, wide, turned-back cuffs and ample pockets. Breeches were fastened at the knee over stockings, and gaiters were often also worn in colder months. High, stout boots were worn when travelling, together with long travelling cloaks (http:/www.englishcountrydancing.org/clothing).

The scientific and technical advances of the second half of the 17th century, led by the likes of Isaac Newton, Robert Boyle, and Robert Hook, lent further stimulus to continued enquiry and developments in all aspects of the sciences throughout the 18th century. 1735 saw the publication of Linnaeus's *Systema Naturae*, outlining his ideas for the classification of the natural world. In the same year George Hadley, an English Lawyer and amateur meteorologist, proposed the atmospheric mechanism by which the earth's winds circulated (Hadley Cell), recognising the crucial role played by the earth's rotation. John Harrison built the first of his marine chronometers (H-1), heralding a development in the accurate calculation of longitude which was to prove vital to the safety and success of both the merchant and Royal Navy (Sobel 1998, 78–9). A French mathematician, Charles de la Condamine, first described the use of rubber '... to make boots ... impervious to water ...' following a trip to South America (Musgrave and Musgrave 2000, 164). On a voyage to Siberia, Johann Gmelin (from Germany) discovered permafrost.

The full impact of the 'Agricultural Revolution' was not to be felt until the second half of the 18th century, with the development of selective breeding and significant increases in mechanisation and enclosure – which went hand-in-hand – both of which had been slowly progressing since the 16th century. The four-field crop rotation system had been introduced to Britain in 1730 by Thomas Townsend – know to generations of British schoolchildren as 'Turnip Townsend'; the introduction of nitrogen-fixing crops to the system greatly enhancing soil fertility and production. There had been some developments in mechanisation with the introduction of Jethro Tull's seed drill (1701) and the first commercially successful iron plough – the Rotherham plough – in 1730. The land as yet awaited the increased productivity which came with further mechanisation, boosting the rural population while rendering many unemployed, thereby fuelling the workforce necessary to feed the coming 'Industrial Revolution'. The potential impact of the latter on the working man and productivity was already in evidence following James Kay's invention of the flying shuttle which had doubled the amount of work a weaver could do.

People's everyday diet would be dictated in part by their location (availability) and their social status

Figure 3 Public buildings: Custom house (1781, rebuilt following 1813 fire), Guildhall, Market Street (1761)

(Picard 2000, 64–6, 192–6; Stead 1985). The upper and middle classes were prolific meat-eaters; fruit, vegetables and cereals (as bread and pastries), though available, were not always consumed by those who had easy access to meat protein and the latter two were more the preserve of the less prosperous (*ibid.*; Cox 1996, 50–4). It certainly appears that those with the means did not stint their food, a 'grand dinner' for the middle classes comprising up to 26 courses (Picard 2000, 193). Roasting represented the most important culinary facility, followed by boiling and stewing. Those without access to an oven sent their pies to a local baker to be cooked, the crust being marked in some way to enable it to be easily distinguished, hence the children's rhyme '... *pat it and prick it and mark it with D* ...' (Stead 1985, 7–9). The English were renowned for their puddings '... they bake them in the oven, they boil them with meat, they make them fifty different ways ...' (*ibid.*, 20). Despite its high price (which was three times the price of meat) butter was subject to lavish use in many dishes. Not all was heavy protein, carbohydrate, and fats, however, as demonstrated by the 1747 recipe for the fantastic salad *Salamangundy* – using crisp vegetables, boiled eggs, sharp pickles, and cooked chicken presented on a large tray decorated with water cress and nasturtium flowers (*ibid.*, 41). Cookery books were very popular, with over 300 titles being published throughout the 18th century, the most successful writers including Eliza Smith (1st edition 1727) and Hannah Glasse (1st edition 1747) the author of the spectacular salad (*ibid.*, 13). For those with immediate access to the sea, as in Poole, marine protein would have been readily available in season and at an accessible price (*Universal Directory* 1798). Improvements in transport throughout the century meant that fish became more widely available, and oysters in particular were consumed in large numbers (Stead 1985, 20).

Alcohol consumption is believed to have been high, either in the form of ales or spirits, and widespread drunkenness appears to have affected all classes. Intoxicating drink was cheap and widely available; in 1735 *c.* 6.4 million gallons of gin were being consumed each year in England and Wales (about one gallon per capita of population) and a middle-class gentleman – presumably with a little help from his family and friends – may have got through 120 gallons of red wine/port in a year (Stead 1985, 24; Cox 1996, 51; Picard 2000, 196; Abel 2001). Tea became a popular drink in the first decade of the 18th century, at which time its import from China was still monopolised by the East India Company (Musgrave and Musgrave 2000, 93). The relatively high cost of the commodity itself (one-third the average weekly wage for a pound in 1777) was further increased by the 119% duty placed on it by the government, adding it to the extensive smuggling industry active with reference to a variety of 'luxury' imported goods in the 18th century, that included brandy, tobacco, and wine (*ibid.*, 94–5; Draper 1998, 21). Although it requires steeping for longer and makes a weaker cup, tea can be reused, and the lower classes would buy cheaper second-hand leaves (http://www.panix.com/~kendra/tea/tea_to_england.html; N.B. in modern China it is common for up to 20 or so infusions to be made for one batch of green tea leaves, the first infusion often being discarded). Coffee and chocolate had both been popular drinks since the latter half of the 17th century, but their general distribution was probably similarly limited by expense (Dalby 2000, 144) and chocolate decreased in fashion as the century progressed (Stead 1985, 24). From the beginning of the 18th century sugar

consumption increased considerably, though it still constituted a luxury item in the early decades (Cox 1996, 55).

The latter commodity in particular, being labour intensive in its cultivation, was inextricably linked with settlement and slavery in North America in the 17th and 18th centuries (Cox 1996, 55; Musgrave and Musgrave 2000, 37–61). 1735 saw the birth of Granville Sharp who, as an adult, was an active campaigner for the abolition of the slave trade; an ambition which he lived to see achieved in 1807, thought the abolition of slavery did not follow until 1833, some time after his death.

The anti-slavery movement in England was driven by the religious humanitarianism which had emerged in reaction to the philosophical concepts of what have been deemed the 18th century 'Age of Enlightenment' and 'Age of Reason in Philosophy'. The most fundamental concepts of these phenomena were '... faith in nature and belief in human progress ... human righteousness and happiness requiring freedom from needless restraints, such as many of those imposed by the state or the church' (Hackett 1992). The appeal of such concepts to those opposed to the established church, monarchy, imperialism, and slavery are self-evident. Although it was to be in the latter half of the 18th century – spurred by ideas propounded by such renowned philosophers as Voltaire and Rousseau – that the greatest impact of some of these concepts were to be felt in Europe (French Revolution) and America (War of Independence), the seeds had been sown in the late 17th century in Holland and England by such as John Locke. In the ecclesiastical world religious rationalism provoked a widespread emotional revival, known as pietism. This began in England in 1738 when John and Charles Wesley '...began a crusade of popular preaching in the Church of England'; this movement was to become known as 'Methodism', the proponents of which were later to split from the established church (see Chapter 5 and Appendix IV).

Travel, passenger and freight, in early 18th century England could be undertaken by land or water (depending on the point of departure and destination); both could be accompanied by various levels of danger and discomfort, and be subject to delays. Transport in some coastal regions could be more speedily and easily effected by sea than overland, and local passenger boats were relatively common in ports such as Poole (see below), longer trips between costal or estuarine (including London) locations being commonplace. Although navigational improvements to rivers and canal construction had been undertaken in the 16th and 17th centuries, it was not until the second half of the 18th century that construction and use for the transportation of goods by these means commenced in earnest (Skempton 1957, 18). Road transport was slow and generally uncomfortable, particularly in winter when many minor routes became impassable by wheeled vehicles for variable periods of time (Bayne-Powell 2000). The growth of the turnpike trusts, which commenced in the early decades of the 18th century but did not really come to the fore until the latter half of the century, led to increased expenditure on road maintenance and construction, resulting in '... substantial increases in passenger travel speeds, large reductions in freight charges, and a significant growth in road traffic' (Bogart forthcoming).

George II, the last British monarch to be born outside these islands and the last to lead a cavalry charge (Battle of Dettingen 1743), had ascended the throne in 1727 (d. 1760). The king exercised limited control over policy, the government effectively being controlled by the 'Prime Minister'. In 1735 this (unofficial) post was held by Robert Walpole (Whig), generally regarded as the first to hold the office; he had served under George I and remained in the position until 1742. War and taxes, inextricably linked and both controversial, were, as ever, dominant political features. The peace existing in 1735 was not to last, the country entering into war with the Spanish in 1739, and France in the 1740s and again in 1756 (Seven Years War); conflict was also coming at home with the 1745 rebellion lead by Charles Edward Stuart.

While far from an exhaustive review of England in 1735, which would be well beyond the scope of this introduction and the aims of the book, the summary presented here will hopefully have assisted in setting what follows in its wider context and illustrate the immense dynamism of the 18th century. The ecclesiastical background has largely been deliberately omitted since much of it is dealt with in detail in Chapter 5, but both this and the other main section of the text, dealing with the people, need to be viewed in the broader social, economic, and political context of England in the early part of the 18th century.

18th Century Poole

The town lies on the Dorset coast, in south-west England, *c.* 15 miles *(c.* 25 km) south-west of Southampton (Fig. 4); '... seventy-eight leagues [*c.* 269 miles/433 km] from London by sea ... and one hundred and ten measured miles by land; and sixteen leagues [*c.* 55 miles/88.5 km] from Portsmouth by sea' (*Universal Directory* 1798, 230). Its location, on an alluvial peninsula at the head of Poole harbour, reached only after crossing a considerable expanse of open heathland, meant that for most of its history it was practically an island (Fig. 5). In 1750 Dr Richard Pocock described how 'Pool is situated on a Peninsula, which is joyned by a neck of land not above 30 yards broad at high water, as I was informed. They laid out in the last rebellion about £300 in cutting a fosse across it in order to have made a Drawbridge' (BL ADD 15800, f 46).

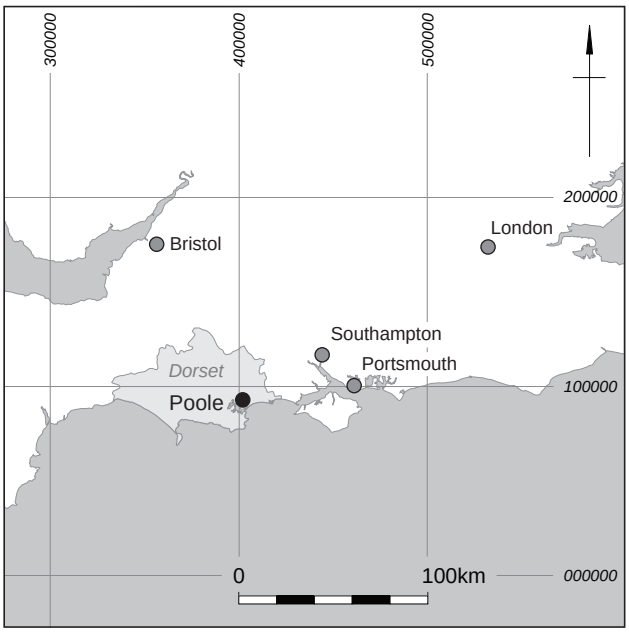


Figure 4 Map of southern England showing the location of Poole and major ports

The town:

> '...takes its name from the bay on the north side of which it is situated, and by which it is surrounded on all sides, except on the north. It lies on the border of a barren dreary heath, which affords no pleasant view to travellers who come from the more delightful part of the county'. (*Universal Directory* 1798, 230; taken from Hutchins 1774; Fig. 5)

'The Pool or Bay is about seven miles long & four broad, the entrance not being above three quarters of a mile broad; opposite is Branksey Island commonly called Brown Island [Brownsea Island]' (Dr Richard Pocock 1750, BL ADD 15800, f 46). The mudlands around the town were reclaimed in the late 19th century (Penn 1980, 82).

Poole was a royal 'peculiar', a parish not part of any diocese and thus exempt from the usual Episcopal supervision, with the appointment of its minister in the hands of the inhabitants (Densham and Ogle 1899, 181). Most of the county of Dorset belonged to the Bishopric of Bristol, which was among the poorest of the dioceses and tended to be used as a stepping stone to other positions, with incumbents not remaining there for long (Bettey 1973, 74). This fact, together with the distance between Bristol and Dorset, meant that few bishops undertook 'visitations' (tours of their dioceses to consider any infringements in ecclesiastical matters; Fig. 4). This was to prove a factor in the growth of Nonconformity in the county and the town (Chapter 5).

The history of Poole is described in detail in Sydenham's *The History of the Town and County of Poole* published in 1839 and later by Smith (1948; 1951), and it is not intended to cover this in any detail here, but the sea – such an integral and pervading presence – represented the main influence on the town's economy and success; as is admirably illustrated in the town's coat of arms (Smith 1951, 48–50; see vignettes). Sydenham notes that '...the rise of Poole as a place of commercial resort took place in the twelfth century' (1839, 351). It became a Port of the Staple in 1433 and for many years was the only officially recognised sea port in Dorset (Legg 2005, 17). From the 15th to the early 19th centuries the thriving Newfoundland cod trade brought prosperity to the town and, for much of that time, there was also a good oyster trade (Winder 1992). Timber provided another profitable commercial enterprise.

Following a visit to the town in the 1720s Daniel Defoe described it as:

> '...a considerable sea-port, and indeed the most considerable in all this part of England ... especially here were a great number of ships fitted out every year for the Newfoundland fishing ...'. (Draper 1998, 19–20)

Its prosperity increased and documents from the second half of the century describe how '... Here is a great trade carried on, to several parts of the world ...' (Hutchins 1774, 3) '... but chiefly to Norway, Newfoundland, and South Carolina' (*Universal Directory* 1798). The *Universal Directory* for 1798 (again lifted from Hutchins) further explains:

> '... the harbour is good for any ship not exceeding the draught of fourteen feet ... the frequent ebbs and flows of the sea, which keep it in continual motion, conduce much to the health of the town, otherwise the ooze or mud would be very offensive ...'. (240)

In 1750 Dr. Pocock observed:

> 'There are several Quays at the end of the town & on each side the Merchants yards go to the water & some have Quays to them [Figs 6 and 7]. They have some Newfoundland trade & a considerable business in building ships & bringing the materials; they are also employed in fishing, having beside the common seafish plenty of soles & John Dory & very large oysters ...'

and how:

> '... The flowing of the tide here is very extraordinary, when the tide has gone out

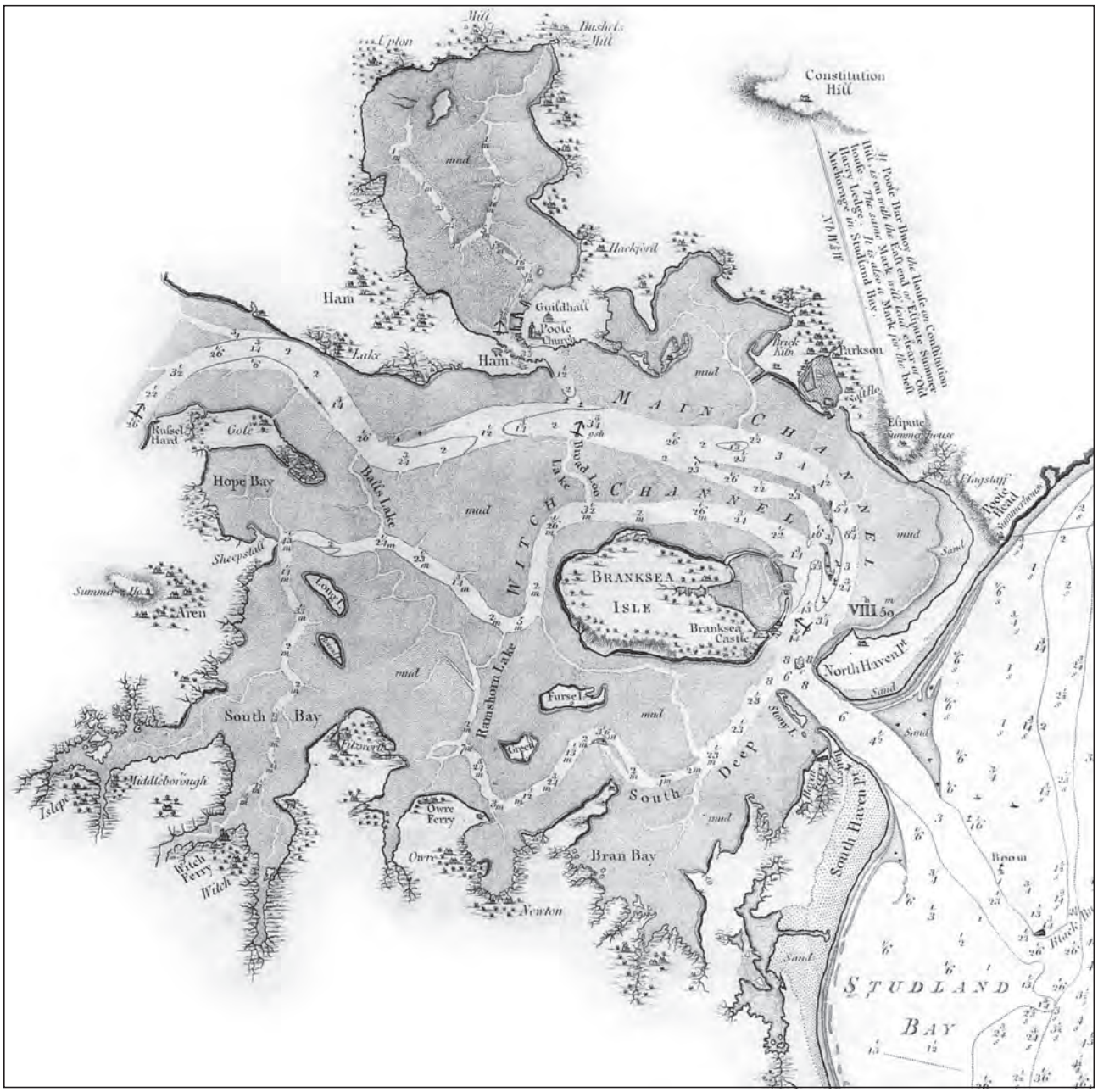


Figure 5 Map of Poole and bay (MacKenzie 1785)

> three hours it stops & flows for two hours about two feet perpendicular in height ...' (BL ADD 15800, f 46)

In at least the latter half of the century it appears that the trade was:

> '... confined to Newfoundland; a number of seamen are trained up to this fishery. Young stout country fellows indent themselves for two summers and a winter ... the exports are provisions, nets, cordage, sail-cloth, and all sorts of wearing apparel, with a variety of other commodities for the consumption of the planters and servants, are [*sic*] to a very large amount. Their returns are in cod and salmon sent to foreign markets, oil, seal-skins, furs, and lately cranberries are become an article for home consumption. So much has the laudable spirit for commerce increased, that one capital house before the American war [1775–1783] had twenty-four sail of square-rigged vessels, from one hundred to three hundred tons burthen [*sic*] all employed in the Newfoundland trade'. (*Universal Directory* 1798, 239)

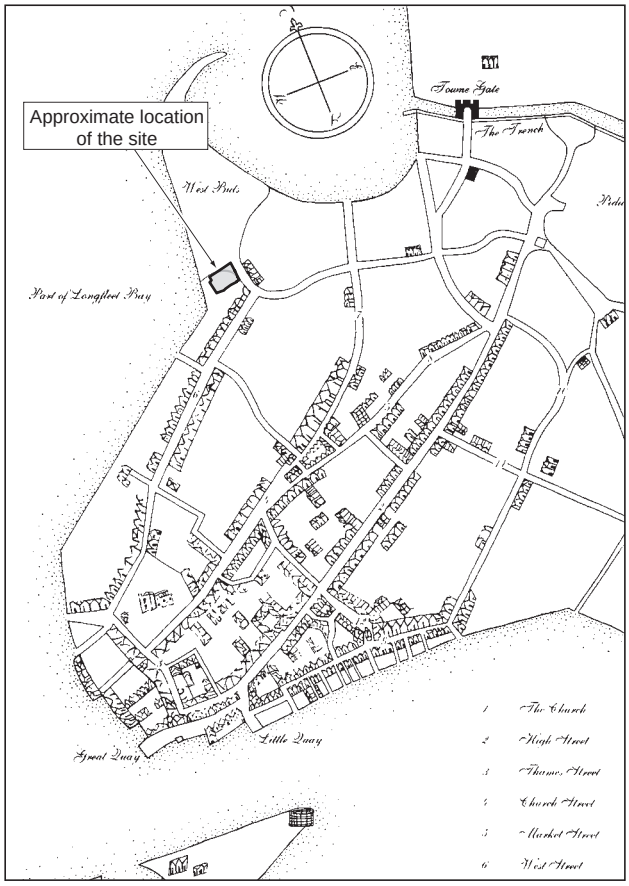


Figure 6 Redrawn from 1643 Pyt-house map of Poole, showing the position of the site

The same document, however, indulging in some self contradiction, indicates the Newfoundland trade was not quite alone, stating that:

> 'The imports and exports of corn are here very considerable ... The central situation of this port is of great importance in receiving foreign corn from the northern parts of Europe, and from Holland; which is distributed along the coast, and round the land to the north channel, in coasting sloops and vessels ....' (*ibid*., 241)

In 1787 the port was ranked eleventh of the 73 English and Welsh ports, averaging 79 vessels per year to the Newfoundland fishery between 1787 and 1792 and acting as the chief suppliers of goods to the colonists (Davies 1994). There was also a steady trade with South Carolina and the Leeward Islands, 41 vessels clearing for voyages in 1720–1 and 84 in 1751–2 (*ibid*.). In the middle years of the century merchants were importing up to 47,000 gallons of wine per year as return cargo from the Mediterranean; though many merchant ships in the Mediterranean traded from port to port for many years without returning home (*ibid*.). Following the settlement in 1763, after the wars with France (see above), Poole shipping expanded dramatically and by 1789 over 200 vessels were engaged in foreign trade with a further 966 inward and outward coastal cargoes. A vast network of mercantile trading and associated manufacture developed in response to the maritime trade (see Chapter 4), the effects of which spread to the surrounding region, and the inhabitants of Poole were regarded to be of '... great opulence and respectability' (*ibid*.). The relatively small size of many of the vessels and consequent small scale of the shares in shipping encouraged the small investor, and numerous of Poole's minor trades people were able to benefit directly from the maritime trade by purchasing part-shares in ships (*ibid*.).

Figure 7 1751 Thompson's map of Poole

In the middle of the 18th century an attempt was made:

> '... to establish a trade to the coast of Africa, and several voyages were undertaken, and the returns made in slaves, which were carried to the West Indies and Carolina; but the hand of Providence interposed, and put an end to a traffic so repugnant to the dictates of humanity, and to the principles of true religion.' (*Universal Directory* 1798, 241)

Fishing was an important commercial enterprise both for home consumption and export, particularly oysters:

Figure 8 Poole in the late 18th century with the tower of St James' church to the left. (By kind permission of Dovecot Press)

> 'Without the bar, and in the boundaries of Poole, is an excellent bed of oister [*sic*], from which there are several sloops [up to 40 over a two month spring period] loaded every year [worth £3000] ... to supply the London markets ... The last days catching is, by a prescriptive regulation, thrown into the channels within the harbour, where they fatten, and supply the town and country, during the winter, with excellent oisters. Fish are caught in great pleanty, and the harbour plaice are most excellent. Herrings have been caught in such pleanty as to be sold for a penny a dozen, and continue on our coast for three months.' (*Universal Directory* 1798, 240)

The industrial quantities of oyster shells formed substantial middens and this material – post-medieval and medieval – may have '... influenced the reclamation and expansion of medieval Poole' (Winder 1992; Fig. 7 see 'oyster bank' to south-east of Great Quay).

A contemporary print of the town shows the large number of ships both within the bay and tied up along the main quay which lay along the southern side of the peninsular on which the town was located (Fig. 8). The town, which was created a county in its own right in 1568, covered an area '...three quarters of a mile long, and half a mile broad ...' (Hutchins 1774, 3). Hutchins goes on to explain:

> '…There are only three or four considerable streets, running nearly from north-east to south-west, and many lanes [Figs 6 and 7]. The buildings are generally mean and low, but of late years many elegant houses have been erected [Fig. 1]. The number of houses is uncertain, but it contains near 7000 inhabitants when the Newfoundland ships come home ....'.

Two decades earlier Dr Richard Pocock had observed that :

> 'Mr Missing built a workhouse here, in which all the decayed Poor are maintained & kept to labour. They have several good houses in the town, among them is Sr Peter Thomsons who lives here. The tower of the church seems to be very old with modern windows broke out in it, & I conjecture, it was originally built as a tower of defence, it having been only a Hamlet in the Parish of Canford.' (BL ADD 15800, f 46)

The town's population had:

> '....a right in the common of Canford by prescription, and may cut as much heath, turf, and furze, in the waste ground belonging to the manor as they are used to, and keep what kind and number of

> cattle they will ...' (*Universal Directory* 1798, 230)

The size of the population and occupation of the town's inhabitants is discussed in detail in Chapter 4, but – not surprisingly – it appears that the majority were employed in trade and manufacturing in addition to the various forms of marine-related activities. Where detailed records are available – for 1811 and 1821 – a maximum of only 0.1% of families were involved in agriculture (1821; Sydenham 1839, 450); which probably, at least in part, reflects the location of the town away from good agricultural land, though the obvious wealth of alternative, and probably more lucrative, occupations available will also have been a factor (see above). The town had no fields, though some produce was undoubtedly grown in gardens (Fig. 7), and some animals could have been grazed both here and on the common (see above). In 1750 Richard Pocock recorded that:

> '... One Mr Brock took part of it [Brownsea Island] lately & dug Tobacco pipe clay, which is found in many parts about Poole, in the Isle of Purbeck & near Wareham; he also made tyles of clay in the Island which abounds in Rabbits ...' (BL ADD 15800, f 46)

Herman Moll's 1724 map of Dorset shows three routes bearing north-east from Poole to Salisbury via Wimborne and Cranborne, to Ringwood and to Christchurch (presumably on to Southampton; Beaton 2001, 39). The same routes are there in Seale's map of 1732 but, by 1748–9, only two routes are shown in maps by Emanuel Bowen and the Osbornes, the route to Ringwood being absent (*ibid.*, 37, 41, and 45). There was no direct route north or west towards Blandford or Wareham and Dorchester, nor was there to be until the establishment of the turnpikes in the 1750s as shown on the maps of Bayly (1773) and Taylor (1765) (*ibid.*, 55 and 59). As observed above, the establishment of the turnpikes will have substantially enhanced road travel, and communication links via land and sea were relatively frequent by the late 18th century at least. There was a daily return mail coach from London (which could carry four passengers), daily mail coaches to Blandford and Wimborne (excepting Sunday for the latter), a weekly wagon (goods) to and from London and Salisbury, and several wagons each week from Blandford carrying goods from London and cities to the west (*Universal Directory* 1798, 239). In addition a weekly return passenger boat ran to Portsmouth, with twice-weekly sailings to Swanage in the Isle of Purbeck, and several boats from Wareham (*ibid.*).

Project Background

The site lay on land between West Quay Road and West Street, on the north-west side of Poole (centred on Grid Ref. 400930 090760), adjacent to the headquarters of the Royal National Lifeboat Institute (RNLI), the site owners (Fig. 9).

In 2001, Wessex Archaeology was commissioned by Ellis Belk, on behalf of the RNLI, to undertake an archaeological evaluation of the site – believed to represent the remains of a former Baptist burial ground – in advance of proposed development. The aim of the evaluation was to establish the character, extent, and condition of any surviving burial remains, and enable the full archaeological implications of the proposed works to be considered by the planning authority (Poole Council, under the advice of Poole Museum Service) in accordance with the government guidelines set out in the Department of the Environment's Planning Policy Guidance 16 (*PPG 16 – Archaeology and Planning* 1990). A desk-based assessment was also undertaken to set the site in its context.

The desk-based assessment found documentary evidence for the establishment of a Baptist chapel and burial ground on the site in 1735. Map regression showed the continued, undisturbed, presence of the latter at least up until the 20th century (Coffin *et al.* 1954; Sydenham 1839; RCHM(E) 1970; Figs 7 and 10–12). The evaluation demonstrated the presence of *in situ* human remains in a good state of preservation and the associated artefactual remains confirmed the suspected 18th century date of the deposits (Wessex Archaeology 2001).

As a consequence of these findings and the difficulty of mitigating against their disturbance in the proposed development, the planning authority requested the full archaeological excavation and removal of all human remains from the site (licenced according to the *Disused Burial Grounds (Amendment) Act* 1981) prior to redevelopment as part of the planning condition; a requirement concluding in the production of a report on the findings from these investigations. In 2002 Wessex Archaeology undertook 16 weeks of excavation, primarily on a commercial contract basis that did not represent a 'research' project *per se*. Consequently, although a full analysis of the remains was done, with extensive academic discussion of the results, there has been limited undertaking of developing specialist scientific analysis of the human remains at research level.

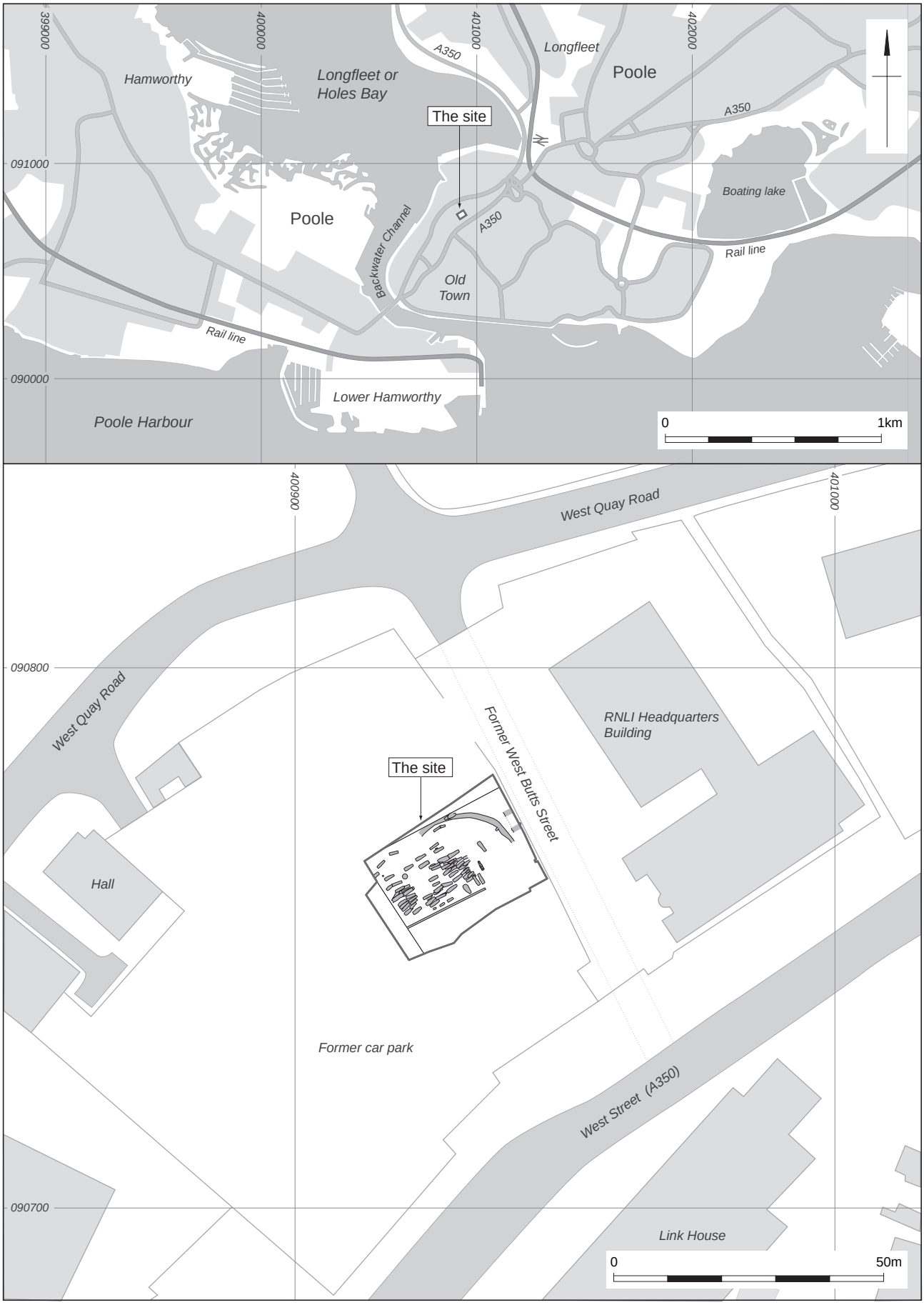


Figure 9 Site location plans: Poole area; detail West Quay Road

CHAPTER 2
THE EXCAVATIONS

Jacqueline I. McKinley and Kirsten Egging

The area of excavation lay within a plot of land to the south-west of the RNLI headquarters building on West Quay Road (Fig. 9). Before the archaeological investigations the plot comprised wasteland which had been levelled following the demolition of the *Merck* pharmaceuticals works (see Chapter 5 for the land-use history) and subsequently used as a temporary car park.

The area of excavation comprised *c.* 28 x 22 m of slightly raised ground (2.20–2.40 m aOD), situated on the north-east margins of the car park plot. To the north-east, the area abutted a fence forming the boundary to an access route – following the line of the former West Butts Street – and car park belonging to the RNLI (Fig. 9). The north-west and south-west sides of the site were marked by low concrete walls with foundations extending to/below the level of the natural deposits beneath the archaeological layers, believed to have been inserted post-World War II whilst the site was owned by *Merck*. The south-east site boundary was formed by an access route into the former works area.

Site methods

Following the breaking-out of the concrete and tarmac surface overlying the area of excavation, the site was mechanically excavated using a 360º tracked excavator with a toothless bucket, under constant archaeological supervision, to the top of the *in situ* archaeological horizons. The late medieval and early post-medieval make-up layer (see below), through which the graves were cut, was very dark (almost black) and had been subject to some reworking over the period in which the burial ground was in use. Consequently, it was very difficult to distinguish the grave cuts in the upper horizon of the cemetery soil, particularly where the graves had not cut into the underlying natural yellow–brown sand. The machine stripping commenced in the south-east corner of the site, which was devoid of archaeological features (Figs 9 and 13), and this led to inadvertent slight over-machining of three of the easternmost graves (152, 167, and 185) when graves first began to be encountered at the higher level. The remaining upper levels of the cemetery soil were thereafter removed in a series of machine spits in order to minimise disturbance to underlying deposits. During excavation of the graves visible in the upper machine-stripped horizon it became apparent that the cuts of earlier graves had been obliterated with later reworking of the cemetery soil. These lower grave cuts were exposed by hand-removal of the cemetery soil in spits, the whole site eventually being hand-stripped down to the underlying natural sands.

All archaeological features and deposits were excavated by hand. All graves were fully excavated, with targeted samples taken to facilitate the full recovery of human remains and small artefacts. Organic materials, such as coffin remains, were recovered where possible. A proportion of all other features was excavated to ascertain form, nature, and, where possible, date. A series of monoliths was taken from sections through the cemetery soil horizons to investigate their formation processes. A full written and photographic record was made of all excavated features, with hand-drawn scale drawings of individual features and an overall digital plan.

The natural deposit underlying the archaeology comprised a loose, strong yellowish–brown, iron-rich sand, forming part of the alluvial peninsula on which Poole lies; the underlying solid geology forms part of the Barton and Bracklesham Group (Geological Map of Great Britain 1957, Sheet 2 1:625,000). The natural sand was encountered at 0.95–1.33 m aOD, with a gradual fall to the north and east.

Pre–cemetery features and deposits

The natural sand was overlain by a variable, uneven depth (0.10–0.25 m) of dark, greyish–brown, humic sandy silt (102), with rare inclusions of 13th–19th century material including pottery (38.8% medieval, 53.3% post-medieval, and 7.8% post-1800s), clay pipe, glass, and ceramic building material (CBM; see Chapter

Figure 10 1841 Plan of Poole, showing position of site

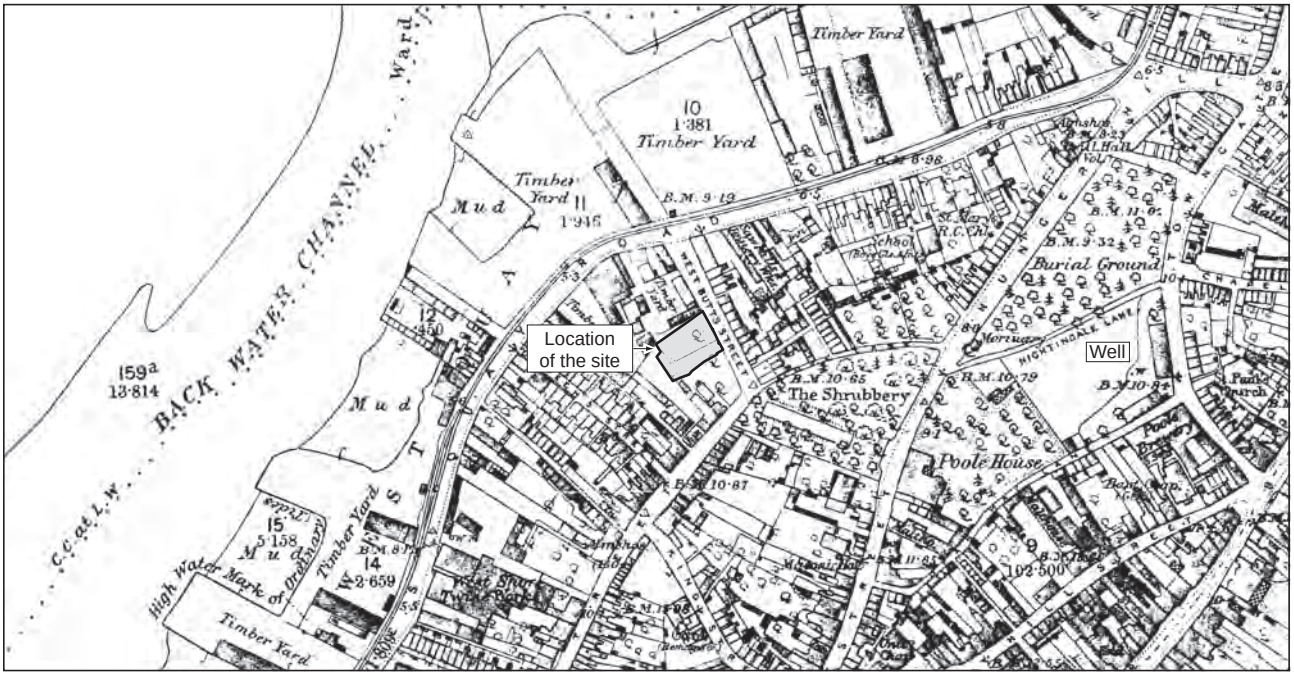


Figure 11 1890 Ordnance Survey 1st edition map of Poole, showing position of site

3). The layer formed the bioturbated (ie, worm-worked) interface between the natural sand and the overlying post-medieval make-up layer, 101. The latter showed a progressive increase in depth from the south (0.15 m) to the north and east (0.70 m), reflecting the fall in height of the underlying natural. The well-mixed dark-grey/black sandy silt contained homogeneously distributed quantities of domestic debris including moderate amounts of pottery (26.8% of that recovered from site), mostly of post-medieval date (70.5%; also 20.3% medieval, 1.6% early post-medieval, and 7.5% post-1800s); occasional animal bone (8% of total) and clay pipe (6%); and rare glass, shell, and iron. The deposit represented what appeared to have been a prolonged phase of dumping and levelling over what would have been marginal, coastal

Figure 12 1902 Ordnance Survey 2nd edition map of Poole, showing position of site

land, probably commencing in the late medieval period and continuing into, predominantly, the early post-medieval period (Figs 6, 7 and 14). The animal bone assemblage is similar to the 16th century assemblages from central Poole, from where the material probably derived (Knight, Chapter 3), and included a humerus from a Green/Savannah monkey (Röhrer-Ertl, Chapter 3) – the only known occurrence of this species from a British archaeological site and illustrative of Poole's maritime trade with Africa (Chapter 1). The well-mixed soil layers are likely to have functioned as 'garden soils' prior to the area being acquired for the Baptist chapel and burial ground.

Relatively small quantities of redeposited human bone were recovered from the 'cemetery soil' (see Chapter 4) indicating that, although some intercutting between graves and disturbance of human skeletal remains had occurred, this had had limited impact on existing burials and most of the bone from disturbed graves was either re-interred in the later grave or formally reburied in a charnel pit (see below).

The earliest feature on the site was probably the curved ditch 155 which arced across a *c.* 17 m length of the north-east corner (Fig. 13). The *c.* 1–1.4 m wide ditch, with concave sides and base, survived to *c.* 0.34–0.50 m in depth. The five fills represent material slumped-in from either side of the ditch, suggesting it was occasionally subject to inundation or severe weathering, possibly associated with its proximity to the seashore. The position of the ditch coincides with a feature on the 1634 map of Poole, continuing the line of what then formed the south-side of West Butts Street to the foreshore and, together with a similar feature extending from the north side of the street, cut the occupied land off from the sand spur of West Butts itself (Fig. 6). The feature does not appear on either of the 18th century maps of Poole (though a possible remnant may be evident external to the burial ground on the 1751 map) suggesting it was filled-in by this time (Figs 7 and 14), a proposition supported by the presence of one grave (152) cutting across the upper fill of the ditch (Fig. 13; see below). Datable material from the ditch fill, mostly pottery of general post-medieval date, supports this theory. However, a minor proportion (*c.* 32%) of the pottery from the ditch fills is post-1800 in date, which, while possibly intrusive as a result of bioturbation, may indicate that the ditch was not quite fully backfilled until late in the life of the cemetery, though it probably no longer comprised a sufficiently significant feature to warrant inclusion on contemporaneous maps.

A small (*c.* 0.85 m diameter), brick-lined well was situated in the south-west area of the site (Fig. 13). Although clearly post-medieval in date the feature could not be more closely dated. Its upper levels corresponded with the upper horizon of the grave cuts; it did not cut any of the cemetery features and the nearest graves lay *c.* 0.55 m away. The well is not shown on any of the historical maps of the town, including the 1st (1890) and 2nd edition (1902) OS maps, both of which show the location of wells elsewhere in the town (Figs 11 and 12). It appears most likely that the well was extant at the time of the cemetery's use and may even have been sunk to serve the congregation. The close proximity of the site to the foreshore in the 17th century and reclaimed nature of the land render it unlikely that the well is of such an early date (Fig. 6). Although possibly slightly brackish, the water may have

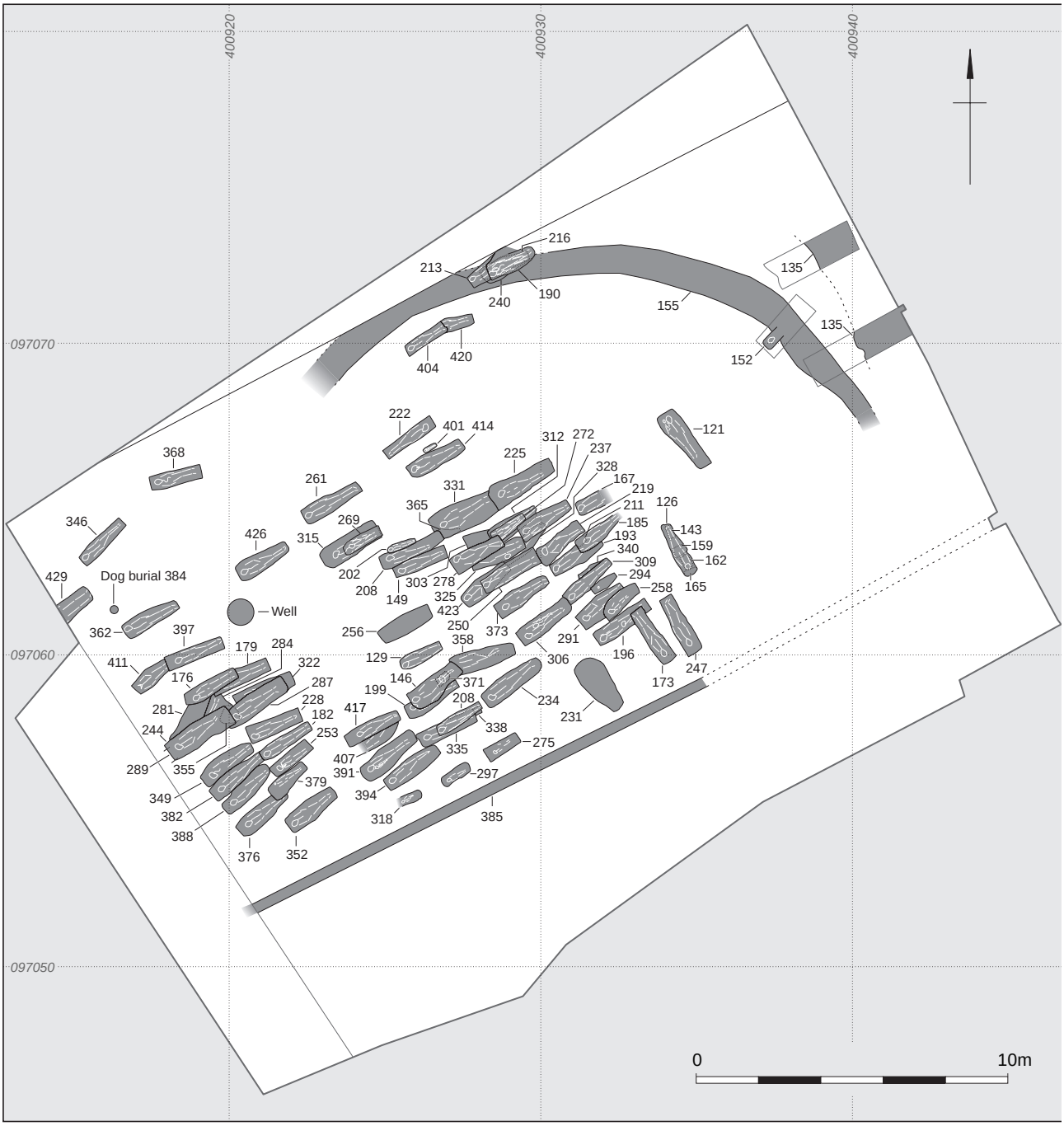


Figure 13 All features plan of the site showing burial orientation

been drinkable if an underground aquifer had been present. It appears that the well had ceased to function and had probably been covered by the later 19th century.

Cemetery features

All or part of 81, 18th–early 19th century, inhumation graves were excavated, containing the *in situ* remains of 83 burials (see Chapter 4). In plan, cut 231 appeared to represent the remains of a grave, being of similar size and shape and containing a similar fill to the rest, however, on excavation it proved to be highly irregular and contained neither human remains nor coffin furniture. The purpose of this feature remains unknown and it may even post-date the use of the burial ground. The Grave Catalogue (Appendix I) presents a description of each grave and its fills including the coffin furniture and a brief summary of the human remains (see also Appendix II). Figure 13 shows the distribution of the graves and a selection of grave plans illustrate the variety of coffin furniture and burial attitude encountered (Figs 15–19).

Figure 14 1774 map of Poole showing locations mentioned in text

Disturbance

As observed above, the upper levels of several graves in the south-east area of the site were removed during machine-stripping. Grave 152, cutting across ditch 155, lay at a higher level than most of the other graves with only a shallow depth of the cut surviving. Twentieth century disturbance in this area may already have removed some or much of this grave (see Chapter 5) but it is probable that most was removed during machine-stripping of the site.

Although it appears that most, if not all, of the former burial ground fell within the area of excavation (see Chapter 5), a few graves were partly truncated during the insertion of deep foundations on the north and east sides of the site associated with the industrial use of the area by *Merck* in the latter half of the 20th century (Fig. 13). The south-western half of grave 429 and most of 289 had been cut away by the eastern foundation, no bone being recovered from the latter, and part of grave 190 was disturbed by the insertion of the foundations for the north-west wall. The burial ground could potentially have extended up to 10 m to the north, but graves were less dense in the northern part of the site (further away from the site of the chapel), and any that did exist in this area will have been destroyed by the insertion of the deep foundations (*c.* 2–3 m) associated with later 20th century industrial use of the site (site engineer, pers. comm.).

The south-west–north-east wall foundation (385) crossing the south-east margins of the site related either to the wall known to have surrounded the cemetery from at least the first half of the 19th century and/or the early 20th century terraced cottages constructed to the south of the site, the northern boundary of which appeared to have followed the same/similar line (see Chapter 5; Figs 10–12 and 20). No graves were found to the south of this wall. Although at least part of the West Butts chapel grounds would have extended across this area (Fig. 12) it was most likely occupied by the chapel itself, the graves being confined to the north and west. The southern cemetery wall appears to have been erected and maintained by the Baptist congregation who continued to use the burial ground subsequent to the demolition of the chapel (see Chapter 5), who were probably well aquainted with the southern extent of the graves. There is no record of burials having been removed or disturbed during construction of the early 20th century cottages; though it may be questionable whether they would have troubled with acquiring the licence for removal required under the 1884 *Disused Burial Grounds Act* even if there had been.

The south-eastern corner of the site represents part of the probable location of the chapel (Figs 7 and 14), which would have fronted onto West Butts Street. This probably accounts for the lack of graves and the depth of disturbance in this area. A (very dark) photograph dated 1940 shows a narrow, two-storey building in this location (see Chapter 5) and the depth of disturbance may relate to the foundations for this later building which could have destroyed any remaining evidence of the chapel; it is unlikely, however, to have removed any graves.

Some degree of intercutting between graves was relatively common, but the remains of the burial were not always affected. Thirty-five graves were cut by later insertions (43.2%); 13 (16.0%) graves cutting more than one earlier grave. Disturbance and some removal of the *in situ* human remains occurred in 18 graves (22.2%), ranging from the removal of a single skeletal element to the loss of all except a few bones and, in one case (grave 281) the removal of all *in situ* bone, though part of the coffin furniture remained (see Chapter 4; Fig. 16). The most destructive intercutting was concentrated in the central and western areas of the site (Fig. 13). This suggests that the earliest graves either had no grave markers or that they were of a temporary nature (such as wooden crosses). Later graves, particularly those in orderly rows, probably had markers, in some cases of a more permanent nature, to allow better management of the burial ground. Some of the latest interments, both singletons and those in rows, did minimal damage to underlying graves, suggesting that their location was known (see below). Surviving evidence for grave markers was scant with only one feature which may represent the former position for a gravestone; an acute V-shaped slot (0.46 x 0.20 m) cut 0.15 m into the base of grave 126 at the head end (Fig. 15); this is believed to be one of the later graves post-dating the demolition of the chapel (see above). There is other evidence demonstrative of the original presence of at least some gravestones in the burial ground and although, as may be expected given the relative rarity of gravestones prior to the 1800s, most are likely to have been in association with the 19th century graves, at least one 18th century stone existed (see Chapter 5).

Cut 303, in the central area of the site, appeared to represent the remains of a small grave but contained neither *in situ* nor redeposited remains. Given its location, both physical and stratigraphic, it probably did represent a grave cut, the contents of which had been totally removed by repeated intercutting (by a minimum of two later graves; Fig. 13).

Grave 256 lay undisturbed, a minimum of 0.60 m clear of its nearest neighbours (Fig. 13), but contained no *in situ* human remains and only an impression of the coffin in its base. Given its position and the surviving depth (0.75 m), the removal of its contents must have been deliberate, but why this should have occurred and when is unclear. The notorious activities of the 'resurrection men' in the 18th and 19th centuries were chiefly undertaken in the large medical

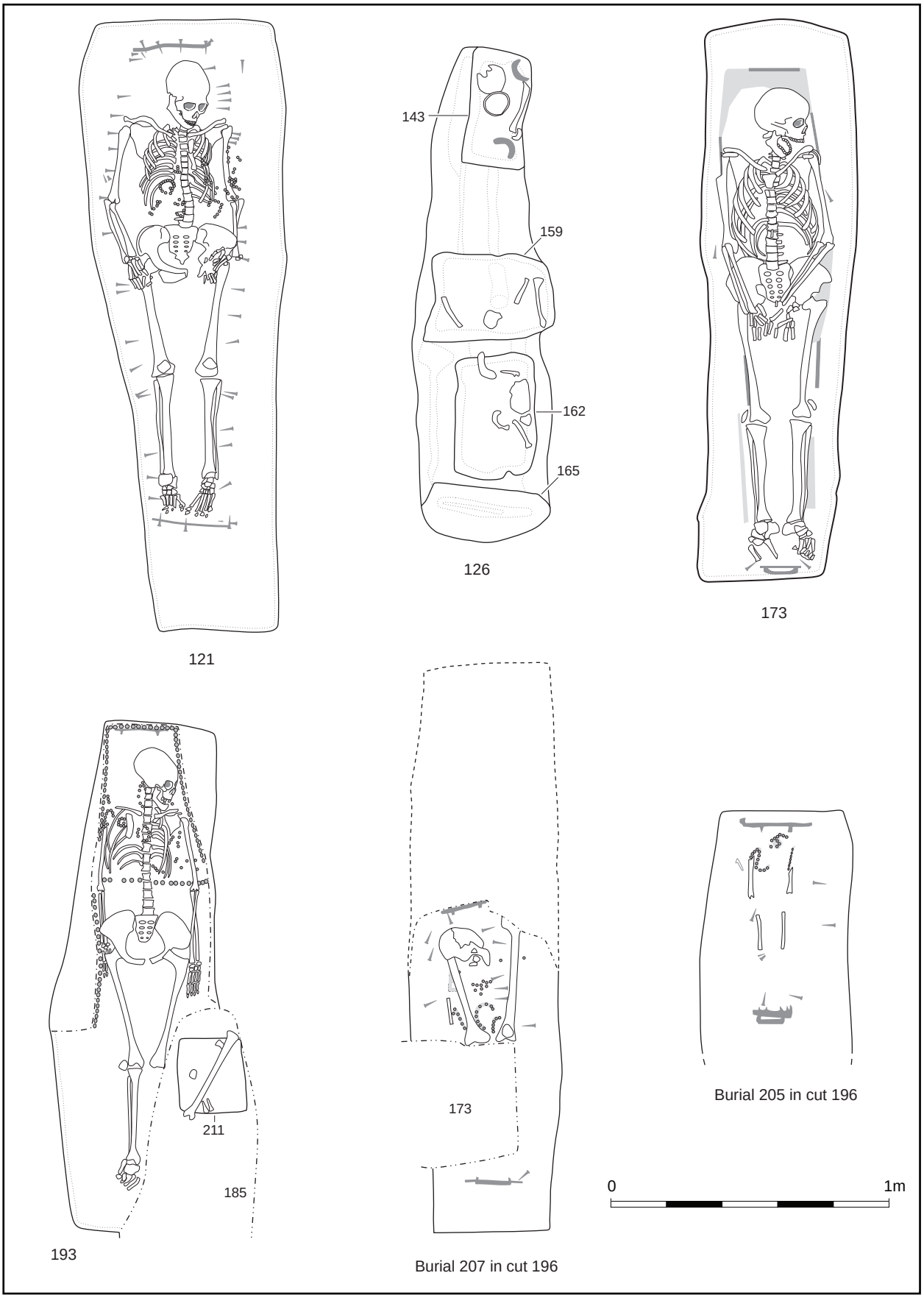


Figure 15 Selected graves I: 121; 126 with charnel pits 143, 159, and 162 and possible gravestone slot 165; 173; 193 with charnel pit 211; 196 with burials 207 and 205

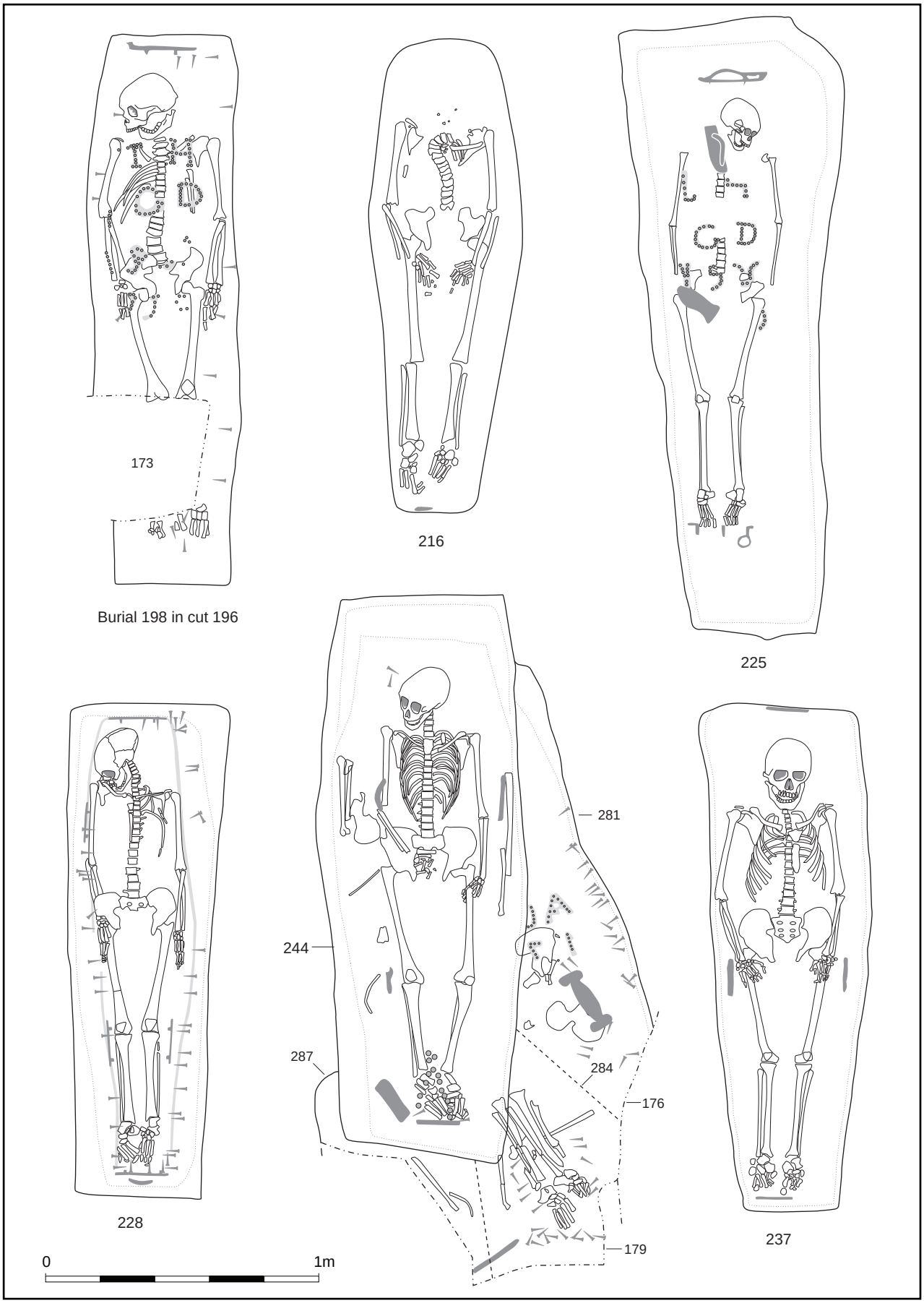


Figure 16 Selected graves II: 196 with 198; 216; 225; 228; 237; 244 with disturbed graves 284 and 287, and redeposited remains in 281

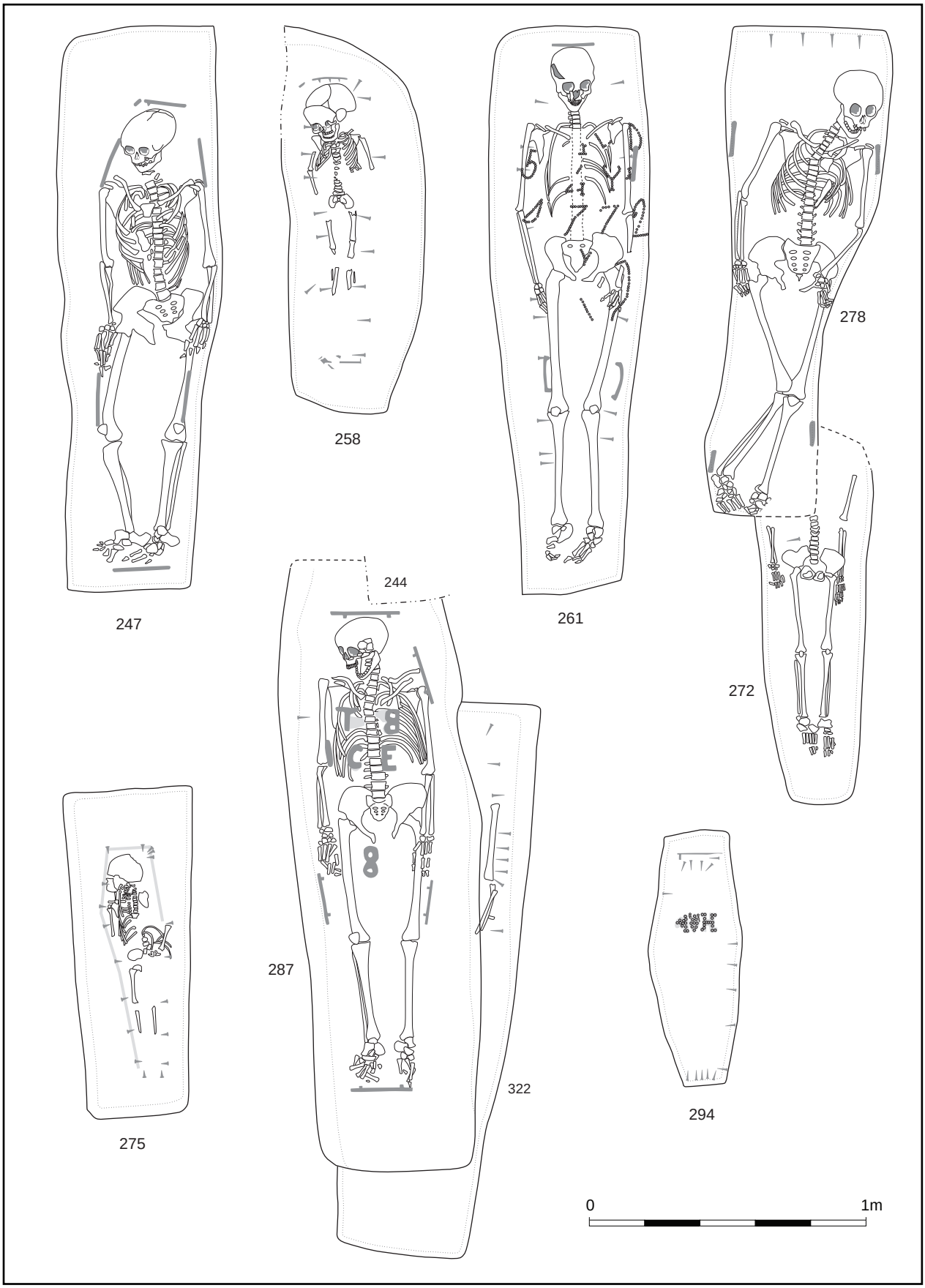


Figure 17 Selected graves III: 247; 258; 261; 275; 278 cutting 272; 275; 287 cutting 322; 294

cities such as London and Edinburgh and it is unlikely that the occupant of grave 256 was the victim of body snatching (Molleson and Cox 1993, 203; Cox 1996, 106–8). Possible reasons for the exhumation are likely to have been similar to those currently employed including movement of the remains to another burial plot or repatriation; there is contemporaneous evidence to demonstrate the exhumation and reburial of remains, though admittedly between crypts rather than earth-cut graves (*ibid.*, 206). Removal to facilitate forensic examination of the remains, whist not impossible, is improbable at this date. It cannot be stated with confidence that the two adult human bones recovered from the grave fill represented the remains of the individual originally buried there.

The graves

The graves were generally sub-rectangular, many being cut to accommodate the shape of the coffin with a slightly wider central or upper (head) end, narrowing towards the foot end. Others were of a more regular form with acute or rounded corners. The average length of the graves containing the remains of adults and subadults (those >13yr) was 1.95 m, with a range of 1.55 m (grave 216; adult female) to 2.35 m (287; subadult ??male); the width ranged from 0.35 m (199; adult female) to 0.88 m (331; adult female), with an average of 0.58 m. The graves of infants and juveniles were understandably shorter with a range of 0.94 m (294; infant 1–2 yr) to 1.61 m (253; infant 4–5 yr), and an average of 1.21 m; the average width was 0.39 m with a range of 0.3 m (318 and 379; foetal and 3.5–4.5 yr infant) to 0.52 m (258; 3–4 yr infant).

The surviving depths of the graves ranged from 0.04 m (407) to 0.93 m (176), with an average of 0.30m and over 59.8% greater than 0.20 m. The measurement of the surviving grave depth (as shown in the Grave Catalogue) was, however, made from the extant ground level at the time of excavation and this varied according to the horizon at which the individual grave cuts became evident (see above). A more accurate impression of the depth to which graves were cut is obtained from the level (m aOD) at the base of the grave. A range of 0.76 m aOD (grave 208) to 1.35 m aOD (grave 269) was seen with an average of 1.06 m aOD. Over half of the graves (53.1%) had base levels between 1.0 m and 1.19 m aOD.

The full range of base levels was observed across all areas of the cemetery. There was no distinction in the depth to which graves were cut on the basis of the sex of the individual, there was, however, a clear link with age. Excluding those immature individuals buried together with an adult (in the same or a separate coffin), infants and juveniles were buried in shallower graves than older individuals; infant graves averaged 1.20 m aOD and those of juveniles 1.22 m aOD (N.B., only two juveniles were buried in single graves). The average base level for graves containing adult burials was 1.04 m aOD.

The majority of the burials (92.6%) had been made on a similar south-west–north-east alignment, an orientation which appears to have been influenced by the position of West Butts Street, to which most of the graves were set at right-angles. Minor variations by a few degrees to the north or south were evident within different grave clusters and some of the dispersed northern graves, later cuts presumably – as was commonly the case in earlier Christian cemeteries (Daniell 1997, 146) – following the visible lead set by the earliest graves in a given area of the cemetery. One grave (222) on a similar alignment to the rest contained the remains of a burial made north-east-south-west, ie, with the head placed at the opposite end of the grave to the rest. This coffin did not have a plate or alpha-numeric studs in the lid and the shape was similar at either end; it is possible that the coffin could have been accidentally placed the wrong way round in the grave if there were no clear markers to help distinguish one end from the other.

Four graves in the south-eastern area of the site were cut at right-angles to the majority, on the same alignment as West Butts Street. Three of the burials had been made south-east–north-west (3.7%) and one north-west–south-east (1.2%). There is no clear reason for this major variation in burial position but the grouping of these four graves in one part of the site suggests a temporal and/or possibly familial link between the individuals. Their close positioning to the believed location of the former chapel may indicate they were inserted after its demolition and relate to the Hill Street congregation rather than those of the earlier West Butts Street one (see Chapters 4 and 5).

Although the accepted traditional form for Christian burial is west–east, there are rare examples of deviations from this norm even in medieval cemeteries (Gilchrist and Sloane 2005, 152–3). East–west or 'reversed' burials have been recorded in several cemeteries, particularly in Scotland, and in the absence of any clear consistent pattern there appears to have been a number of possible factors operating in this choice of reversed position (*ibid.*). Still rarer occurrences of north–south and south–north burials have mostly been recorded from mass graves where space rather than tradition appears to have been the over-riding factor affecting burial position (*ibid.*) The graves in some other 18th–19th century Nonconformist cemeteries also demonstrate a deviation from the east–west burial orientation. Only 10% of the burials from the Quaker Burial Ground at Kingston upon Thames followed this traditional orientation, most (55%) being laid north–south and the rest either south–north or west–east (Bashford and

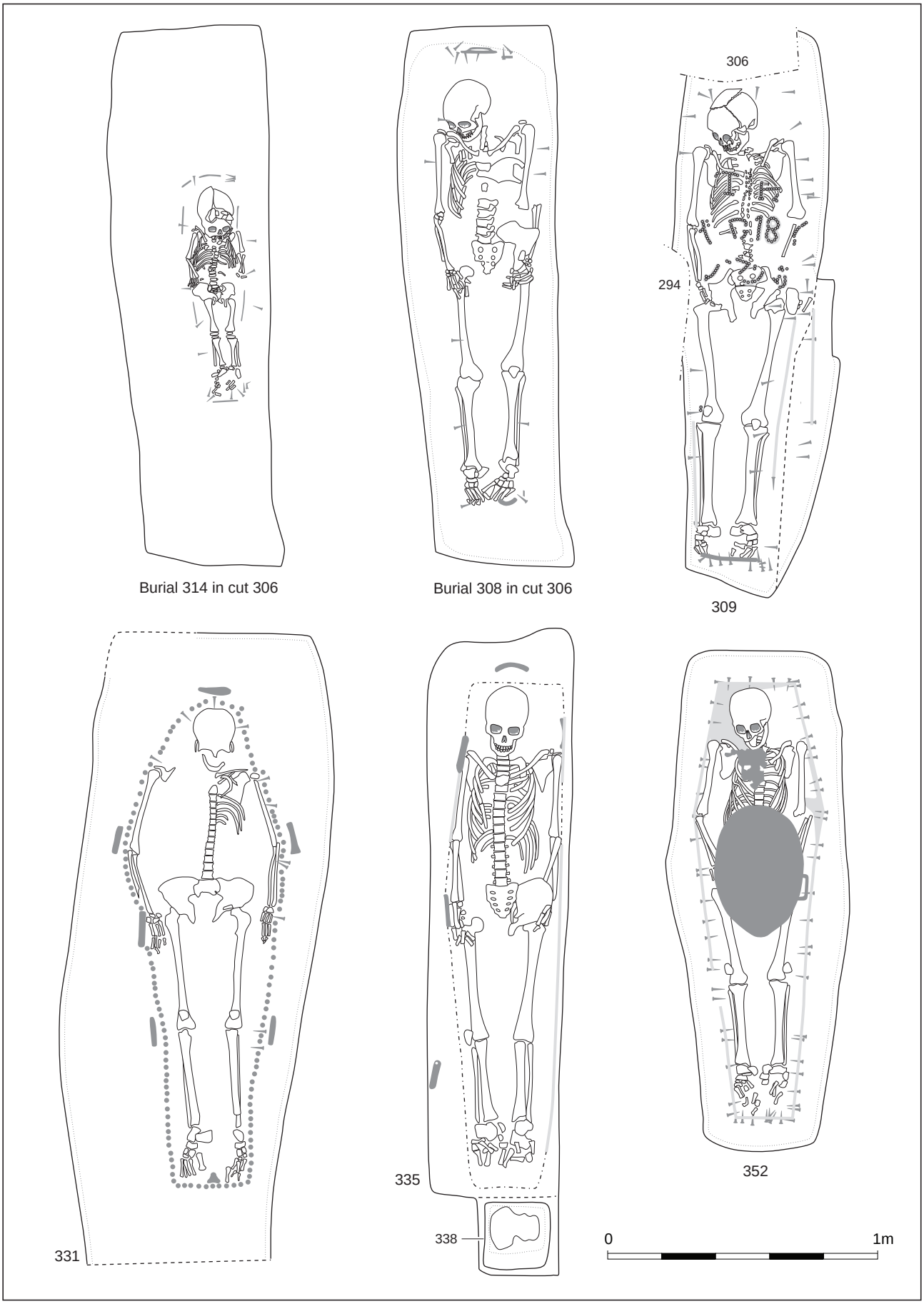


Figure 18 Selected graves IV: burial 314 in grave 306; burial 308 in grave 306; 309; 331; 335, and charnel pit 338; 352

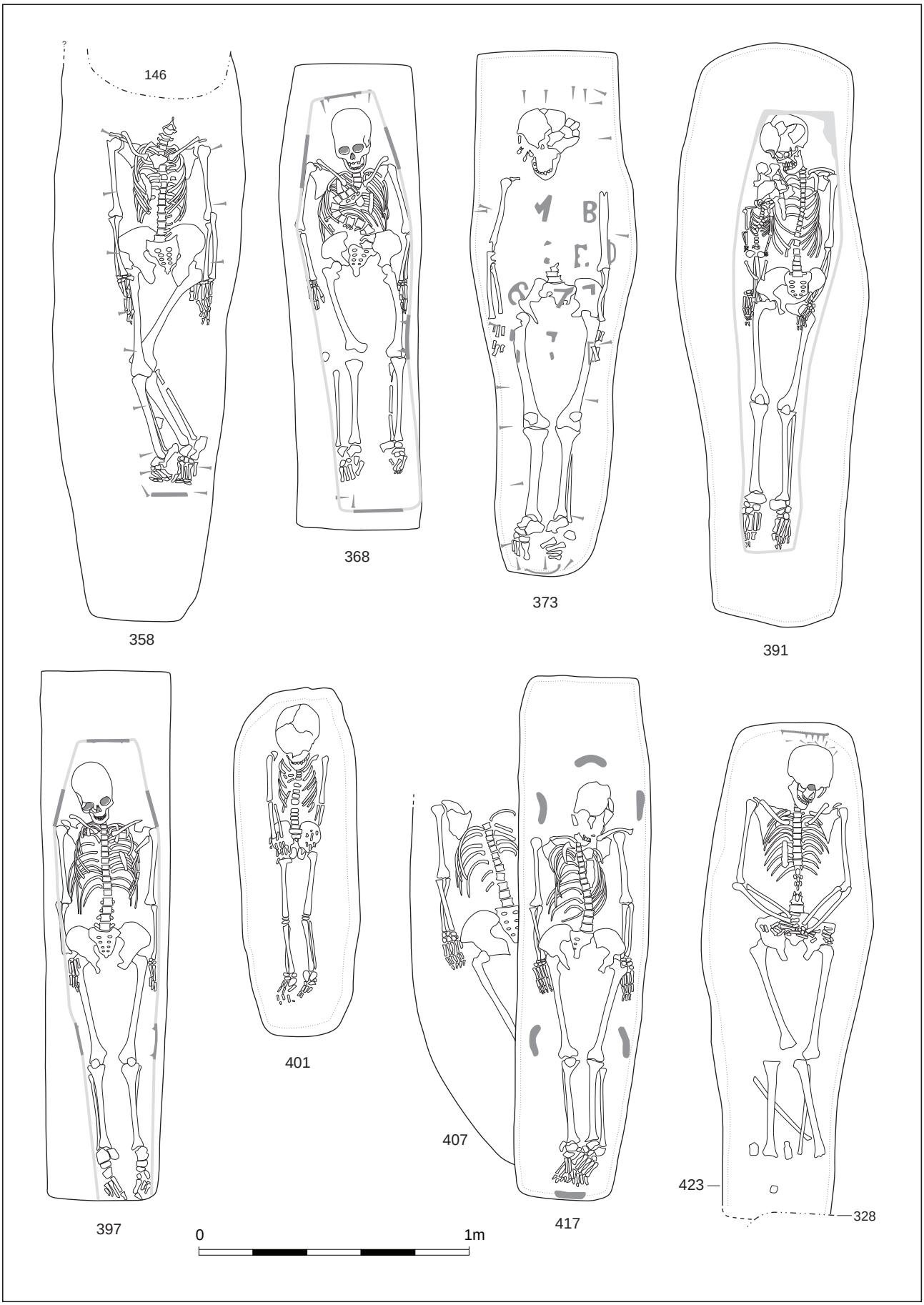


Figure 19 Selected graves V: 358; 368; 373; 391; 397; 401; 417 cutting 407; 423

Figure 20 Arial view of West Quay Road and West Butts Street from south-west taken in the 1940s (courtesy RNLI). Area of site evident as open yard centre right

Pollard 1998, 159). As at West Butts Street, where the road appears to have been the primary influence on grave orientation, topographic features such as walls, paths, and trees are believed to have been some of the factors affecting the orientation of graves in the Kingston upon Thames cemetery (*ibid.*).

The graves all had similar backfills, basically comprising the dark made-up ground through which they were cut (see above), with variations dependent on whether and how far the cuts had extended into the underlying natural yellow sand; 37 graves (45.7%) cut the natural. The dark greyish–brown sandy silt matrix varied to a silty sand where the natural sand had been breached, with patches of brown sand and occasional sub-angular/sub-rounded flint gravel inclusions. Quantities of medieval and post-medieval domestic debris such as pottery, CBM, oyster shell, animal bone, and clay tobacco pipe derived from the made-up ground were included in many of the grave fills (Chapter 3), but there was no evidence for the deliberate inclusion of artefactual/environmental materials in the graves as part of the burial, other than the coffin and its contents.

The burials

The *in situ* remains showed all the burials to have been made with the bodies laid supine and extended (Figs 15–19). In nearly all the cases where the arm position could be discerned the hands had been placed by the sides (83.3%). Variations in the position of the hands included both hands over the pelvis (8.1%, of which

Figure 21 Grave 352 showing decayed wood of coffin base with nails and plate (burial 354)

33.3% hands crossed); one to the side and one over the pelvis (5.4%, of which 75% had the left hand on pelvis); and between the femora (2.7%). Positions involving the hands touching or crossing occurred in 5.4% of the burials. There was no apparent significance in the position of the hands related to the sex or age of the individual, or the stratigraphic phase of the burial; although in one of the stratigraphically early graves (423; adult male) the hands were in a different position to those in all the other burials, the wrists being crossed over the pelvis, possibly having been tied in position (Fig. 19).

There is evidence to indicate that a minimum of 77% of the corpses had been shrouded before being placed in the coffin (Chapter 4). The type of shroud which is likely to have been used would not necessarily have restricted the movement of the limbs and, as has been suggested for the adult male from grave 423, tying together of the hands and/or binding of the arms and ankles may have been undertaken to render the corpse easier to handle and stop the limbs moving awkwardly during preparation for burial (see Janaway 1993, 104–5). The open attitude of many of the jaws

Figure 22 Grave 331 showing studs outlining coffin shape (from lid) and grave cut into natural sand

suggests a chin-strap may not always have been employed to hold them together (eg, Figs 15 and 17); alternatively it could reflect variations in the decay rates of the fabric of the chin strap relative to that of the coffin lid.

Similar burial positions were recorded at the Quaker Burial Ground at Kingston upon Thames, though a number of the infant burials there had been made in a crouched/foetal position (Bashford and Pollard 1998, 159: N.B., the latter position is one naturally adopted by neonates <3 months (Cox pers. comm.)). The attitude of the hands by the sides at Kingston was interpreted as an indication of the limbs having been tied (*ibid.*; Janaway 1993, 104–5).

All, except possibly one (403 in grave 401), of the *in situ* burials had been made in coffins. Various types and quantities of structural fittings and coffin furniture survived in individual graves, together with clear impressions of the coffin outlines and occasionally decayed wood, though the latter rarely survived lifting (Figs 15–19 and 21; Chapter 3; Appendix I).

Coffin nails, many with mineralised wood adhering, were recovered from all except one (401) of the extant graves, the quantities per grave ranging from one to 72 with an average of 42. These, together with iron grips and grip plates from 60 (74%) graves, often described the coffin outline, demonstrating the common form flaring from the head end to the widest point at shoulder or elbow level, narrowing towards the foot end. As excavated, the coffins appeared to have been close-fitting, the bones of the shoulders, hips, feet, and skull generally lying up against the very edges. The coffin appeared more 'spacious' in only 22.6% of graves; for example, grave 237, where the skull lay several centimetres away from the head-end of the coffin (Fig. 16). It is likely that some – admittedly slight – compression of the coffin remains will have occurred over time, pressure from the grave fill forcing the sides and the ends of the box into the internal space and against the human remains.

Upholstery pins – used either as decorative detail over the fabric covering or to spell out biographical details in the coffin lid – were recovered from 22 graves (27.2%), particularly those in the easternmost row (Figs 15–18, and 22). They were noted in two main concentrations – in the western- and easternmost rows. These concentrations included some intercutting graves suggesting that the custom continued for a number of years, perhaps indicating familial connections. There were five other occurrences of the use of upholstery pins, randomly distributed outside the concentrations (in graves 261, 394, 404, 152, and 121). The biographical details were generally arranged in 2–4 lines across the upper portion of the coffin lid, extending from the shoulder to the waist level of the occupant. As the coffin lids collapsed over time the studded areas gave way, and both lines and letters commonly slipped apart, frequently leaving only illegible parts of letters or numbers. Partially legible details survived in about ten cases (Chapters 3 and 4; Figs 15–18 and 23–5).

Lettering, cut from sheet iron and used in the same way as the upholstery pins, was recovered from two graves, and tin-dipped breast plates from four; both of the former (graves 287 and 373) and one of the latter (grave 379) were partially legible (Figs 17, 19, and 25; Chapter 3). The breast plate from grave 379 provided the only conclusive evidence for the continued use of the cemetery into the early 19th century for what, at the time of excavation, was understood to be purely an 18th century burial group (Chapters 4–5; fig. 25). The graves with sheet iron lettering (287 and 373) occurred within the two areas in which upholstery pin use was concentrated. *In situ* breast plates were confined to graves in the south of the cemetery, three of which (graves 146, 300, and 379) cut earlier graves, perhaps indicating that their use was limited to the later decades of the cemetery's use (Fig. 23).

There are some similarities with the Quaker burials from Kingston upon Thames, particularly the

Figure 23 Site plan showing location of graves with legible biographical details (see Figs 17, 24, and 25)

biographical information formed by upholstery pins, use of breast plates, and shroud pins (Bashford and Pollard 1998). The preservation at Kingston was better, however, possibly in part due to the occasional use of lead coffins and lined vaults, the greater (19th century) temporal range of the cemetery, and the generally more ornate and expensive nature of the coffins.

Distribution

The majority of the graves (74%) were situated in the southern and western part of the site in an area *c.* 15 x 8.5 m, the rest forming small groups or singletons dispersed across the northern and eastern areas (Fig. 13). Little close-dating evidence survived in any of the graves. Although dates of death together with some biographical data was included on many coffins, very little survived in a legible form (see above and Chapter 3). Fully legible dates survived in only two cases – grave 261 (1772) and grave 379 (1813/?8) – with partial dates in three others, all 18th century. Consequently, the chronology of the cemetery is only relative and based on stratigraphic relationships.

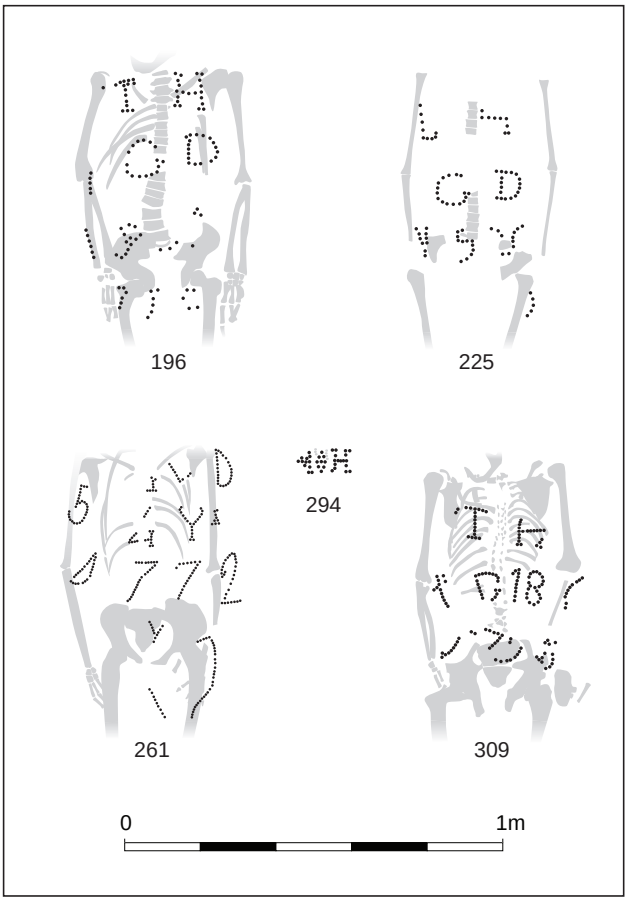


Figure 24 Detail of legible biographical details shown in copper alloy pins: graves 196, 225, 261, 294, and 309

Two major concentrations of graves were observable in the central and western parts of the site, each including *c.* 10–20 graves. Elsewhere, pairs or smaller grave clusters suggest what were probably deliberate groupings. For example, the four intercutting graves in the north-east of the site showed a close degree of accuracy in the recut indicative of reuse of the same grave plot. Although disturbance of the skeletal remains did occur, it was relatively non-destructive and suggests a deliberate attempt to respect the remains of the earlier burial in each case. Similarly, there were several instances of burials being made within extant graves or possibly more than one interment being made contemporaneously within a single grave, for instance, the two immature individuals (205 and 207) interred above the adult (197) in grave 196 (Figs 15–16). These various instances of multiple use of a grave plot provide the strongest evidence for a familial relationship between the individuals, though close friendships could have formed similar links.

The majority of the graves, both within the main clusters and most of their outliers, fell within one of eight north–south rows extending east–west across the site. The commencement of some rows clearly predated others, the subsequent insertion of both new rows and individual graves within rows commonly resulting in limited, if any, disturbance to their predecessors. The alignment and positioning of some of the stratigraphically latest rows were different to those of the earliest rows, possibly suggesting that the exact locations, or knowledge of the existence of the earliest graves, was lost. This could reflect the lack of permanent markers for the earlier graves and/or a long lapse of time between the establishment of the rows, which may be reflective of the change in congregation using the cemetery (see Chapters 4 and 5). Some of the stratigraphically earliest graves (eg, 423 and 281) seemed to pre-date the establishment of the rows (indicated by slight but noticeable deviations in alignment and position). It is possible that subsequent rows (and clusters) were established in relation to these graves, ie, the earlier interments were the focus of later burials, perhaps due to familial or similar connections. An example of this could be the four individuals with 'H' as their last initial in the graves in the eastern-most row (Fig. 23).

The burials on the northern margins of the site were relatively dispersed and more random in their alignment than those within the main groups, although

Figure 25 Detail of legible biographical details shown in copper alloy pins (grave 213), on tin breast plate (grave 379), in tin letters (grave 373)

all were roughly south-west–north-east. The few north-west–south-east burials made in the south-east of the cemetery also formed a distinct group. Both sets of variations may relate to the later use of the cemetery; the former possibly following the apparent northwards extension of the burial ground post-1751 and the latter post-dating the demolition of the chapel in the last few years of the century (see above, Chapters 4 and 5). Either or both could be linked to the change in the congregation using the burial ground.

A *c.* 6 x 3 m area in the western half of the cemetery between the main concentrations of graves was devoid of burials The absence appears deliberate and may indicate an area set aside for some specific purpose, perhaps the location of an above-ground memorial or seating area for which no archaeological or cartographic evidence exists (Fig. 13). The well (see above) was located in the north-east corner of this area, possibly demonstrating its contemporaneity with the cemetery and activities undertaken with it. A *c.* 1.60 m wide strip of ground appeared to separate the main concentration of burials from the few dispersed graves to the north. This may represent the original northern boundary of the burial ground as seen in the 1751 map prior to its apparent extension to the position shown in the 1774 map (see Chapter 5, Figs 7 and 14). Alternatively, it could represent an access route around the main concentration of graves.

Multiple burials/grave re-use

Four graves – 121, 196, 306, and 391 – had been used for the burial of more than one individual (Figs 15, 16, 18, 19, and 26). With the exception of a dual burial in one coffin (grave 391), all involved the primary burial of an adult with the later deposition of a young immature individual. Grave 391 contained the remains of a 35–45 year old female with a neonate laid at her right shoulder; the two had been buried together in the same coffin. The *c.* 7–8 month foetus from grave 121 had been interred in its own coffin directly above that of a 40–50 year old female and it is most likely that the two were buried at the same time. The multiple burials in graves 196 and 306 were also made in separate coffins. In the former, two coffins – one containing an infant (3–5 yr) and the other a juvenile (5–6 yr) – appeared to have been laid directly over the head/chest and leg/foot end respectively of the underlying coffin containing the remains of an adult male (35–55 yr). The lack of a separate stratigraphic level between the upper and lower coffins suggests they were either all buried together or, that one or both secondary interments was made before sufficient time had elapsed for the underlying coffin to start to break down. There was some evidence to suggest that the grave may have been recut to accommodate the individual at the west end of the grave. In grave 306,

Figure 26 Foetus (123) buried above adult (124) in grave 121

an infant (1–1.5 yr) had been interred over the central area of a coffin containing the remains of an adult female (45–55 yr). Although no recut was evident, and there was no clear evidence of a separating stratigraphic entity, the displacement of the adult's right innominate (pelvic bone) indicates that the infant was buried some years after the initial interment (Fig. 18).

It has already been observed that a few graves within the cemetery had been recut, clearly deliberately given the close alignment, to make secondary or even further interments (see above – distribution). Two of the possible five grave groups which may fall into this category (graves 315 and 269, and 312 and 272) involved the secondary interment of an infant or juvenile over the earlier burial of an adult female.

There are a few rare instances from medieval cemeteries in Britain where more than one individual was buried in a single coffin, generally involving the deposition of a stillbirth or recent newborn together with the mother in cases of death during childbirth (Gilchrist and Sloane 2005, 127). Such may have been the case with the individuals buried in grave 391. The contemporaneous burial of two or more individuals in the same grave in the medieval period (excluding emergency mass burials) appear to have commonly comprised that of an adult with a child or two children together; whilst a familial relationship may have existed between the individuals this has rarely, if ever, been verified by DNA analysis (*ibid.*, 157–9; see Chapter 4).

Three cases of infants being buried on top of coffins containing the remains of adult females were recorded during the excavations at the Quaker burial ground in Kingston upon Thames, and grave re-use

Figure 27 Site plan showing charnel pits and locations of redeposited bone

was observed in the early phases of the cemetery (Bashford and Pollard 1998, 156).

Charnel pits

There was clear evidence for eight features – three directly linked – which had been deliberately cut for the redeposition of disarticulated human bones. Seven (143, 159, 162, 211, 338, 365, and 371) comprised regular, sub-rectangular cuts clearly associated with a specific grave cut (Fig. 27). The remaining one (355) was slightly less regular in form and more difficult to associate with any one event.

Three similarly sized pits – 0.43–0.47 x 0.22–0.30 m, 0.08–0.14 m deep – had been cut through the base of grave 126 prior to the burial being made (143 to north, 159 central, and 162 to the south; Fig. 15). All were sub-rectangular, with steep convex sides and irregular bases and contained various disarticulated skeletal elements from the same infant (4–5 yr). As there was no indication of any part of an extant grave cut by the insertion of 126 it is assumed that the infant's grave was either accidentally or deliberately (ie, the grave cut was expanded for re-use) obliterated by the later cut.

Three other graves (146, 185, and 335) had small cuts (0.28–0.38 x 0.24–0.36 m, 0.09–0.22 m deep) associated with them in which were buried individual bones disturbed by their insertion. Pit 211 was cut through the west end of grave 185 to house lower limb bones from grave 193 disturbed by its insertion (Fig. 15). Pit 371 was cut through the base of grave 146, and contained the skull from burial 360 (grave 358). Pit 338 had been cut at the eastern end of grave 335 to hold two skeletal elements presumably disturbed during the insertion of the overlying grave 300 (Fig. 18).

Pit 365 (0.84 x 0.30 m, *c.* 0.09 m deep) had been cut through the base of grave 331 prior to the insertion of the burial to accommodate some of the disarticulated remains from two individuals (an adult male and an infant) neither of whom could be matched with any of the others within the assemblage. The implication is that the cutting of 331 followed the same lines as an earlier grave, which itself may have disturbed an earlier interment or contained the remains of a dual burial.

The sub-rectangular pit 355 (1.40 x 0.80 m, *c.* 0.30 m deep) was difficult to distinguish in excavation but had cut through the upper levels of graves 382 and 349 at the west end of the site (Fig. 27). The pit contained the disarticulated remains (*c.* 8%) of an adult female which could not be matched with any of the extant burials from the site. It is unclear where the grave of this individual was originally located or what had occasioned its disturbance.

Although no cut was evident in excavation, it is likely that skull 243 from burial 218, found at the distal end of grave 213, had originally been placed in a small charnel pit similar to those observed elsewhere.

Such incidental disturbance of burials leading to the deposition of charnel was commonplace in medieval cemeteries in Britain and generally on a larger and less 'personal' scale than seen at West Butts (Gilchrist and Sloane 2005, 194–5). There are closer parallels with the charnel pits excavated at the Quaker burial ground in Kingston upon Thames, which were similarly situated in the base of graves and ranging in size from a single shovel – as at Poole – to that of a grave (Bashford and Pollard 1998, 156).

Boundary ditch and wall foundations

A possible boundary ditch (135) was observed in two excavated segments along the north-eastern margins of the site, following the line of the former West Butts Street (Fig. 13). The ditch, which extended along a minimum 4.5 m length, was *c.* 2.5 m wide and 0.85 m deep, with concave and moderately sloped, possibly stepped, sides. The main (and primary), backfill comprised a dark greyish–brown sandy silt, probably formed by prolonged silting.

Artefactual material recovered from the fill mainly comprised post-medieval pottery, glass, CBM, and clay tobacco pipe fragments. The majority of the pottery was post-medieval, with a broad date range (1485–2000). The overlying fill was mainly composed of demolition debris including brick, slate, and limestone tiles, and chalk and limestone blocks, some of which were bonded with a yellowish–white lime mortar.

A second, smaller and shallower, linear feature (134; 0.50 m wide, 0.38 m deep) had been cut through the upper layer of silting within 135; it lay on the same alignment as the latter but had steep, straight sides and a fairly flat base suggesting it represented a wall foundation trench. The initial fill comprised naturally accumulated sandy silt overlain by demolition debris; the artefactual material recovered indicated a later post-medieval date.

Ditch 135 probably represents the early boundary to the Baptist Chapel and burial ground. A ditch may plausibly have been more practical than a wall due to the proximity of the shore and potential for flooding (Fig. 7). The wall foundation probably relates to a later phase, serving the same purpose as the earlier ditch, or could possibly be associated with the two-storey building which appears to have stood in/close to this location for a short period in the mid-20th century (see above).

Post–cemetery features

The possible date of the small pit containing the *in situ* buried remains of an elderly dog can only be conjectured (Fig. 13; Chapter 3). It was not possible to deduce with any confidence the level from which the cut had been made but it seems most likely to have occurred in the mid–late 19th century, between the point at which the cemetery was officially closed and the construction of the terraced cottages to the south (see Chapter 5).

The only other extant feature on the site was the south-west–north-east brick wall foundation (385) on the southern margins of the cemetery, aligned perpendicular to West Butts Street. The two-course foundation, 0.41 m wide and 0.14 m deep, was overlain by three courses of 'upstanding' wall 0.36 m wide and 0.21 m high. The mixture of red and darker, slightly bluish, bricks (probably clamp fired), measuring 230 x 110 x 70 mm, formed an irregular bond, with a pinkish–yellow sandy lime mortar. The wall was extant over a 16.3 m length but probably continued across the site to the small portion of similar walling against the site's eastern boundary.

The wall sat on the natural/interface; no graves lay below or to the south of it. Although post-medieval brick walling is difficult to date closely, the combined evidence suggests a late 18th or 19th century date,

though some characteristics could extend the possible construction date to as late as the early 20th century. The position of the wall appears to corresponds fairly closely with the southern boundary of the burial ground as shown on the 1841, 1890, and 1905 maps (Figs 10–12), which also correspond with the position of the northern boundary for the early 20th century terraced houses constructed on the south side of West Butts Street (see Chapter 5).

CHAPTER 3
THE FINDS FROM THE EXCAVATION

The finds, artefactual and environmental, have been divided into two main categories; those pertaining to the pre-cemetery use of site and those forming part of the funerary assemblage. Finds which may relate to the use of the site after the closure of the cemetery in the mid-19th century are very few since the area of the cemetery was known and respected – ie, disturbed by few negative features – thereafter (Chapter 5).

The materials comprising elements within the funerary assemblage were subject to full analysis. Those materials from the rest of the finds assemblage are known to have been largely redeposited within the area of the site and are, therefore, of more limited value, being more difficult to define both temporally and spatially. Consequently, these materials were subject to a relatively detailed assessment but full analysis was not undertaken. The results presented in the first section of this chapter have been drawn from the assessment reports.

THE POST-MEDIEVAL MADE-GROUND

A range of material types was recovered from the make-up layers/garden soils 101 and 102 which overlay the natural sand across the whole area of the site and through which all the graves were cut; though some reworking of the upper levels had clearly occurred both during and after the cemetery phase (Chapter 2). These layers appeared to have been formed by years, possibly decades, of dumping and reworking of occupation debris in marginal areas of the town, possibly as a deliberate form of land reclamation along the foreshore areas, though the latter may simply have formed a convenient dumping ground external to the areas of greatest occupation (Figs 6, 7, and 14).

The finds assemblage from these layers suggests this form of land-use commenced in the late medieval period and continued into early post-medieval times. Material from these layers became incorporated in the grave fills – the graves being cut through them – and some additional occupation debris doubtless found its way into the soil both during the use of the cemetery and subsequent to its closure.

While the material is clearly all redeposited from elsewhere in the town, possibly only as distant as those properties to either side of West Street (later West Quay Road) and Pillory Street north of Market Lane (Fig. 14), it still provides an interesting impression of at least some of the town's socio-economic activity across the late medieval-early post-medieval transition (*c.* 15th–17th centuries), including the years shortly preceding the formation of the West Butts Street congregation.

Artefactual material
by Lorraine Mepham

The finds from the made-ground range in date from medieval to post-medieval, with one possible Romano-British pottery sherd. Table 1 summaries the quantified totals by material, further detail being held in the project archive database. As all the material was known to have been redeposited and consequently of limited analytical value, the finds were briefly scanned and details of their range, condition, and date (where appropriate) were recorded.

Table 1. Non-funerary finds totals by material type

Material type	*No.*	*Wt (g)*
Animal bone	1142	8007
Ceramic building material	926	50,414
Clay pipe	210	894
Glass	223	5017
Pottery	1056	16,190
Shell	372	8215

Pottery

The pottery assemblage was quantified by ware type and spot dates were recorded for the more closely datable types, although much of this material comprises coarsewares (of both medieval and post-medieval date) which had a lengthy timespan (Table 2).

Table 2. Pottery totals by ware type

Date range	*Ware type*	*No. sherds*	*Wt (g)*
Roman	greyware	1	4
Medieval			
	N French monochrome	11	53
	Saintonge ware	9	57
	Other imports	4	27
	Laverstock-type fineware	1	4
	SW Wilts/E Dorset coarseware	193	2505
	Poole Harbour whiteware	11	182
	W Dorset sandy ware	1	8
	sub-total medieval wares	230	2836
Post-medieval			
	Verwood-type earthenware	475	10,072
	Coarse redware	66	938
	East Holme whiteware	5	64
	'Tudor Green' ware	3	9
	Staffs-type mottled ware	6	38
	Staffs-type slipware	8	51
	Stoneware	51	666
	Tinglaze	21	272
	White saltglaze	6	28
	Basalt ware	1	22
	Refined redware	4	25
	Porcelain	2	24
	Creamware	14	98
	Bone china	12	60
	Industrial whiteware	151	983
	sub-total post-medieval wares	825	13,350
Total		1056	16,190

Overall the range of wares is consistent with evidence previously recorded for the Poole area (eg, Jarvis 1992). The medieval assemblage is dominated by coarse sandy wares of a type common across east Dorset and south-east Wiltshire. One source for these wares is known at Laverstock outside Salisbury (Musty *et al.* 1969), but there are likely to have been other sources within the overall distribution area, for example within the area later covered by the post-medieval industry centred on Verwood in east Dorset. The vessels recovered include jars with short, stubby, squared rims, bowls with expanded, 'hammerhead' rims, and jugs, some slip-decorated – the overall potential date range is late 12th to early 14th century. Other coarsewares are limited to a single sherd of a finer sandy ware of a type commonly found across west Dorset, probably of 13th/14th century date. Alongside these coarsewares are fine glazed whitewares, probably made in the Poole Harbour area, and a single sherd from a Laverstock-type decorated jug; both types date from the 13th or early 14th centuries.

The presence of imported pottery, in the form of fine glazed wares from northern France and from the Saintonge area (SW France), is interesting but not unexpected given the quantities of such wares already recorded from the port (eg, Allan 1983; Jarvis 1992). Four further sherds have been more tentatively identified as imports; these include two coarsewares, possibly of Iberian origin; a fine, white-firing fabric, possibly another French type; and a micaceous coarseware of uncertain origin.

Predominant amongst the post-medieval assemblage are products of the Verwood industry of east Dorset, in operation from at least the mid-17th century, and monopolising the coarseware market from the 18th century. Other coarsewares present here, comprising redwares of various types (including slipwares), a few sherds of East Holme whiteware (Terry 1987), and two sherds of 'Tudor Green' ware, are likely either to pre-date the 18th century or to be of modern date (the latter includes a small quantity of white-slipped sherds of 19th/20th century type).

More closely datable are the tinglazed earthenwares (17th/early 18th century), German stonewares (16th–early 18th century), and Staffordshire type slipwares and mottled wares (17th/early 18th century). None of these occurs in any significant quantity. Later wares, with the exception of the 19th/20th century factory-produced wares, are similarly poorly represented, comprising the 18th and early 19th century wares such as white saltglaze, basalt ware, refined redware, porcelain, and creamware.

Other materials

Fragments of ceramic building material include brick, roof tile, and drainpipe. The roof tile consists mainly of flat peg tiles; largely of post-medieval date, although a few fragments in coarser, paler-firing fabrics can be more broadly dated as medieval/post-medieval, and one fragment was tentatively dated as medieval. Other roof tile comprises fragments of pantiles of 17th century or later date. The bricks appear to be exclusively unfrogged types.

Datable material amongst the clay pipes comprises bowls and makers' marks. Bowls range in date from *c.* 1640–1800+, with an emphasis on the later 17th and early 18th centuries. Three makers' marks were recorded, one a heel stamp 'RH' (bowl, dated 1680–1710), possibly relating to the Henning family of Verwood and Alderholt (Markell 1992, 161–3); one a relief spur stamp 'I/I' (bowl, dated 1700–1750), of an unknown maker, and the third a stem stamp –ENYON LIVERPOOL, probably C. Kenyon of Liverpool, 1790 (*ibid.*, 175).

All of the glass recovered is of post-medieval date. The most common type is the green wine bottle. A few examples appear to represent the 'onion' and 'mallet' forms of the mid-17th to mid-18th centuries, but most

are cylindrical forms of the mid-18th century onwards. Other glass includes fragments of smaller bottles and jars, of 18th century or later date where datable, and window glass. Fragments of four high quality drinking vessels were recovered, Venetian or *façon de Venise*, of 16th/17th century date: a rigaree-decorated base-ring from a beaker, a folded footring from a goblet, plus body sherds from two further goblets, one with thin applied thread trails and blobs in opaque white, and the second with raised mould-blown ribs. Such vessels are well known from previous excavations in Poole (Charleston 1992, figs 79–80).

A fragment of worked bone, possibly cut from a cattle femur, formed a tapering handle which may have been a toothbrush handle. Other post-medieval toothbrushes have been found in Dorchester (Woodward 1993) and London (Mac-Gregor 1985, 183).

The shell consists entirely of oyster fragments. These were quantified by valve type (left or right), which demonstrated that left and right valves were more or less equally represented. In other words, the shells represented both preparation and consumption waste and there was no apparent separation of the two types within any context.

Table 3. Animal species list by number of specimens

Species	*No. frags*	*MNE*	*MNI*
Horse	3	2	1
Cattle	123	66	2
Sheep	4	3	1
Sheep/goat	83	49	5
Goat	1	1	1
Pig	56	39	6
Dog	27	24	2
Cat	22	19	2
Fallow deer	3	1	1
Bird	15	12	3
Lagomorph	7	6	2
Fish	7	7	2
Monkey	1	1	1
Rat	complete individual		1
Large mammal	365	n/a	n/a
Medium mammal	137	n/a	n/a
Small mammal	2	n/a	n/a
Unidentified	8	n/a	n/a
Total	864	230	29

Animal bone

by Stephanie Knight

Where applicable the species, bone element and side, fusion, mandible wear stages (following Grant 1982 and Levine 1982), and the zones present (following Dobney and Rielly 1988) were recorded for each bone fragment, and measurements taken (following von den Dreisch 1976). The positions of butchery marks, burnt areas, and fracture types were recorded (Outram 2002). Bird bones were identified to family, and measurements and zones recorded using Cohen and Serjeantson (1990). Withers heights were calculated using von den Dreisch and Boessneck (1974) and ages estimated using Silver (1969; 18th and 19th century figures). Conjoining fragments that were demonstrably from the same bone were counted as one to minimise distortion. The bones of complete individuals were not counted, but the animal recorded as one complete individual. Fragments that could not be identified to species or family were recorded as small, medium, or large mammal, bird or amphibian.

Condition

The made-up ground contained a large proportion (18%) of the 864 bones recovered from the excavation. Most of the graves and other features were cut through and filled with this material, and the majority of the animal bones are likely to have originated from it. The source of the material is likely to be local and, although it could have come from several sources, it appears to be fairly homogeneous; consequently, the animal bone assemblage has been treated as one group.

The proportions of bones identified to species was the same (45%) for both the bone from the make-up layers and that redeposited in the grave fills. The average completeness of bones (excluding unidentified fragments), however, was slightly higher in the material from the made-ground (50% complete) in comparison with that from the grave fills (48%), probably reflecting the additional reworking of the material in the latter. The proportion of dry/new fractures compared to helical (fresh) was very slightly higher in grave fills (85% compared to 84% in 101/2), corroborating this interpretation. The bone surface is often flaky, suggesting chemical erosion, but abrasion from reworking is also common. A higher proportion (8%) of bones from graves is in poor condition than is that from the make-up layer (3%).

Table 4. Species proportions of the main domesticates

	NISP	*MNE*	*MNI*
Cattle	46.9	42.9	15
Sheep/goat	31.7	31.8	38
Pig	21.4	25.3	46

Table 5. Cattle kill patterns from bone fusion data (p=proximal; d=distal)

Element	*Age at fusion (months)*	*Fused*	*Unfused*	*Total*	*% found*	*% fused*
Metapodial p	before birth	2	–	2	100	86
Scapula d	7 8	4	–	4	100	
Pelvic acetabulum	7 10	–	1	1		
1st phalange p	13 15	6	–	6	100	87
Humerus d	15 18	1	1	2	50	
Radius p	15 18	1	1	2	50	
2nd phalange p	18	5	–	5	100	
Tibia d	24 30	2	2	4	50	57
Metacarpal d	24 30	–	1	1	0	
Metatarsal d	27 36	2	–	2	100	
Calcaneum p	36 42	1	1	2	50	59
Femur p	42	1	1	2	50	
Femur d	42 48	4	2	6	67	
Humerus p	42 48	2	1	3	67	
Radius d	42 48	1	1	2	50	
Tibia p	42 48	1	1	2	50	

Species proportions

Cattle are the best represented species by fragment and minimum number of elements (MNE) count, but seem to be over-represented, as pigs and sheep/goats are better represented with minimum number of individuals (MNI) counts (Tables 3 and 4). Two sheep and one goat were positively identified; the rest of the bones could not be more tightly classified than sheep or goat (ovicaprids). Dogs and cats are also relatively well represented, although this is probably due to the presence of partial skeletons. Wild animals, fish, and birds are less well represented.

Animal husbandry

Horse bones are rare, with only three bones from a minimum of one mature individual (8–9 yr) of middle size (1.4 m at the shoulder). Over half the cattle were kept to maturity, with a relatively low mortality rate for animals under 18 months (Table 5). This indicates an economy based on secondary products rather than meat consumption. No withers heights could be calculated, but other measurements indicated large animals.

The majority of ovicaprids were also killed when mature; in this case over 80% died after the age of 30 months (Table 6). Mandibular wear suggests that most animals died over the age of 36 months, with three full toothrows in heavy wear. Again this suggests that meat was not the main reason for keeping these animals; milk and, especially, wool are the most likely products from a flock with this age structure. Withers heights are wide ranging, between 504 mm and 716 mm, with an average of 584 mm (N=10). Three animals were in the upper range of sizes, four in the lower range and three around 600 mm. Two were positively identified as sheep (heights of 716 mm and 597 mm). This indicates that a range of breeds and/or sexes was present; the presence of male (and castrates) and female ovicaprids in roughly equal numbers may, again, suggest a population exploited mainly for wool.

Despite small numbers of ageable bones, the bone fusion analysis indicates that most pigs were killed between their first and second year, in keeping with an interpretation of pig raising primarily as a source of meat (Table 7). One mandible of a pig that died between 18 and 24 months supports this interpretation. Only one pig can be identified as reaching the age of 3½ years. A withers height of 680 mm was calculated from an astragalus.

The dog from grave 334 (Fig. 13) is fairly complete; the absence of some bones may be due to poor preservation, as all the bone in this context was friable. The remains are those of an old individual with very worn teeth, and severe grooving and eburnation on the humerus–ulna joint, which would have caused pain and limping. The age and condition of the animal suggest it had been tended until its death and buried with care. Its shoulder height is estimated at 595 mm (Harcourt 1974). Two other dog bones from at least one other mature individual were also recorded.

Cat bones were found in several contexts, often in groups, suggesting that these were the remains of burials of animals disturbed by the grave cutting and redeposited in the grave fills. An area such as this at the edge of the town would have been suitable for the burial of pets prior to the establishment of the cemetery for human burial. Alternatively, the animals may simply have died here, the area potentially being an attractive one for scavenging given the apparent surface dumping of occupational debris.

All bird bones were *Galliform* in morphology, probably domestic fowl with one goose-sized individual, although they have not been formally identified to species. A range of bone elements was recovered, from at least two mature individuals. Five fish vertebrae have not been identified to species but the variation in size and morphology suggests at least two individuals. A fish spine and scale have also been

Table 6. Sheep/goat kill patterns from bone fusion data (p=proximal; d=distal)

Element	*Age at fusion (months)*	*Fused*	*Unfused*	*Total*	*% fused*	*% unfused*
Metapodial p	before birth	7	–	7	100	100
Pelvic acetabulum	6 10	2	–	2	100	
Humerus d	10	3	–	3	100	
Radius p	10	4	–	4	100	
1st phalange p	13 16	3	1	4	75	85
Matacarpal d	18 24	1	–	1	100	
Tibia d	18 24	4	1	5	80	
Metetarsal d	20 28	3	–	3	100	
Ulna p	30	1	–	1	100	83
Femur p	30 36	1	–	1	100	
Calacaneum p	30 36	2	–	2	100	
Radius d	36	4	–	4	100	
Humerus p	36 42	1	1	2	50	
Femur d	36 42	3	1	4	75	
Tibia p	36 42	3	1	4	75	

recovered from sieved samples (no samples were specifically taken for the recovery of such material).

A range of wild animals is represented, each by a small number of bones. Several lagomorph (probably rabbit) bones may be from natural fatalities on site or have been brought in from deposits elsewhere during land reclamation. Lagomorphs are useful for their skins and may have been killed for this commodity and/or eaten. The partial nature of the remains suggests these bones were brought onto site within the soil matrix, with the remainder of the skeleton left at its original place of deposition or dumped elsewhere on site. A piece of fallow deer antler might be a remnant from antler-working in the area from which the soil was sourced; this does not necessarily indicate consumption of venison as the antler may have been shed. A rat skeleton found approximately 0.20 m above the skull in grave 404 may have been from a dead individual incorporated into the backfill of the grave. It is unlikely to have burrowed down this far, but is too far above the skeleton to have been either within or on top of the coffin (See also the note below).

Consumption

The poor condition of the bone surface may have obscured cut marks; however, 94 (11%) of the bones showed evidence of butchery other than fracture for marrow extraction (which was found on 72 bones). Chops were most common (48 bones; mainly cattle but six were sheep/goat or pig), but knife cuts were also present (36 bones; majority of sheep/goat and pig). Saw marks were found on nine bones, mainly transversely through long bone shafts or large mammal ribs. These are likely to be from portioning the carcass rather than marrow extraction. Some may be connected with bone working, although the position mid-shaft suggests that this is not the case for the majority. Unusually, one large swine metapodial had been transversely sawn through the midshaft.

Cattle bones appear to have been chopped through in no particular pattern, both for portioning and splitting the bones for marrow extraction; the spine seems to have been longitudinally split. Some sheep/goat bones have been chopped through for portioning, but the majority bear marks from filleting and disarticulation. Pig bones appear to have been chopped and sometimes carefully cut for disarticulation and filleting rather than portioning. Some animals were decapitated and the jaw separated from the head, and one cattle mandible has deep chops on the diastema indicating that the left and right sides of the mandible were split.

Burning was only noted on 13 bones, of which three were carbonised and ten calcined. None was suggestive of consumption activity but may have been the waste from fires or accidental burning.

Analysis of the surviving skeletal elements showed that canine activity was not a factor in bone element survival, as the fragile bone parts least likely to be recovered (the distal femur for example) were present in relatively large numbers. Recorded instances of gnawing are rare, found on only 20 bones in 14 contexts, on cattle, sheep/goat, and pig bones. Relatively low proportions of cattle and pig mandibles and metapodials might indicate that these parts, often regarded as waste because of the small amount of muscle tissue present, may have been separated from the rest of the carcass at an earlier point, perhaps during initial butchery and skinning. Most parts of the sheep skeleton are present, suggesting that these bones do not originate from specialised butchery, industrial, or consumption deposits. The absence of sheep/goat and pig phalanges may be due to poor recovery of these small bones.

Discussion

A 16th century assemblage from Thames Street, Poole (to the south of St James' Church; Fig. 14), contained mainly domesticates (cattle, sheep/goat, and pig), with some horse and deer, rabbit, hare and 'a wide range of birds and fish' (Coy 1992, 189). Pigs are better

Table 7. pig kill patterns from bone fusion data (p=proximal; d=distal)

Element	*Age at fusion (months)*	*Fused*	*Unfused*	*Total*	*%fused*	*%unfused*
Humerus d	12	3	–	3	100	83
Radius p	12	2	–	2	100	
Pelvic acetabulum	12	–	1	1	0	
Tibia d	24	–	1	1	0	14
1st phalange p	24	1	1	2	50	
Metapodial d	24 27	1	1	1	0	
Calcaneum p	24 30	–	3	3	0	
Femur p	42	1	3	4	25	14
Femur d	42	–	2	2	–	
Tibia p	42	–	1	1	–	

represented at West Butts than at Thames Street although the number of identified specimens counts may have under-represented the smaller species in Coy's analysis. Dog and cat remains were present, as was a black rat. The majority of sheep at Thames Street were mature with mandible wear stages of 40–47 (slightly greater than that from West Butts at MWS 28–40), while the pigs were generally immature. Ten per cent of cattle were calves, a similar proportion to West Butts. Fish of very different sizes were present at each site (Coy 1992, 191). The sheep withers heights have a lower value for both the largest and smallest animals (450–680 mm based on 76 examples) in the Thames Street assemblage than at West Butts. The different sample sizes may account for this discrepancy. Similar butchery methods were practised, with longitudinal splitting of the spine (in one instance at each site this took place in two stages), and cattle ribs cut into sections.

In summary, the material from West Butts Street is similar in nature to that from the 16th century deposits in central Poole, and it is probable that the material incorporated in the made-up ground derived from within the town. The remains are from butchered domestic animals that had previously been kept for milk, traction, and wool, and only pigs were kept mainly for meat. During primary butchery, the head and feet bones of larger animals may have been deposited separately to the meat-bearing bones, and the latter deposits appear to have provided the bulk of the faunal remains in the reclamation material. The carcasses had been longitudinally split, the bones disarticulated and those of the larger animals especially had been chopped through for portioning. Other species (lagomorphs, birds, and fish) may have been exploited for meat or skins or been incidental inclusions (rat). One antler fragment may have been from antler-working or an accidental inclusion.

After reclamation the site may have been used as a burial area for pets and/or feral animals that had died naturally, the latter at least probably prior to use of the area as a human cemetery.

Note on the Green/Savannah monkey

by O. Röhrer-Ertl

A fragment (*c.* 80 mm long) of the distal portion of a left humerus recovered from clearance layer 100 is generally in good condition, with some flaking and longitudinal splitting similar to that observed elsewhere in the animal bone assemblage, the old fracture being sustained to dry bone. The bone has been identified as that of *Cercopithecus aethiops*, the Green or Savannah monkey, the individual being a young adult male. These animals are indigenous to west Africa and this specimen probably derived from an animal brought to England in the 17th–18th centuries. This was a period when exotic animals and birds (parrots) were brought to Europe in large numbers, partly as private cargo of ships' crew members – personal pets or to be sold-on. In the 16th century, examples of these animals in England would have been very rare, affordable only to very important/wealthy individuals, their import being only feasible via Holland. The later date is far more probable, Poole being the port of entry and the animal dying while resident in the town.

THE FUNERARY ASSEMBLAGE

This section includes all items except the human remains from this part of the assemblage. The human remains are reported in Chapter 4.

The metalwork

by Lorraine Mepham and Rachel Every

The funerary assemblage recovered from the cemetery consists largely of items relating to the construction and ornamentation of the coffins. Wood and other organic materials survive only in a few cases; therefore, these items comprise almost entirely metalwork. Evidence for burial clothing is very sparse, although a few dress fittings, and some traces of mineral-preserved textile, were recovered. Finally, a few miscellaneous objects found in graves might represent personal items or could just be incidental finds redeposited in the grave fill from the made-up ground through which the graves were cut. Obviously non-funerary objects found redeposited in graves, such as a

Table 8. Grave finds by context

Grave	*Grip*	*Grip plate*	*Breast plate*	*Other plate*	*Cu stud*	*Fe stud*	*Fe nail*	*Cu tack*	*Fe tack*	*Misc. struct.*	*Cu pin*	*Other misc.*	*Total*
121/123	2	–	–	–	28	–	19	–	–	–	5	–	52
121/124	–	–	–	–	18	–	76	–	–	–	–	–	96
backfill	–	–	–	–	*79*	–	*16*	–	–	–	–	–	*95*
126	–	–	–	–	–	–	97	–	–	–	–	–	97
129	8	–	–	–	–	–	79	–	–	–	1	*Cu buckle*	88
backfill	–	–	–	–	–	–	–	–	–	–	–	–	*1*
146	7	–	1	2	–	–	1	–	–	–	1	–	12
backfill	*3*	–	–	*1*	–	–	*54*	–	–	–	*1*	–	*59*
149	2	–	–	–	–	–	21	–	–	–	3	–	26
backfill	–	–	–	–	–	–	*4*	–	–	–	–	–	*4*
152	2	–	–	–	–	10	30	–	–	–	–	–	42
167	2	–	–	–	–	–	16	–	–	–	2	–	20
173	6	–	–	–	–	–	64	10	–	–	–	Cu button	81
176	8	–	–	–	–	–	41	–	–	–	–	–	49
backfill	*1*	–	–	–	–	–	*82*	–	–	*Cu strip*	*2*	*Cu token*	*88*
179	2	–	–	–	–	–	45	1	–	–	–	–	48
backfill	–	*2*	–	–	–	–	*24*	–	–	–	–	–	*26*
182	2	–	–	–	136	–	21	–	–	–	1	–	160
185	1	–	–	–	–	–	45	–	–	–	–	–	46
190	1	–	–	1	5	–	7	–	–	Fe split pin	2	–	17
backfill	–	–	–	–	–	–	*15*	–	–	–	–	–	*15*
193	1	–	–	–	199	–	10	–	–	–	–	–	210
196/198	–	2	–	–	122	–	31	–	–	–	16	–	171
196/205	1	–	–	–	23	–	24	–	–	–	–	–	48
198/207	–	1	–	–	48	–	21	–	–	–	–	–	70
199	4	–	–	–	–	–	151	–	–	–	3	–	158
202	–	–	–	–	–	65	–	–	–	–	–	–	65
208	2	–	–	–	–	–	25	–	–	–	1	–	28
213	1	*1*	–	1	107	–	*14*	–	–	–	–	–	109
backfill	–	–	–	–	–	–	–	–	–	–	–	–	*15*
216	–	–	–	–	–	–	9	–	–	–	–	–	9
backfill	–	–	–	–	–	–	*5*	–	–	–	–	–	*5*

Grave	*Grip*	*Grip plate*	*Breast plate*	*Other plate*	*Cu stud*	*Fe stud*	*Fe nail*	*Cu tack*	*Fe tack*	*Misc. struct.*	*Cu pin*	*Other misc.*	*Total*
219	2	–	–	–	–	34	56	–	–	–	–	–	92
backfill	–	–	–	–	–	–	*1*	–	–	–	–	–	*1*
222	6	–	–	–	–	–	172	–	–	Fe fitting	–	–	179
225	1	2	–	–	88	–	32	–	–	–	3	–	126
backfill	*1*	–	–	–	–	–	*1*	–	–	–	*1*	–	*3*
228	6	–	–	–	–	–	128	7	–	–	4	–	145
234	6	–	–	–	–	–	80	1	–	–	1	–	88
237	3	1	–	–	–	–	30	–	–	–	2	–	36
backfill	–	*1*	–	–	–	–	–	–	–	–	–	–	*1*
240	–	–	–	–	–	–	1	–	–	–	–	–	1
backfill	–	–	–	–	–	–	*1*	–	–	–	–	–	*1*
244	1	1	–	–	–	101	127	–	1	–	4	*bone handle*	235
backfill	*9*	*1*	–	–	–	*31*	–	–	–	*Fe bar, Fe sheet*	–	*slate pencil*	*45*
247	6	–	–	–	–	–	31	7	–	–	1	–	45
	–	–	–	–	*12*	–	–	–	–	–	–	–	*12*
250	2	–	–	–	–	1	10	–	–	–	2	–	15
253	4	–	–	–	–	–	7	–	–	–	–	–	11
258	–	2	–	–	–	–	46	–	–	–	3	*Ag coin*	51
backfill	–	–	–	–	–	–	–	–	–	–	–	–	*1*
261	5	–	–	–	364	–	11	–	–	Fe sheet	–	textile	382
269	2	–	–	–	–	–	46	16	3	Fe fitting	–	textile	69
272	–	–	–	–	–	–	20	–	–	–	–	–	20
275	1	–	–	–	–	–	52	–	–	–	–	–	53
278	4	–	–	–	–	–	45	5	–	–	–	–	54
281	–	*3*	–	–	42	–	86	–	–	–	–	–	128
backfill	–	–	–	–	–	–	–	–	–	–	–	–	*3*
284	–	1	–	–	–	1	52	–	–	–	–	–	54
backfill	–	–	–	–	–	–	*2*	–	–	–	–	–	*2*
287	4	–	–	6	–	–	89	15	–	–	6	*bone comb*	120
backfill	*4*	–	–	–	–	–	*17*	–	–	*Fe staple*	–	–	*23*
289	–	1	–	–	–	–	2	–	–	–	–	–	3
291	–	–	–	–	–	–	30	–	–	–	3	–	33
294	–	1	–	–	36	–	26	–	–	–	3	–	66
297	1	–	–	–	–	–	54	–	–	–	–	–	55

Grave	*Grip*	*Grip plate*	*Breast plate*	*Other plate*	*Cu stud*	*Fe stud*	*Fe nail*	*Cu tack*	*Fe tack*	*Misc. struct.*	*Cu pin*	*Other misc.*	*Total*
300	7	–	1	–	–	–	67	–	–	Fe fitting	5	–	81
303	–	–	–	–	–	–	5	–	–	–	–	–	5
306/308	2	–	–	–	–	–	42	–	–	–	–	–	44
306/314	6	–	–	–	–	–	27	–	–	–	5	–	38
backfill	*1*	–	–	–	–	–	*3*	–	–	–	–	–	*4*
309	–	1	–	–	196	–	55	–	–	–	–	*Cu strapend*	252
backfill	–	*1*	–	–	–	–	–	–	–	*Fe hook, 2 Fe screws*	–		*5*
312		–	–	–	–	–	6	–	–	–	–	–	6
315	1	–	–	–	–	–	48	17	–	–	1	textile	68
318	–	–	–	–	–	–	31	–	–	Cu ?fitting	8	–	40
322	–	–	–	–	–	–	15	–	–	–	–	–	15
325	1	–	–	–	–	–	33	–	–	–	–	–	34
328	–	–	–	–	–	–	17	–	–	–	1	–	18
331	6	–	–	–	–	167	119	1	–	–	–	–	293
335	3	–	–	–	–	–	2	–	–	–	3	–	8
backfill	–	–	–	–	–	–	*10*	–	–	–	–	–	*10*
340	–	–	–	1	–	–	22	–	–	–	–	–	23
343	–	–	–	–	–	–	1	–	–	–	–	–	1
346	5	–	–	–	–	–	44	–	–	–	–	–	49
349	–	–	–	1	–	–	13	–	–	–	3	–	17
352	8	–	1	1	–	–	122	–	–	–	3	–	135
358	1	–	–	–	–	–	21	10	–	–	–	–	32
362	–	–	–	–	–	–	–	–	–	–	1	–	1
368	5	–	–	–	–	–	7	4	–	Fe fitting	–	–	17
373	1	–	–	11	–	–	49	1	6	–	6	–	74
376	–	1	–	–	–	–	43	–	–	–	1	–	45
379	*3*	–	1	–	–	–	28	–	–	–	3	Cu ?eyelet	33
backfill	–	–	–	–	–	–	*1*	–	–	–	–	–	*4*
382	–	1	–	–	–	–	12	–	–	–	2	–	15
388	–	–	–	–	–	–	28	–	–	–	–	–	28
391	–	–	–	–	–	–	42	1	–	–	4	–	47
394	–	2	–	–	2	–	8	–	–	–	–	–	12
397	5	–	–	–	–	–	45	–	–	–	3	glass bead	54
401	–	–	–	–	–	–	–	–	–	–	–	Cu wire ring	1
404	*4*	*1*	–	–	–	*29*	65	1	–	–	2	–	68
backfill	–	–	–	–	–	–	*28*	–	–	–	*8*	–	*70*

Grave	Grip	Grip plate	Breast plate	Other plate	Cu stud	Fe stud	Fe nail	Cu tack	Fe tack	Misc. struct.	Cu pin	Other misc.	Total
407	-	-	-	-	-	-	2	-	-	-	-	-	2
411	-	-	-	-	-	-	7	1	-	-	-	-	8
414	2	1	-	-	-	-	1	1	-	-	-	-	5
417	6	-	-	-	1	-	39	2	-	-	3	-	51
420	-	1	-	-	-	-	39	-	-	-	-	-	40
423	-	-	-	-	-	-	14	-	-	-	1	-	15
426	-	2	-	-	-	-	-	-	-	-	-	-	2
429	-	-	-	-	-	-	1	-	-	-	-	-	1
non-grave	14	2	-	-	4	-	-	-	-	-	4	-	24
TOTAL	205	33	4	25	1510	439	3366	101	10	14	138	14	5859

horseshoe fragment from grave 176, are not included here.

A total of 5835 objects was recovered from 82 graves including 4078 of iron, 1749 copper alloy, 1 silver, 2 worked bone, 1 glass, 1 slate, and 3 textile. A further 24 objects (16 iron, 8 copper alloy) from non-funerary contexts were identified as also representing grave finds (iron nails and other less diagnostic objects have been excluded from this group). Table 8 summarises the range and quantity of objects from each grave, including objects redeposited in grave backfills, and the total from non-funerary contexts.

All objects (or groups of objects/fragments) were assigned a unique Object Number (ON) and all metal objects (with the exception of nails and other non-diagnostic objects from non-grave contexts) were X-radiographed. Surviving dimensions were recorded where appropriate, together with brief descriptions; a full catalogue of objects is held in the site archive, which is summarised in the Grave Catalogue (Appendix I).

The majority of the iron objects are heavily corroded; the tinned breast plates found in some graves are particularly poorly preserved. Identification and the recognition of decoration, lettering, and other diagnostic features have, therefore, derived largely from the X-radiographs. A small number of objects from graves was selected for conservation treatment (cleaning and stabilisation) in order to confirm identifications, and to reveal aspects such as decoration and/or lettering.

Coffin furniture

The following categories of grave furniture were defined:

Grips. Handles placed at regular intervals around the coffin, the number per coffin depending on its size. The grips were likely to have been aesthetic rather than functional, adult-sized coffins being too heavy to lift by the handles alone. All the examples from West Butts Street are of iron; some may originally have been plated but this does not survive.

Grip plates. Situated behind the grips. The grips were attached to the plates by clips or stops, and the whole assembly fixed to the coffin, usually by a split pin. As for the grips, all examples here are of iron, with no surviving evidence for plating.

Breast plates. Situated on the coffin lid below the break (widest point of the coffin generally at or just below shoulder level), these contain biographical details; catalogues of the time also referred to these as 'depositum plates'. These were made of tin-dipped iron and became common from the 1730s after the introduction of mechanised manufacture.

Other plates. Other, smaller iron plates, again presumably tin-dipped, were identified in some instances, although their precise form and function could not be ascertained due to their extremely fragmentary state. They could have represented further decoration on the lid or sides of the coffin; in catalogues of the time these were described as 'motifs', 'escutcheons', or 'drops'.

Upholstery pins. Round-headed studs used to secure fabric coverings to the outside of the coffin and to spell out biographical details on coffin lids. The examples seen here fall into two size ranges and are of both copper alloy and iron.

Structural items. Nails, bolts, and panel pins used in the construction of the coffin itself. These frequently have mineral-preserved wood from the coffin adhering, although the wooden shell itself rarely survived apart from odd fragments.

Grips and grip plates

A total of 238 grips and grip plates was recovered, of which 222 came from 60 graves, the remaining 16 being found redeposited in non-grave contexts. All examples appear to be ferrous and in poor condition, identification being confirmed only by X-radiograph. Thirty-three grips are still attached to complete or almost complete grip plates and, in these instances, generally retain the split pins which would have attached the whole assembly to the coffin (see Stock 1998b, fig. 11.15 for an illustration of split pin fixing). On detached grips, the clips or stops from their attachment to the grip plate frequently survive, although corrosion prevents the identification of hinging or securing techniques.

The range of grips is limited. Six different types were identified, all undecorated (Fig. 28); these are quantified in Table 9, the grip types by grave being

Table 9. Grip type totals

Grip type	*Description*	*Total*
A	angular, horizontal shaft with angular bottom edge (Fig. 28.1)	10
B	curved, thickened terminals & shaft (Fig. 28.2)	16
C	curved, shaft of even thickness (Fig. 28.3)	151
D	angular, horizontal shaft with slight medial thickening (Fig. 28.4)	34
E	small, curved, inturned terminals (Fig. 28.5)	2
F	hybrid type between A & C, curved with angular bottom edge (Fig. 28.6)	23
Unclass.	frags too small to assign to type	2
	Total	238

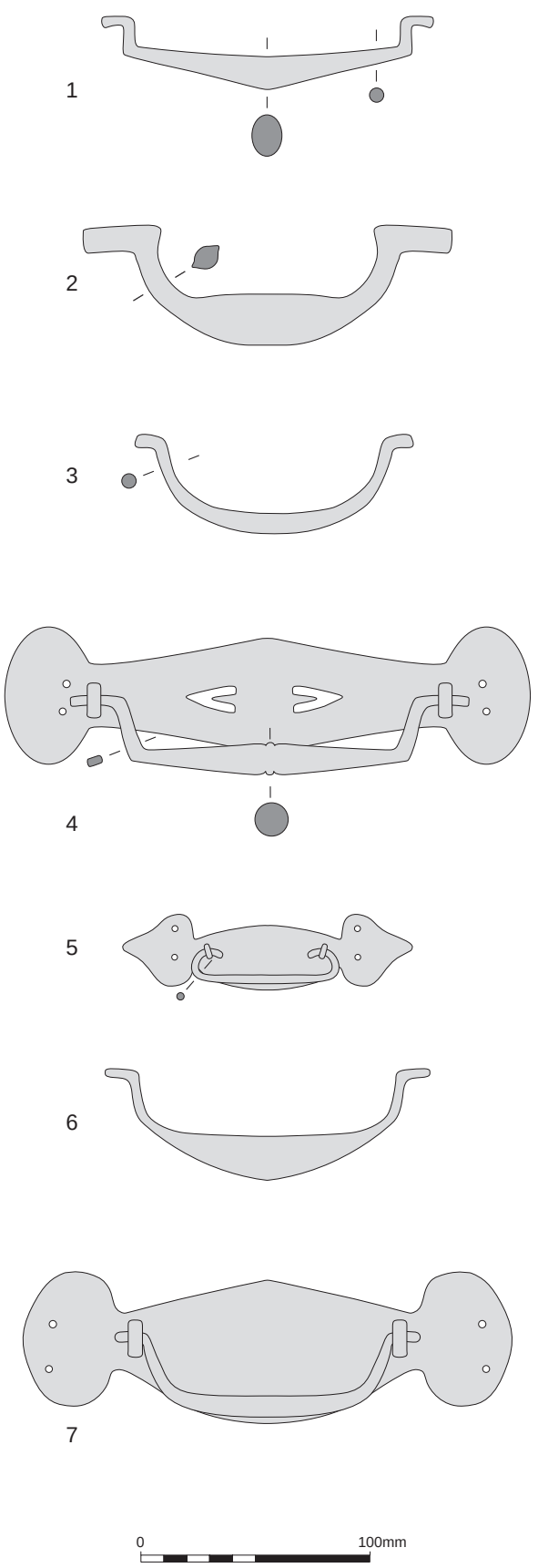


Figure 28 Grips and grip plates: type range

Table 10. Grip types by grave

Grave	*A*	*B*	*C*	*D*	*E*	*F*	*Unclass.*
121	2	–	–	–	–	–	–
129	–	8	–	–	–	–	–
146	–	–	7	–	–	–	–
backfill	–	–	*3*	–	–	–	–
149	–	–	2	–	–	–	–
152	–	–	2	–	–	–	–
167	–	–	2	–	–	–	–
173	–	–	6	–	–	–	–
176	–	–	8	–	–	–	–
backfill	–	–	*1*	–	–	–	–
179	–	–	2	–	–	–	–
backfill	–	–	–	*2*	–	–	–
182	–	–	2	–	–	–	–
185	–	–	1	–	–	–	–
190	–	–	1	–	–	–	–
193	–	–	–	1	–	–	–
.96/198	–	–	2	–	–	–	–
.96/205	–	–	–	1	–	–	–
.96/207	–	–	–	1	–	–	–
199	–	–	4	–	–	–	–
208	–	–	–	–	–	2	–
213	1	–	–	–	–	–	–
backfill	–	–	–	*1*	–	–	–
219	–	–	1	–	–	1	–
222	–	–	6	–	–		–
225	–	–	–	2	–	1	–
backfill	–	–	–	–	–	*1*	–
228	–	–	6	–	–	–	–
234	–	–	6	–	–	–	–
237	–	–	3	1	–	–	–
backfill	–	–	–	*1*	–	–	–
244	–	–	–	1	–	1	–
backfill	–	–	*2*	*2*	–	*5*	*1*
247	–	–	6	–	–	–	–
250	–	–	2	–	–	–	–
253	–	–	4	–	–	–	–
258	–	–	–	–	2	–	–
261	–	–	–	–	–	5	–
269	–	–	2	–	–	–	–
275	–	–	1	–	–	–	–
278	–	–	4	–	–	–	–
283	–	–	–	*3*	–	–	–
284	–	–	–	1	–	–	–
287	–	–	4	–	–	–	–
backfill	–	–	*4*	–	–	–	–
289	–	–	–	1	–	–	–
294	–	–	–	1	–	–	–
297	–	–	1	–	–	–	–
300	–	–	7	–	–	–	–
306/308	–	–	2	–	–	–	–
306/314	–	–	6	–	–	–	–
backfill	–	–	*1*	–	–	–	–
309	–	–	–	1	–	–	–
backfill	–	–	–	*1*	–	–	–
315	–	1	–	–	–	–	–
325	–	–	–	–	–	1	–
331	6	–	–	–	–	–	–
335	–	–	4	–	–	–	–
346	–	–	5	–	–	–	–
352	–	7	1	–	–	–	–
358	–	–	1	–	–	–	–
368	–	–	–	–	–	5	–
373	–	–	1	–	–	–	–
376	–	–	–	1	–	–	–
379	–	–	*3*	–	–	–	–
backfill	–	–		–	–	–	–
384	–	–	–	1	–	–	–
394	–	–	–	2	–	–	–
397	–	–	5	–	–	–	–
406	–	–	*4*	*1*	–	–	–
backfill	–	–			–	–	–
414	–	–	2	1	–	–	–
417	–	–	5	–	–	–	1
420	–	–	–	1	–	–	–
426	–	–	–	2	–	–	–
non-grave	1	–	10	4	–	1	–
TOTAL	10	16	151	34	2	23	2

shown in Table 10 and the Grave Catalogue. By far the most common type is the evenly curved grip (Type C), occurring in 37 graves, while the small Type E grips are confined to two examples, both from the same grave (258). Types A and B each occurred in three graves only (Type A in graves 121, 213, and 331; Type B in 129, 315, and 352).

Only one grip type fits parallels within the assemblage from Spitalfields, London – Type C, comparable to Spitalfields type 01, dated 1747–1847 (Reeve and Adams 1993, 144, microfiche 3). Interestingly, the same grip type was the only one paralleled within the assemblage from the 18th/early 19th century Quaker burial ground at Bathford, Somerset (Stock 1998b, 149).

Grip sizes vary quite widely (presumably governed largely by the size of the coffin). The smallest is a Type C from grave 297 (45 mm; infant 9–18 months); the largest are examples of Types B and D from graves 352 (adult female) and 237 (adult male) respectively (both 170 mm). The Type B grips are consistently larger than other types – all 16 are between 155 mm and 170 mm in length. Of the measurable grips, however, almost three-quarters fall within the range of 120–140 mm (129 out of 191).

Grip plates are far more consistent in form and size. Almost all are of the same form, with rounded ends (each carrying two rivet holes) framing a lozenge-shaped body. Most examples are simply decorated with a pair of opposed 'V' or heart shapes (Fig. 28.4). The only other evidence of grip plate decoration comes from grave 173, where the plate fragments show very

faint traces (just visible on X-radiograph) of stamped or incised decoration, possibly floral, although the overall design could not be ascertained.

The only examples of other plate forms were associated with the two small Type E grips from grave 258, which have pointed ends and oval bodies, apparently undecorated. It should be pointed out, however, that the majority of surviving grip plates (at least, those for which form could be ascertained) were associated with grips of Type D (30 plates), with just two associated with Type E grips and two with Type C. Grip plate form may, therefore, have varied more than is apparent here. Grip plate length (from 26 measurable examples) ranges from 120 mm to 230 mm, of which 15 fall within the range 200–220 mm.

The normal number of grips per grave would have been eight for an adult coffin (three each side and one at each end), with fewer for smaller coffins. Numbers at West Butts Street (in instances where total numbers per grave are known) range from 2–8 grips per grave (Tables 8 and 10). Only three coffins, however, carried the full complement of eight (graves 129, 176, and 352), with two others containing seven, presumably from an original total of eight (graves 146 and 300). The most common arrangement appears to have been two grips each side and one each at the head and foot (nine graves, with a similar arrangement suspected in a further nine instances). Infant coffins generally carried just one grip at each end.

Generally the grips from each grave were of the same type, as would be expected, and of fairly consistent size – where grips of different types were found in the same grave this can often be seen to reflect the presence of redeposited objects in grave backfills (Table 10). In at least three cases, however, possibly four, coffins certainly appear to have carried grips of two different types (graves 225, 237 and 414; in grave 244 one of the two grips, both found by the feet, may not have been *in situ*).

Breast plates

Fragments of breast plates were recovered from four graves (146, 300, 352, and 379; Figs 18, 21, and 25). These would have been tin-dipped with stamped or painted lettering. In most cases, however, the poor condition of the fragments prevented the survival of any biographical details, and in only one instance could any lettering be deciphered. A fragmented breast plate belonging to an infant (osteological age 3.5–4.5 yr) was recovered from grave 379. While the grave was under excavation, black painted lettering on the tin was observed as reading '..RNAR.. / Died 10 July 1813[?8] / aged 5 years' (Fig. 25). Although the breast plate was carefully block-lifted, it could not subsequently be consolidated or reconstructed, and conservation treatment failed to reveal any further detail. Most breast plates at this period were rectangular, although other shapes (shield, lozenge, etc) were used. The example from grave 352 appears to have been lozenge-shaped (following heraldic dictates, this should belong to a young girl or spinster; skeleton 354 is that of an adult female *c.* 55–65 yr), and that from grave 300 possibly shield-shaped (in the same tradition, belonging to boy or young man; here an adult *c.* 40–60 yr, probably female), but the other plates, including that from grave 379, were too fragmentary for shape to be determined. In any case, the following of heraldic conventions seems to have waned during the 18th century, and many manufacturers would have been unfamiliar with them (Litten 1991, 109). At St Martin's, Birmingham, the shield-shaped plate was the most common form for men, women, and children alike from the early 19th century onwards (Brickley and Buteux 2006, 158–9).

Other coffin lid decoration

Further fragments of iron plates, some tinned, came from six graves (146, 190, 213, 340, 349, and 352). The large breast plate in grave 146 (see above) appears to have been accompanied by a number of other plates of uncertain shape and size, some of which, from their position in the grave, may have been side plates around the edge of the coffin. Fragments from the five other graves likewise could not be positively identified.

In two other graves (287 and 373), biographical details had been applied to the coffin lid in the form of sheet iron letters attached with copper alloy panel pins (Figs 17, 19, and 25). Neither is more than partially legible, due to the settling of the letters over the skeleton as the coffin decayed. In 287 (osteological identification: adult male *c.* 50–65 yr) the letters spelled 'TB [the B reversed] / GE / 8' and in 373 (osteological identification: adult female >50 yr) 'MB / ED / .677 / 17.1'. In both cases the second line may have spelled 'AGED', to give age at death. The date(s) is indecipherable in 287 but 373 appears to give both date of birth (?1677) and date of death (?17.1). If the latter has been correctly interpreted, this individual could have been one of the 15 original signatories of the West Butts Street church in 1735 (see frontispiece) – possibly, given the probable age, Mary Belben.

Upholstery pins

These round-headed studs were used to add decorative detail after the fabric covering had been nailed or stuck to the outside of the coffin, and they were also used to spell out biographical details on the lid. A minimum of 1945 upholstery pins was found in 22 graves; their precise function could not be determined in every case, but in some graves they survived relatively *in situ*. Two different sizes were present with heads of 7 mm and 11–13 mm diameter; both sizes occur in copper alloy and iron (ratio *c.* 3:1). Some were originally gilded. Relative size seems to reflect use as either decorative

studwork or for biographical details. Examples of large studs came from graves 193, 261, and 331, in each case being used around the edge of the coffin and, in 193, across the lid at the break, and in lozenge motifs above the break (Figs 15, 17, 18, and 22). Most graves, however, lacked this kind of decorative detail.

As well as the two graves with iron lettering on the coffin lid, partially legible biographical details survived spelled out in copper alloy studs on the coffins from eight graves (182, 196 (burials 198, 205, 207), 213, 225, 261, 281, 294, and 309; Figs 15–18 and 24–5). As with the sheet iron lettering, the stud lettering has been distorted by later settling and disturbance of the grave contents, and none of the examples is completely decipherable. Normally two lines of studs were used to record the occupant's identity and date of death, with the initials of the deceased appearing in the first line and the year of death in the second, although other examples have been seen where the date of death includes the day and month (J. Litten, pers. comm.). At least four of the West Butts coffins, however, had more than two lines – four with three lines and one with four. In these instances, apart from name and year of death, other lines might give age at death, and/or year of birth. In only one case (grave 261; osteological age: *c.* 45–50 yr, male) could the year of death be completely deciphered (1772), for an individual of 54 years (see below). The details of all ten coffins are listed below (osteological demographic data given in parentheses):

- Grave 182 (male *c.* 40–60 y.): at least two lines, of which second reads '..9 6..'
- Grave 196 (burial 198; male *c.* 35–55 y.): three, possibly four lines, of which the first two read 'TH / GD' (Figs 16 and 24)
- Grave 196 (burial 205; infant *c.* 3.5 yr): three letters or numerals, disturbed, perhaps '9' (or '6'), 'S' (or '2') and 'I' (or '1') (Fig. 15)
- Grave 196 (burial 207; juvenile *c.* 5–6 yr): at least two lines, reading 'E- / AG' (Fig. 15)
- Grave 213 (male >45 yr): three lines, of which second and third read '1767 / 1.97' (Fig. 23)
- Grave 225 (female *c.* 35–50 yr): four lines, of which the first and second read 'LH / GD' (Figs 16 and 24).
- Grave 261 (male *c.* 45–50 yr): three lines, reading 'D / 54 Y / D 1772' (Figs 17 and 24)
- Grave 281 (redeposited): at least two lines, of which only letter 'A' in first line is legible (grave is cut by another) (Fig. 16)
- Grave 294 (infant *c.* 1–2 yr): single line, reading 'MOH' (Figs 17 and 24)
- Grave 309 (female *c.* 18 yr): three lines, reading 'TH / AG 18 (?Y) / 17..' (Figs 18 and 24)

None of these graves can be linked to known members of the West Butts Street congregation but, as has been pointed out elsewhere, no names are known beyond the 15 signatories of the original covenant at the church's foundation in 1735 (frontispiece).

Structural fittings

In this category have been classified iron nails (3366 from graves), iron and copper alloy tacks (111 from graves), and other miscellaneous fittings. Coffin construction appears generally to conform to the example illustrated for Spitalfields (Reeve and Adams 1993, 79), but with the use of nails rather than tacks (panel pins) to fix sides and ends to the base. There were many graves where the coffin nails survived *in situ*, arrangements varying from those with nails at regular intervals around the coffin to those where nails concentrated at head and foot (Figs 15–19).

The function of the copper alloy and iron panel pins is less clear. Certainly some were used to attach various plates (including the sheet iron lettering) to coffin lids. They occurred in 19 graves. Numbers per grave are not large with a maximum of 19 from grave 269 (16 copper alloy and three iron); otherwise, only four graves contained ten or more (173, 287, 315, and 358).

Other objects possibly used in coffin construction include an iron split pin from grave 190, almost certainly used to attach a grip plate; an iron U-staple from grave 287 (backfill); and an iron hook and two screws from grave 309 (backfill). Three small, perforated square plates (graves 222, 300, and 368) are of uncertain function, as are the other miscellaneous fragments included in Table 8.

Burial clothing and personal items

Very little textile survived from any of the graves (see below), and it has not been possible to reconstruct more than minimal details of coffin linings and other internal fittings, or burial clothing (see also pp 54–7). What evidence survives is mainly in the form of metal objects.

Pins

Pins were recovered from 40 graves, a total of 134, with a further four from non-grave contexts. All are of copper alloy wire. Two types have been identified, comprising examples with wound wire heads (25) and those with globular heads (26), although most of the pins comprise shaft fragments only. There appears to be no great chronological significance to the two types (Crummy 1998, 7–9). Both types, in this instance, are likely to have been used to fasten items of burial clothing or to secure internal fabric coffin linings. Position varied within graves, but pins in graves 121, 190, 208, 225, 234, 244, 258, 294, and 306 (skeleton 314) were on or near the skull, presumably relating to

clothing or fabric pinned around the head such as caps or bonnets, ot facecloths (see p. 56 and Chapter 2). Nearly all of these pins are of relatively short length (less than 25 mm), although two, both from non-grave contexts, are longer (46 mm and 50 mm respectively).

Items of dress

Two buckles were identified, a sub-square example with a strap-end attached from grave 309 and a rectangular buckle frame from grave 129. Both came from grave backfill and were not, therefore, definitely associated with the individual buried, but are more likely to represent redeposited finds.

A single, undecorated flat-headed button came from grave 173, and a small curved copper alloy wire fragment from grave 379, perhaps part of a loop or 'eyelet', which may have been associated with clothing (Crummy 1988, fig. 16, 1624). The lack of dress fittings is not surprising given that the individuals were probably buried in shrouds (backless garments with sleeves, crudely sewn or pinned together; see Chapter 4) rather than normal clothing, particularly prior to the repeal of the *Act for Burial in Wool* in 1814, although items of personal clothing were recorded, for example, from Spitalfields and from the Quaker burial ground at Kingston upon Thames (Janaway 1998, 29–31; Bashford and Pollard 1998, 159).

Personal items

A tiny translucent blue glass bead was recovered from a soil sample taken from grave 397. A fragment from a double-sided bone comb from grave 287 backfill is more likely to represent a redeposited object.

Miscellaneous objects

Two other objects of interest came from grave backfills: a silver coin from grave 258 and a copper alloy token from grave 176. The silver coin is a half groat of Edward III, minted in 1351–2, while the token is an illegible merchant's token of a type common in the mid–late 17th century. Both are likely to have been redeposited from the made-up ground through which the graves were cut.

Discussion

Comparative material

Despite the wealth of documentary evidence for post-medieval burial practices, comprehensively synthesised by Litten (1991), the material culture of post-medieval cemeteries has not as yet been widely studied. The best known assemblage is probably that from Christ Church, Spitalfields, London, the analysis of which has provided a major comparative assemblage for the techniques of undertaking and funerary practice between 1729 and 1852 (Reeve and Adams 1993). Another large assemblage, late 18th–19th century in date, has recently been published from St Martin's churchyard, Birmingham, although in this instance analysis of grave furniture has concentrated on the relatively small number of vaults and brick-lined graves, ie, the 'middle class' burials rather than the more common, earth-cut, 'working class' burials (Brickley and Buteux 2006).

Smaller assemblages are known from St Augustine the Less, Bristol and Hinton St George, Somerset (Boore 1998, 82), and Holy Trinity Church, Coventry (Wessex Archaeology 1999). All these are Anglican sites; Nonconformist cemetery assemblages are even scarcer. Only interim details are as yet available for the Quaker burials in Kingston upon Thames, Surrey, which was in use from 1664 to 1814 (Bashford and Pollard 1998). A second Quaker burial ground at Bathford, Somerset (in use from 1703 to 1845), was recorded under watching brief conditions, but nevertheless produced some useful information on coffin furnishings (Stock 1998b). No other Baptist cemetery assemblages have, as yet, been published.

The interest in the assemblage from West Butts Street therefore lies in how it fits within the known range of funerary practices during the 18th and early 19th centuries, and specifically within the Nonconformist context. Would any observed contrasts with contemporaneous Anglican cemetery assemblages be due to religious tendencies (Non-conformists perhaps favouring a simplicity of style in coffin furniture and burial procedure), differing mode of burial (earth burial as opposed to burial in vaults or brick graves), or socio-economic considerations? In terms of religious tendencies, comparisons with other Nonconformist sites, albeit very limited, may be informative. Certainly Quaker burial procedures did not always conform to the prescribed doctrine (Stock 1998a; 1998b).

Socio-economic factors may have been a major influence. The excavated individuals buried at Spitalfields were mainly middle class and of Huguenot descent; and those from the vaults and brick-lined graves at St Martin's, Birmingham, were probably from a similar social stratum. Little is known of the West Butts Street congregation, but they were probably predominantly relatively prosperous tradespeople and artisans (see Chapter 4). Generally Dissenters were considered to be 'economically independent', and were more likely to be employed as 'merchants, tradesmen, or self-employed artisans' (Watts 1985). Baptists were 'probably the poorest of all the Dissenting denominations' (*ibid.*, 380), but such congregations had to pay their own minister and build and maintain their own church, and so needed to be reasonably prosperous in order to keep their church going (see Chapter 5).

Nevertheless, even prosperous individuals in Poole – a provincial town, geographically distant from the larger cities and centres of new 'funerary fashions' –

are unlikely to have had access to the same range of funerary furnishings as, for example, the inhabitants of the Spitalfields vaults. It must be remembered that the latter assemblage, comprising entirely intra-mural burials, is skewed in favour of the wealthier part of the congregation, as are the other Anglican sites mentioned above. The majority of the population in the 18th and 19th centuries would have been buried extra-murally in earth graves, as was seen at St Martin's, Birmingham.

The coffins and their furnishings

All of the coffins used at West Butts were of wood, traces of which survived in a few instances (see Chisham below); there are no lead coffins here. This is less likely to reflect a Dissenting preference for simplicity, in line with, for example, Quaker doctrine (Stock 1998a), but rather that lead coffins were generally only used in high status burials before 1813, when lead became compulsory for intra-mural burials (Cox 1996, 101). Lead coffins were recorded in the Quaker burial grounds at both Bathford and Kingston upon Thames, although in both cases they were scarce and may have been exceptional. It is certainly true that the coffins from West Butts Street show little sign of ornamentation. Twenty-two carried decorative upholstery pins (including a minimum of ten with some biographical details; see above), breast plates were recorded in four graves, with other possible decorative plates in two of these graves as well as four others, and sheet iron biographical lettering in two more, and both coffin grips and grip plates are almost exclusively plain. There are no examples here of the winged cherub motifs that were popular throughout the 18th and 19th centuries, and which were the most common grip and grip plate decoration at Spitalfields (Reeve and Adams 1993, 86, fig. 5.5), at St Martin's, Birmingham (Brickley and Buteux 2006, 156, fig. 113), and ubiquitous elsewhere across 'all levels of society' (Boore 1998, 73).

The grips and grip plates appear to be of local (Poole) manufacture, of a type in common use in the provinces, and with a lengthy post-medieval currency. These were regularly produced by local blacksmiths, and the grip plates had a common similarity with the latch fittings on cottage doors (J. Litten pers. comm.).

The technique of using upholstery pins to spell out biographical details was most common before 1730, at which point stamped iron coffin furniture was readily available in different designs and prices, and thereafter the use of upholstery pins was normally associated with paupers' contract funerals (J. Litten pers comm.). Given the known date range of the West Butts Street burial ground the use of these studs seems anomalous in this context, but there are other factors to consider. These burials are likely to have been serviced by local carpenters using old techniques, and/or perhaps the Baptist congregation could not afford the price of commercially produced coffin furniture which may not have been as easily accessible in provincial areas (or they chose not to spend their money in this way). Religious scruples against the use of 'flamboyant' grave furniture may also apply, although the use of tin-dipped iron breast plates in other graves seems to negate this.

Conclusions

As the first funerary assemblage from a Baptist cemetery to be studied in detail, the West Butts Street assemblage inevitably raises more questions than it answers. The coffin furnishings certainly seem to exemplify a burial ritual lacking in undue flamboyance, with a predominance of utilitarian burial containers, and ornamentation confined almost exclusively to the provision of basic biographical details on the coffin lid, in most cases using a technique which, by the standards of the day, was archaic. These coffins were almost certainly provided by local craftsmen, utilising a very limited range of metal fittings closely allied to common items of household furnishing. The individuals within were shrouded for burial, those garments simply tacked, or in some cases pinned together (see pp 54–7).

It cannot be stated with confidence, however, whether this simplicity is reflective of an adherence to Nonconformist burial procedures, such as were prescribed for the Quakers in their *Book of Discipline*, or if socio-economic factors were the major influencing factors, these burial trappings being representative of a particular social (rather than religious) class in a provincial town. Even in the contemporary Quaker burial grounds at Bathford and Kingston upon Thames it is evident that Quaker doctrine did not always strictly govern burial practice. Without more comparative material, from both further Baptist cemeteries and from contemporary Anglican burials of a similar social class and provincial location, it is impossible to determine one way or the other.

Coffin wood identification

by Catherine Chisham

Substantial wood fragments survived in only two graves due to poor preservation on the acid sandy substrate. However, small wood fragments, normally adhering to copper alloy upholstery studs or iron nails, were recovered from 14 graves. All were fully desiccated and highly mineralised but identifications were, nevertheless, attempted in order to discern the choice of material for the coffins and whether this

Table 11. Coffin wood identifications

Grave	*213*		*261*	*294*		*331*	*309*
	dated 1767		*dated 1772*				*dated 17(?9)*
Burial	*215*		*263*	*296*		*333*	*311*
	male >45 yr		*male c.45–50 yr*	*c. 1–2 yr*		*female c. 50–60 yr*	*female c. 18 yr*
Object No.	*4434 (TS639)*	*4429 (TS634)*	*4902*	*4917*	*4915*	*5289*	*5207*
Species							
Taxus baccata	–	–	–	–	–	–	1
Coniferous wood *cf. Taxus baccata*	–	–	–	1	1	–	–
Ulmus sp.	2	2	2	–	–	2	2 (1 curved)
Comments on sample	2 frags with Cua stud	2 frags with Cua studs	with Cua studs from 2nd line showing age	on Fe nails	on Fe nail	stud cluster, embedded in mineralised sediment	frags on Fe nails

varied between graves in association with the level of decoration and/or the age and sex of the buried individual.

Eight samples were selected from six graves for identification. Depending on the degree of mineralisation, either the fragments were fractured in three planes and examined under epi-illuminated light microscopy (according to Leney and Casteel 1975), or fine slices were taken along the same three planes (transverse section (TS), radial longitudinal section (RL) and tangential longitudinal section (TL)) and mounted in water on a glass microscope slide for examination under bi-focal transmitted light microscopy at magnifications of x50, x100 and x400 using a Kyowa ME-LUX2 microscope. Identification was undertaken according to the anatomical characteristics described by Schweingruber (1990), and Butterfield and Meylan (1980). Identification was to the highest taxonomic level possible, usually that of genus and nomenclature is according to Stace (1997). The results are shown in Table 11.

Grave 352 (female *c.* 55–65 yr) proved to have no wood of sufficient size to sample or identify (Fig. 21). The remaining seven samples all contained useable fragments and a minimum of two pieces was identified for each of the five graves represented.

Only elm (*Ulmus* sp.) and yew (*Taxus baccata*) were identified. Elm dominated, with all the coffins containing adults wholly or partly constructed from mature elm wood. Both elm and yew occurred in the same sample from grave 309. The fragments of both species were in association with the copper alloy stud-work forming the final number on the third line of biographical data (the year of death) in the coffin lid (Fig. 18). The evidence suggests that the main body of the coffin was constructed of one species (most likely elm) with decoration/insets in yew. Grave 294 contained coniferous wood, which was of such small size the full suite of diagnostic characters could not be seen, but which also compared favourably with yew (Fig. 17).

Elm was probably the preferred choice since its wood is easy to work and very durable even in damp conditions; it also has a beautiful grain. It is notable, however, that the coffin containing the infant (grave 294) differed, being constructed from coniferous wood, probably yew. Yew is an extremely hard wood, difficult to work but prized for its decorative qualities and was perhaps only feasible for use in this instance because of the small pieces required. Yew trees are also often associated with important pagan sites, Christian burial sites, and with death, which may have influenced its selection.

Comparable material is limited; relatively few coffin wood identifications have been carried out on material from cemeteries of this date. However, Reeve and Adams (1993) suggest that coffins, including those at Spitalfields, London, were of oak, elm, or conifer. They also note that some were not constructed from a single piece of wood but offcuts tacked together with panel pins, which might account for use of different woods in one coffin as noted at West Butts. Elm formed the most commonly identified species used in coffin construction in those samples examined from both earth-cut graves and vaults at the late 18th–19th century cemetery at St Martin's, Birmingham, with lesser numbers of oak, pine, hazel, and alder (Gale 2006). It was observed that up to three different species of wood may be used in the construction of one coffin, some possibly being used in decorative finishes (*ibid.*). The majority of the coffins from the 19th century pauper graves at Cross Bones, Southwark appear to have been made of deal (soft woods including pine, spruce, and larch), which would have

Table 12. Hair samples analysed

Burial	*Grave*	*Age/sex*	*Description*	*Mx. fibre length*
178	176	female *c.* 19–23 yr	human hair	27 mm
178*			human hair	25 mm
245D	244	male *c.* 45–60 yr	hair	8 mm
317 (ON4990)	315	female *c.* 40–55 yr	hair	20 mm
403	401	*c.* 4–5 yr	hair on bone	10 mm
406	404	??female *c.* 30–40 yr	frontal bone with hair & wood	5 mm

been cheaper than the hardwood coffins (Brickley and Miles 1999, 26–7).

The hair

by Andrew S. Wilson

Six samples of human hair, recovered from on or around the skulls of five individuals, generally in association with copper alloy shroud pins, were analysed. Both scanning electron microscopy (SEM) examination and isotopic palaeodietary analysis were undertaken, the former with the aim of ascertaining any pre-burial treatment of the hair, such as cutting. Table 12 presents a list of the samples analysed.

Scanning Electron Microscope analysis

The samples were mounted, gold-coated and examined in high vacuum mode using an FEI Quanta 400 scanning electron microscope at the University of Bradford Central Analytical Facility to assess whether evidence of cut ends could be determined.

The results, together with the short and embrittled nature of the fibres, suggest that their shortened length – a consistent characteristic noted in excavation – is a taphonomic artefact. Despite the varied condition of the samples (that from 178 being the best preserved and that from 406 the least well preserved), all showed evidence of microbial degradation characterised by holes known as 'fungal tunnels' (DeGaetano *et al.* 1992). These tunnels result in localised weakening and eventual fragmentation of the hair shaft.

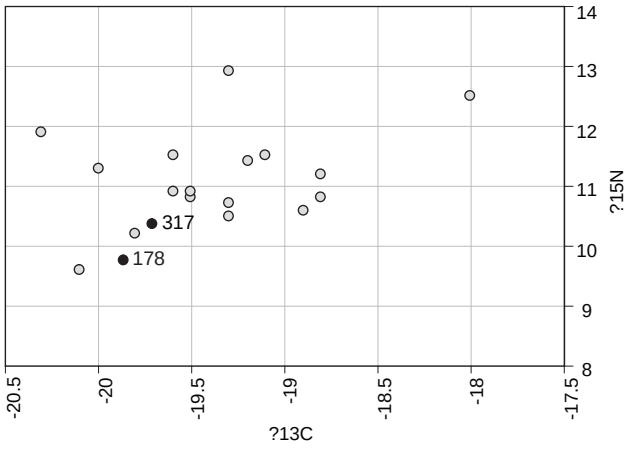


Figure 29 Carbon and nitrogen isotope data for West Butts samples (numbered) plotted in relation to published data from Christ Church, Spitalfields

Stable isotope analysis

Only the best preserved samples, from burials 178 and 317, were considered suitable for bulk isotopic measurement. Serial isotopic measurements that might have identified seasonal differences in dietary intake and potentially the time of year that an individual died were ruled out because of the shortened fibre lengths (White 1993). Samples were soaked overnight in solvent (methanol:chloroform, v/v 2:1 solution) and sonicated (x3) to remove adherent debris. The fibres were rinsed (x3) in de-ionised water, frozen, and freeze-dried. Fibres were then weighed into tin foil and analysed in duplicate within the Department of Archaeological Sciences, University of Bradford using a Thermo Finnigan Delta Plus XL continuous flow mass spectrometer equipped with Flash EA 1112 elemental analyser for carbon and nitrogen isotope measurements.

The results have been plotted (Fig. 29) against published values from hair of individuals from the 18th–19th century population at Christ Church, Spitalfields (O'Connell and Hedges 1999). Despite the fact that it has been possible to analyse material from only two individuals from Poole and that the hair samples represent only a few months hair growth in each case, the low nitrogen values compared with the Spitalfields individuals suggests a lower dietary intake of protein-rich foods. The Spitalfields samples were all from named individuals recovered from vaults, most of whom are likely to have been of a higher social status than the West Butts individuals with more frequent access to greater quantities of meat protein (see Chapter 1).

Textiles

There were very few instances of surviving textiles from the cemetery. Possible samples were recovered from only four graves (244, 261, 269, and 315). The very small scraps of fabric were mostly found in direct association with copper alloy shroud pins, generally from the area of the skull.

An assessment of the material was undertaken by R.C. Janaway of Bradford University. The samples were all found to be of a similar nature, comprising Z spun yarns used to form a plain cloth. Identifiable fibres from grave 244 (adult female >50 yr) comprised silk and some cotton. Heavily degraded wood fibres were identified from graves 261 (adult male *c.* 45–50 yr) and 269 (infant *c.* 3.5–4.5 yr). Discussion of the wider evidence for shrouding/burial clothes may be found in Chapter 4 (pp. 54–7).

CHAPTER 4
THE PEOPLE

Analysis was undertaken on human bone from 124 contexts of 17th–early 18th century date. The majority of the material derived from the *in situ* remains of burials (83 contexts). Other contexts contained redeposited bone derived from one or more partly *in situ* burial (minimum 26 contexts) and/or one or more wholly disturbed burial (15 contexts). A minimum of 100 individuals was identified.

Although the names of the individuals who formed the initial core of the congregation in 1735 are known (frontispiece), there are no burial records for the cemetery and no named individuals (see Chapter 5) and, as discussed in the previous chapter, biographical data were partially legible in only a few cases. There were four burials where the age at death of the individual was identifiable and eight where some legible initials survived (Fig. 25). The latter provided a possible link with one of the named individuals from the congregation's inception, the letters 'M B' from the coffin in grave 373 providing a (highly) tentative link with Mary Belben.

OSTEOLOGICAL METHODS

The degree of *post mortem* erosion/abrasion was recorded using the author's 0–5 system of grading (McKinley 2004, fig. 6). Redeposited bone was checked against remains from partial *in situ* burials and other redeposited bone from different contexts for joins or matches (Appendix II). The minimum number of individuals (MNI) was calculated according with McKinley (2004).

Age was assessed from the stage of skeletal and tooth development (Beek 1983; Scheuer and Black 2000), and the patterns and degree of age-related changes to the bone and teeth (Miles 1962; Buikstra and Ubelaker 1994, 21–32; O'Connell 2004; Brickley 2004a). Sex was ascertained from the sexually dimorphic traits of the skeleton (Bass 1987; Buikstra and Ubelaker 1994, 16–21; Brickley 2004b). Three levels of confidence were employed in the assessment of the sex of an individual; unquestioned, probable (denoted '?' in Appendix II) and most likely (denoted '??' in Appendix II).

A standard suite of 52 measurements was taken where possible (Brothwell 1972, 79–81, 85; Brothwell and Zakrzewski 2004, tables 1–2) and various indices calculated according with Trotter and Gleser (1952; 1958: stature estimation), Brothwell (1972, 88: cranial index); and Bass (1987). A standard selection of 25 cranial and 27 post-cranial non-metric traits was recorded where possible (Berry and Berry 1967; Finnegan 1978; Brothwell and Zakrzewski 2004, tables 3–4).

Pathological lesions were described and diagnosis suggested where appropriate. Specific methods for scoring various conditions are presented in the appropriate section below.

RESULTS

A summary of the results is presented by context in Appendix II. Details are held in the archive.

Disturbance and bone condition

Disturbance

The graves were all cut through a dark grey, sandy silt with frequent inclusions of post-medieval occupational debris (101), overlying a similar, but paler, interface layer (102) which sealed the natural alluvial sand forming the spur of land on which the cemetery lay (see Chapter 2). Some of the deeper grave cuts were only evident after the removal of a *c.* 0.40 m deep spit of layer 101, demonstrating that at least the upper levels of this layer had been reworked during the lifetime of the cemetery. Layer 101 lay below a *c.* 0.40 m depth of modern made-ground (100), itself sealed below the concrete of the former car park. Following the demolition of the chapel and cessation of burial within the cemetery the area incorporating the burial ground lay empty for some time, being used as a storage yard with any buildings in the area apparently respecting the graves (Chapter 5; Figs 10–12). Consequently there had been no apparent disturbance to the burials as a result of later activity. A row of terraced cottages was constructed on the southern margins of the cemetery in the first decade of the 20th century (Fig. 20), the foundations of which would have substantially disturbed any burials which lay in this area

though it is most unlikely that the graves extended this far to the south (see Chapters 2 and 5).

The graves lay in fairly orderly rows and, although there was relatively frequent intercutting between the excavated extant graves, the impact on the skeletal remains themselves was more limited (see Chapter 2). Some level of disturbance to the remains of the burial had occurred in a minimum of 18 of the graves cut by later interments (Fig. 13). Disturbance varied from the removal of a single skeletal element, eg, the skull from grave 358, to the loss of all except a few elements, eg, parts of the left upper limb in grave 322; in one case, grave 281, no bone remained *in situ*. In many cases some, occasionally most, of the bone disturbed from these graves was found redeposited within the fill of the later grave or a near neighbour, and could be linked back to its original burial context. For example, only *c.* 5% of burial 324 (grave 322) remained *in situ*, a further *c.* 60% of the skeleton being recovered as 288A redeposited in the fill of the overlying grave 287.

Four graves (126, 146, 185, and 331) had small, square or rectangular pits cut through their bases for the redeposition of bone obviously disturbed during their cutting (Fig. 27). In two cases (126 and 331) it appears that the whole remains of a burial were disturbed, the second grave presumably following on the line of the first, but not all the bone from the disturbed burial was subsequently reburied in the charnel pit/pits.

The series of three pits (143/159/162) at the base of grave 126 contained *c.* 45% of the skeletal remains of an infant (145/161/164; Fig. 15). Pit 365 at the base of grave 331 contained *c.* 50% of the skeleton of an adult male (367a) and *c.* 18% of an infant (367b). The left leg of skeleton 195 (an adult female) had been disturbed by the cutting of grave 185 and the remains redeposited in pit (211) cut through the base of the later grave (Fig. 15). Similarly, the skull (minus the mandible) from burial 360 was redeposited in a pit (371) cut in the base of grave 146. Although no cut was recognised in excavation, the skull (243) from burial 218, redeposited at the distal/foot (north-east) end of grave 213, may have been placed in a separate small pit, traces of which were masked in this series of four overlaid burials.

Of similar form but cut external to the grave, a pit (338) at the distal (north-east) end of grave 339 held the right innominate and a metatarsal from skeleton 337, the only bones to be disturbed during the insertion of the later grave 300 (Fig. 18). A small pit (355) cut into the upper levels of graves 349 and 382 in the western part of the cemetery held *c.* 8% of the remains of an adult ?female, which could not be matched with any other individual within the assemblage.

Redeposited remains recovered from 13 contexts (mostly graves) could not be matched with the remains of any other individual within the cemetery (R* in Appendix II). The quantities of bone in these deposits ranged from a single fragment (122b) to over 60% of the skeletal remains of an individual (245D). Although in the latter case the remains may have originated from one of the two adjacent heavily disturbed graves 281 (no *in situ* remains) or 284 (legs only *in situ*), there clearly were other graves within the cemetery for which no physical evidence survived at the time of excavation. This may be further demonstrated by the distribution of the redeposited bone (Fig. 27), much of which originates from graves where there has clearly been intercutting, but there are other cases where a grave containing redeposited bone lies some small distance from its nearest neighbour, eg, grave 414 (0.53 m from nearest grave; 1.20 m from nearest grave with intercutting).

Grave 152, on the eastern margins of the cemetery, cut through the upper levels of ditch 155 which seems to be represented on a 17th century map of the area (Fig. 6). This was the first area of the site to be stripped and was subject to deeper machining than elsewhere (see Chapter 2); it is likely that the rest of the remains were accidentally machined away. Three other graves in this eastern area (167, 185, and 190) were also partly truncated during machine stripping of the site prior to excavation.

As may be expected within a cemetery of this relatively small size, where there had been no overcrowding and limited impact from intercutting between graves, relatively little bone appeared to have been redeposited within the cemetery soil (101). While some, particularly smaller bone fragments, are likely to have been overlooked in the machine-stripping, most of the redeposited bone within 101, from the level at which the grave cuts became evident, was recovered (Appendix II). Some of this bone could be conclusively (101a) or tentatively (101a and ON 4074) linked with the *in situ* remains of burials.

Percentage skeletal recovery from the *in situ* burials was generally very good with more than 90% skeletal recovery from the majority of graves (55%; Appendix II and Table 13) and 50% or more from 86% of graves. Most bone loss occurred as a consequence of disturbance, though as observed above, redeposited bone could often be re-united with its burial of origin, though this rarely if ever resulted in complete (or near complete) recovery.

Table 13. Approx. percentage skeletal recovery from *in situ* burials

% skeletal recovery	*<20%*	*20–50%*	*50–75%*	*75–90%*	*>90%*
No. (%) burials	4 (5%)	7 (8%)	17 (20%)	9 (11%)	47 (55%)

Table 14. Condition of bone: percentage of *in situ* burials and contexts with redeposited bone in various grades

	Grades 0, 0–1	*Grades 1, 1–3*	*Grades 4–5*	*Variable grades*
In situ burials	43%	15%	13%	28%
	45% of females	17% of females	9% of females	29% of females
	28% of males	11% of males	17% of males	44% of males
	57% of immature	9% of immature	19% of immature	14% of immature
Redeposited bone (% of context)	26%	43%	12%	19%

Physical damage to bone due to ancient disturbance was evident in redeposited bone from several contexts (including 191, 147, 214, 243, 245A–B, 245D), eg, spade marks seen in the tibia from 367a. Similar cuts and old breaks were also observed in bone from several of the disturbed *in situ* burials (280, 324, 425).

Bone condition

The bone from a large proportion (43%) of the *in situ* burials is in excellent condition with little or no surface erosion/abrasion or exfoliation. This includes the remains of individuals of both sexes and across the age ranges from foetal to older adult (Table 14). The majority of the bone from the redeposited contexts (43%) was scored at grades 1–3, showing from slight and patchy surface changes (grade 1) to some level of change across most of the bone surface (grade 3). The observed changes generally comprise surface erosion and in some cases exfoliation of the cortical surfaces. Trabecular bone, as is commonly observed, was particularly prone to loss in the more heavily affected cases.

There does appear to be some variability between the sexes in levels of preservation though there is no clear indication as to why this may be. A substantially higher proportion of the female skeletons are well preserved in comparison with the males (Table 14), whilst a greater proportion of the male skeletons show variable levels of preservation. It is also interesting to note, given the common claim that immature skeletons do not preserve as well as those of adults, that the greater proportion of immature remains were scored at grades 0–1 (Table 14).

The variable grades include those remains where one or more parts of the skeleton are less well or better preserved than others. This may include scoring most of the skeleton as grade 0 while one area – eg, upper limb – was scored at grade 3–4. In half the *in situ* female burials where variable grading can be observed the upper limb elements are recorded as being significantly more heavily eroded than the rest of the skeleton. In two other cases the trabecular bone was lost and there are single instances of skull, foot bones, or a variety of elements being noticeably less or, in one instance, better preserved than the rest of the skeleton. A similar disparity was observed in the male skeletons with variable preservation, the upper limb (specifically the forearm) less well preserved than everything else in 37% of cases, the skull in a similar proportion, with single instances involving the hands, and axial skeleton and right upper limb. Variability is less discrete in the immature burials.

A variety of intrinsic and extrinsic factors may affect bone preservation (Henderson 1987; Nielsen-Marsh *et al.* 2000). Given the underlying geology of the site – alluvial sand – and the free-draining sandy silt matrix of the cemetery soil, the high levels of bone preservation are perhaps slightly unexpected. The soil matrix did, however, contain a large quantity of domestic debris and appeared to comprise made-ground/garden soils, the organic components within which are like to have had an ameliorating effect on the soil acidity.

There was no preferential destruction of what may be assumed to be the more fragile bone within the assemblage, ie, that of immature individuals and gracile females (Table 14). Although the greatest proportion of redeposited bone was scored at grades 1–3, a higher proportion was scored in the lower grades than in the higher ones, suggesting that disturbance had a limited exacerbating effect on poor bone preservation. All except one of the *in situ* burials appeared to have been made coffined; 403 (infant: Fig. 30) scored at grade 0–1, showing no significant difference with the coffined burials.

Blue/green copper alloy staining to the bone illustrated that the deceased had been shrouded in a minimum of 52 of the *in situ* burials (see below) and copper alloy shroud pins were recovered from a further 12 graves where no staining was observed, indicating that a minimum of 77% of the burials had been shrouded. There is relatively little difference between the proportion of the shrouded females and males which were scored at grades 0–1 (48% and 32% respectively) and the overall figures (Table 14). A substantially lower proportion of the shrouded immature individuals were scored at grades 0–1 preservation (36%) than in the overall figures. The significance, if any, of the latter observation must take into consideration the possibility of the non-recovery

Figure 30 Remains of and apparently uncoffined burial of a 4–5 yr old infant in grave 401

of shroud pins from some graves (smaller numbers were employed in the shrouding of immature individuals; see below) and that staining to bone may not always have occurred.

The depth of the grave, its position within the cemetery, and its position within the stratigraphic sequence, all appear to be of no consequence with respect to the grade of bone preservation. Graves containing bone at both extremes of grading were distributed across the cemetery, may have been cut or cut other graves, and lay at the top or lower down in the sequence.

There is then, little indication as to why some bone was better preserved than others. There may have been differential treatment of the corpse prior to burial, variation in the passage of time between death and burial, or the time of year at which the death occurred (Henderson 1987). Unobservable variations in shrouding may explain the intra-skeletal variations in preservation (see below), or there may have been inclusion of other organic material (clothing or other textiles).

Fragmentation resulting from soil pressure and/or coffin collapse was not especially heavy. The majority of the assemblage (*c.* 48%) showed moderate fragmentation, requiring minor reconstruction of some elements from most skeletal areas; *c.* 34% needed little or no reconstruction; *c.* 17% was extensively fragmented requiring reconstruction in all skeletal areas, often of a considerable nature. Small bones, including the long bones of infants and juveniles, and the hand and foot bones in adults, generally suffered least. Skull vaults and ribs were most commonly fragmented, the former particularly heavily.

Cranial measurements could not be taken on 20 complete or near complete skulls (35.1%; 12 female, five male, and three infant) due to their being warped as a result of soil pressure.

Copper alloy staining: evidence for shrouds

Blue/green copper alloy staining from shroud-pins – some still attached to the bone – was recorded on the remains of 56 individuals (32 females, 16 males, and nine immature; *c.* 56% of the MNI identified), mostly from *in situ* burials (52 individuals; 31 females, 14 males, and 8 immature; *c.* 63% of *in situ* burials). Table 15 shows the number of individuals, frequency, and distribution of staining to bone; staining to cranial sites alone was observed in 14 individuals (five immature, seven females, and two males) and to post-cranial sites alone in 13 individuals (six females and seven males). Details of the distribution patterns for the three demographic groups are shown in Figures 31 and 32.

Copper alloy shroud pins were recovered from 12 graves where no staining to bone was observed (Grave Catalogue and Chapter 3; three females graves, five male, and four immature). Combining these figures with the graves containing stained bone, the percentage of apparently shrouded female and male corpses becomes more even at *c.* 81% each, but the percentage of shrouded immature individuals remains comparatively low, at 50%. As observed above, however, the latter figures particularly could be misleading as fewer pins were routinely employed in

Table 15. Distribution of staining to bone from shroud-pins

	Immature	*Adult female*	*Adult male*
Cranial sites	no.: 8 range: 1–4 average: 2	no.: 26 range: 1–4 average: 2	no.: 9 range: 1–3 average: 2
Post-cranial sites	no.: 4 range: 1–6 average: 3	no.: 25 range: 1–15 average: 4	no.: 14 range: 1–16 average: 6
% MNI with staining	32%	74%	61%

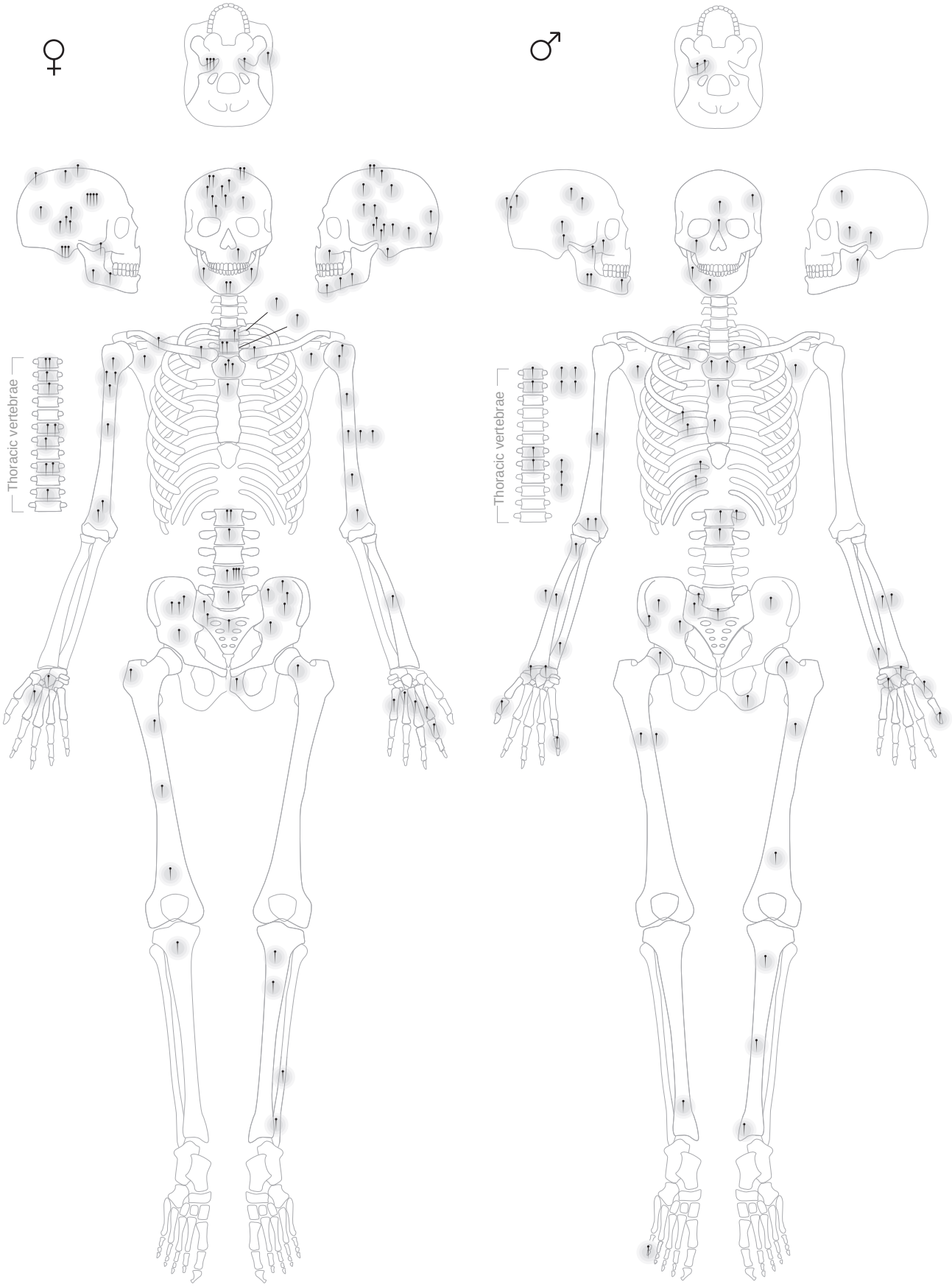


Figure 31 Distribution of copper alloy staining in adult female and male skeletal remains

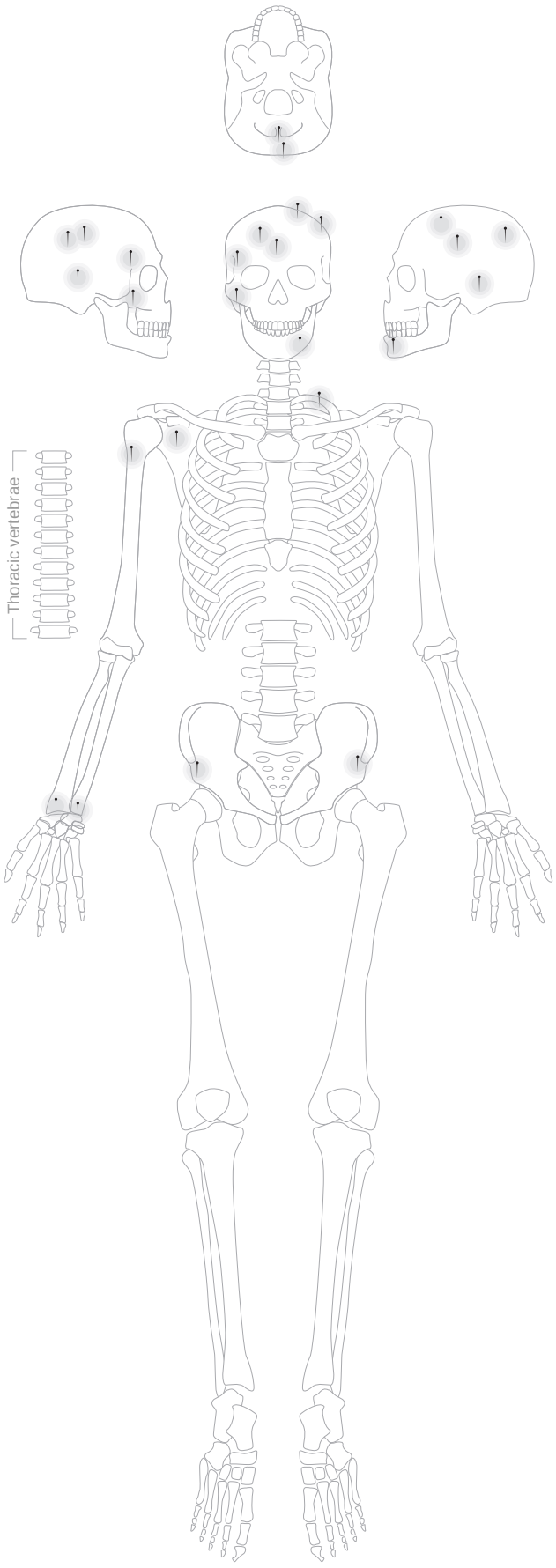


Figure 32 Distribution of copper alloy staining in immature skeletal remains (<18 yr)

shrouding immature individuals than adults (Table 15, Figs 31–2) and non-survival or recovery would have a greater impact on the overall impression of true numbers of pins present at the time of deposition. In additional, other forms of fastening – fabric ties or rough stitching – may have been employed to fasten shrouds (see below; Janaway 1993, 106).

The main differences in the distribution patterns of staining are seen between the adults and the immature individuals. In the latter group, most staining was observed to the cranium, with occasional involvement of the upper limb or axial skeleton (Fig. 32). In both males and females, the anterior portions of the vertebral bodies, sternum and pelvic bones were commonly affected (Fig. 31). Elements of the upper limb were also frequently stained in the adults, with a slight difference between the sexes involving more common inclusion of the upper arm (humerus) in the males, and the forearm in the females (mostly radius). Staining was also seem to the lower limb bones of several adults of both sexes.

The shroud formed by a winding-sheet knotted at top and bottom had declined in use in the later 17th century, being replaced by a loose, open-backed long-sleeved shift with drawstrings at wrist and neck, and an optional integral hood (Litten 1991, 76). There was a further shift in the nature of shrouds at the beginning of the 18th century to a more fitted garment with ruching or pleats running down the length (Litten 1991, 76–7; Janaway 1993, figs 6.12–13). These specially made burial clothes – which had included under-shirts and caps or bonnets since the mid-17th century (Litten 1991, 76) – were often of crude construction and fastened with ties or copper alloy shroud pins (Janaway 1993, 106, 110).

The distribution of the copper alloy staining to the bone from Poole suggests that caps or bonnets were pinned in position rather than having ties to pass under the chin. The staining to the facial bones, particularly the mandible and maxilla, seen in several individuals from all three demographic groups, suggests the presence of an integral hood or some other form of face cloth, pinned over the face of the deceased just before burial (Litten 1991, 76; Janaway 1993, 105). The staining seen along the anterior axial skeleton, and perhaps some to the leg bones, of several of the adult skeletons, suggests that the decorative strips down the front of the shroud may have been pinned in position rather than stitched. The relative rarity of staining in this area of the skeleton in the immature individual may be indicative that such decoration was the preserve of adults.

The majority of individuals were buried with their arms extended to their sides (Figs 15–19). Copper alloy staining to the wrist area observed in several individuals in all three demographic groups may have resulted from some sleeve cuffs being pinned rather

than tied. Extra lengths of cloth to cover the thighs were recovered from two of the Spitalfields burials (Janaway 1993, 106), and such additional cloths pinned in position may account for some of the staining observed on adult femora at West Butts.

Winding sheets or coffin sheets, the latter replacing the former by the late 18th century, may also have been employed in conjunction with, or instead of, full-length shrouds (Litten 1991, 79; Janaway 1993, 95–6, 107). A coffin sheet, tacked into the coffin, would be wrapped around the encoffined body and either pinned or sewn into place (Litten 1991, 79). Pinning of such an item may have caused some of the staining to the arm and leg bones.

The frequency and wide distribution of staining observed to the bone from West Butts is not replicated in contemporaneous cemeteries subject to archaeological investigation. There is no record of staining to bone from the early 19th century Baptist cemetery nor the similarly dated Friends Burial Ground, both at King's Lynn, Norfolk (Boston 2005; Mahoney 2005), or the mid-19th century Cross Bones Burial Ground, Southwark, London (Brickley and Miles 1999). Only slight staining to some crania was observed in the remains from the late 18th–early 19th century cemetery at St Martin's, Birmingham (M. Brickley, pers. comm.) and, although there were limited examples of shroud pins recovered from around the skull in some burials from the late 17th–early 19th century Quaker burial ground at Kingston upon Thames (Bashford and Pollard 1998), there is no note of further staining. There was extensive evidence for various types of burial clothes and winding and coffin sheets from the 18th–19th century vaults at Spitalfields, London, but there is limited evidence to suggest items were commonly pinned (Janaway 1993). Although copper alloy staining on bone was observed in analysis, no consistent record of frequency or distribution was made (Molleson and Cox 1993; M. Cox, pers. comm.). It appears, therefore, that the frequent use of copper alloy pins in the preparation of the corpse for burial at West Butts was a local or regional variation, perhaps reflecting the vagaries of the individual(s) preparing the body for burial since it seems unlikely to represent a 'cheap' option.

Although the co-ordination by a single contractor of the various necessary trades potentially involved in a funeral ('undertaking') had developed by the end of the 17th century, mainly in response to the demands of the more wealthy members of society, and undertaking had become an established profession in London by the middle of the 18th century, the provinces undoubtedly took longer to follow suit (Litten 1991, 17–18; Reeve and Adams 1993, 67–72; Cox 1996, 108–9). Carpenters/cabinet-makers formed the most important associated trade, and they, together with upholsterers and milliners appear to have formed the focus of the developing undertakers profession (Litten 1991, 19; Reeve and Adams 1993, 69). None of the various trade directories for Poole in the latter part of the 18th and early 19th centuries (Barfoot and Wilkes 1798 *Universal Directory*, Holden's 1811 *Triennial Directory*, and Pigot and Co's 1830 *National Commercial Directory*) indicates the presence of an undertaker in the town. The early trade directories for Wiltshire covering the same period (Rogers 1992) show a similar dearth of tradesmen employed solely in undertaking (one recorded in Salisbury in 1793). There are, however, nine instances from four Wiltshire towns of businesses combining undertaking with other forms of trade, most commonly that of mercer or draper but also including a glover, and a grocer and druggist (*ibid.*). The Poole directories list two mercers and six drapers in 1798, six linen drapers in 1811, and nine drapers in 1830; it may be that some of these businesses also fulfilled the function of undertaker. It is probable, however, that for West Butts in the 18th century, carpenters would have represented the key trade involved in the funeral.

Demographic data

18th century population size: Poole and the West Butts congregation

Documentary evidence for the potential size of the population of Poole in the 18th century suggests variable figures depending on the source and – possibly more pertinent – the inclusion or exclusion of a large transitory population of seamen. A census of the town in 1801 gives a population of 4816 including 2143 males and 2673 females (Sydenham 1839, 450). This is considerably less than the '...near 7000 inhabitants...' given by Hutchins for 1766 '...when the Newfoundland ships came home ...' (1803, 1). The *Universal Directory* for 1798 states that *c.* 1500 men were employed in shipping, which suggests there may be a closer correspondence between the two previous figures than is immediately apparent if the 1801 census excluded those seamen who were frequently absent (returns would show only those in residence on the night of the census; Chapter 5). Only 140 of the 230 ships belonging to the port referenced in the *Universal Directory* were engaged in foreign trade, however – the rest being engaged in coastal trade and fishing – which substantially reduces the potential number of long-term absentee citizens. The general registry of shipping introduced in 1786 supports these figures, registering 1519 seamen in the town for that year, with a fall to 842 by 1799 (Jarvis 1970, 252). Poole is known to have expanded in size and importance as a port throughout the 18th century largely in response to the Newfoundland trade (Davies 1994, 21). The increase in population in the early part of the 18th century is

reflected in the parochial register for St James', Poole, which, while not being representative of the population as a whole, shows a substantial increase in the numbers of baptisms (49 to 73), marriages (17 to 34), and burials (30 to 98) between 1700 and 1740, the numbers having remained very similar throughout the 17th and latter part of the 16th centuries (Sydenham 1839, 451).

At the time of the chapel's foundation in 1735 the congregation comprised 15 named members including its Pastor Mr J. Bird (frontispiece). There is evidence to suggest that the congregation had been in existence for some time, having previously – as was commonly the case with the early Dissenter communities – met in a private house. Sydenham (1839, 346–7) records the presence of a Baptist society in Poole that it was believed had:

> '... met in the house of Mrs. Susannah Pike, [not one of the named founder members at West Butts] which, in 1707, was "licensed for an assembly for religious worship." This society afterwards met in a meeting house erected at West butts ...'.

The wording in the declaration drawn-up at the foundation of the West Butts meeting-house in 1735 (frontispiece), however, suggests that this earlier congregation, if related, was only a precursor of the West Butts congregation, possibly including some of its members: '... We whose names are under written ... belonging to severall Congregations at great distances now liveing in and about ... Poole ...' The implication is that at least a proportion of the signatories were recent arrivals in the town (see Chapter 5).

At its height the congregation may have been substantial as the chapel is recorded as having been capable of seating 400 people (Ivimey 1814, 149); but it can only be speculated for how long, if ever, it attained such numbers. The size of the chapel may have been in anticipation rather than a reflection of actual numbers since it has been noted that the average size of individual Baptist congregations in the 18th century '...may not have exceeded fifty...' (Brown 1986, 10). Some contemporaneous records, however, suggest that the size of congregations in the county of Dorset may have been somewhat higher, potentially averaging *c.* 194 members (Watts 1985; see Chapter 5). The chapel and its congregation was clearly still active in 1774 when Hutchins recorded the presence of a '...meeting-house ... for the Anabaptists at West-butts in West Street' (8), but by 1788 he had added the observation '... but this has not been used for many years' (29). A second edition of the *History* published in 1803 contained the further statement that the meeting-house '...is lately taken down, and a large well-built meeting house since erected in the West-street' (10).

Mr Bird – the only pastor the congregation apparently ever had – died in 1788, but there is evidence to suggest that he had been unwell for some years resulting in a dwindling in the congregation and the physical decay of the chapel (Chapter 5); Sydenham's 1839 history recalls how:

> '... the congregation gradually diminished, and at length entirely ceased. The meeting house fell to decay; and, upwards of forty years since, the land and the buildings thereon were sold ...' (346–7)

It seems likely that meetings at the chapel ceased in the latter half of the 1770s. By the time of the chapel's recorded closure in 1789, a year after the death of pastor Bird, the remaining congregation apparently represented 'only a fraction' of its former self (Coffin *et al.* 1954). The evidence for what happened to the remaining members of the congregation is contradictory; Sydenham (1839, 346–7) reported that its last member '... died at a very advanced age, two or three years prior to the foundation of ...' what was to become the Hill Street Baptist Church in 1804, while other closely contemporary statements indicate that they formed the core of this new congregation (Chapter 5).

The present meeting house in Hill Street (back cover), together with a small burial ground surrounding the building, was not completed until 1815. Prior to this any members of the new congregation who died were probably buried in one of the '... two burial places for the Quakers and Anabaptists ...' (Hutchins 1803, 10), the latter being that at West Butts. Although the chapel at West Butts had ceased to function and had been demolished in the last two decades of the 18th century, burials obviously continued to be made within the burial ground, arguably up until the cemetery's formal closure in 1854 (Chapter 5). One of the few clearly dated depositions, burial 381 in grave 279, was made in 1813/?8 (Fig. 25), at least 24 years after the closure of the chapel and, significantly (if 1813 is correct), two years before the opening of the Hill Street Church and burial ground (Chapter 5).

The major period of the cemetery's use is likely to have fallen between 1735 and 1780, a period of 45 years. The full temporal range, however, is closer to 78 years and possibly up to 110 years, the cemetery serving not one but two Baptist congregations, that at West Butts and, at least in its early stages, that at Hill Street. Sydenham (1839, 346–7) records that there was no connection between the two groups, the last elderly members of the former dying several years prior to the

foundation of the new society, but as outlined above and discussed further in Chapter 5, there is strong evidence for a continuum between the two communities. As no burial records survive there is no way of knowing how many burials were made in any one year, or how many of those for which evidence survives pertain to the West Butts congregation and how many to that later to worship at Hill Street. The majority doubtless pertain to the former; the Hill Street Church had its own burial ground from at least 1817 and it is probable that the majority of the congregation chose to be buried there.

Of the five coffins where it was possible to decipher the date of burial, four were deposited in the 18th century and one in the 19th (see Chapter 3; Fig. 25). Although stratigraphically some graves were clearly cut during the earliest years of the cemetery's use and others in the later (see Chapter 2), no statement can be made pertaining to the actual date and, consequently, congregation of origin; at least one of those dated to the 1700s falls towards the upper part of the stratigraphic range (Fig. 13).

The use of breast plates on the coffins appears to be a later development (Chapter 2) – the biographical details on the 1813/?8 coffin were contained on a breast plate – and those graves containing such coffin furniture are confined to the south-west corner of the burial ground, perhaps indicating that they formed part of a late group. The only other archaeologically distinctive group are the four north-west–south-east graves in the south-east area of the site which could have been inserted after removal of the chapel. In reality, there is insufficient archaeological or biographically information to make any statement on the temporal distribution of the cemetery population with any confidence.

Cemetery data

Unusually for a burial ground of this date, it can be stated with confidence that all that survived of the cemetery, probably representing the majority of the cemetery population, was subject to excavation (Fig. 13; see above and Chapter 2).

Appendix II gives an age range for each individual, which in some cases may cover just a few years and in others several decades dependent on the quantity and quality of the osseous material on which to base the assessment. Table 16 summaries the data within a number of age ranges and by sex where possible.

In general, there was a clear distinction between the female and male skeletal remains which is reflected in the relative lack of ambiguity attached to the majority of the attributed sexing; 18% of the sexed females bearing some level of uncertainly and 35% of the

Table 16. Summary of age and sex distributions

				Immature				
Age (yrs)	*Unsexed*		*Female*			*Male*		*Total*
		??	*?*	*Total*	*??*	*?*	*Total*	
foetus<full term	2	–	–	–	–	–	–	2
neonate 0–6 mth	2	–	–	–	–	–	–	2
infant 0.5–5	17	–	–	–	–	–	–	17
juvenile 5–12	4	–	–	–	–	–	–	4
subadult 13–18	1	–	–	1	–	–	1	3
Total				1			1	28
				Adult				
	Unsexed		*Female*			*Male*		*Total*
		??	*?*	*Total*	*??*	*?*	*Total*	
>18	1	–	–	–	–	–	–	1
>25	1	–	–	–	–	–	–	1
c. 18–25	–	–	–	2	–	–	–	2
c. 18–45	–	–	1	1	–	–	–	1
c. 25–40	–	–	–	1	–	1	1	2
c. 30–45	–	1	–	8	–	1	4	12
c. 30–55	–	1	–	5	–	1	7	12
c. 40–55	–	–	1	7	–	–	2	9
c. 40–60	–	1	1	9	1	1	6	15
>45	–	–	–	–	2	–	3	3
c. 50–70	–	–	1	4	1	–	2	6
>50	–	1	1	7	1	–	1	9
Total	2	3	5	44	5	–	26	72

males (Table 16). The female skeletons were generally smaller and considerably more gracile than the male skeletons, some being positively child-like in a way rarely, if ever, seen in prehistoric, Romano-British and early medieval skeletal material (see pp. 64–9). These very gracile individuals showed no particular signs of dietary deficiency or wasting disease and their apparent fragility probably reflects a genetic predisposition to small size coupled with a physically undemanding lifestyle.

Pelvic and cranial indicators of sexual dimorphism generally showed a strong divergence though some traits were more pronounced than others. Few of the males had a squared mental protuberance, for example, and neither the mastoid processes nor the external occipital protuberances were constantly strongly marked in the males (see Appendix III: Osteological Glossary). Ambiguity in sexing mostly resulted from poor skeletal recovery and/or preservation limiting the number of traits on which the assessment could be based.

There were at least five cases, however, where contradictory traits were recorded. In skeleton 221 (50–70 yr ??male) the skull traits and general size were feminine but the pelvic traits masculine; similarly with skeleton 419 (40–50 yr ??female), though in this case the contradictory traits were more marked. In the case of 302 (40–60 yr ?female), the pelvic traits and the general size and robusticity indicated a female but the skull traits were quite strongly masculine. The large frame of skeleton 311 (18 yr female) suggested a male individual, but the skull and pelvic traits were markedly feminine. There were only two unsexed adults, both due to insufficient skeletal recovery and poor bone survival rather than a lack of sexual dimorphism.

It is usually possible to attribute closer age ranges for immature individuals than for adults, the criteria used being based on the development of the skeletal rather than its degeneration (see p. 51). Where a variety of criteria could be applied there was usually a close correlation and/or overlap between the age indicated by each method. There were, however, three cases where the age suggested by the long bone (diaphyseal) lengths were less than that indicated by tooth development with little or no direct overlap. This probably indicates a slight retardation in growth, possibly associated with illness or a level of malnutrition. Alternatively, it may illustrate the limitations of some of the methodologies developed from recent material when applied to archaeological remains (see Molleson and Cox 1993, 150). The latter may be further highlighted by the case of skeleton 381, the only individual to have a partially legible coffin plate. Tooth development in this infant suggested an age of 3½–4½ years, whilst the long bone lengths fell in the ranges for an individual of *c.* 3 years. The age at death shown on the coffin plate was '5 years' (Fig. 25). The discrepancy is not large but does illustrate the importance of the approximate nature of ages attributed to archaeological material even with immature individuals; although the possibility of the age of the individual having been 'rounded-up' cannot be dismissed.

Ageing adults was – as ever – problematic and likely, certainly in those over 45–50 years old, to have been under-estimated in many instances (Molleson and Cox 1993, 167–79; O'Connell 2004). The use of developed tooth wear patterns proved difficult due to the high rates and early onset of dental caries, both affected by and affecting what individuals would eat, how they would chew and consequently the patterns of wear to the teeth (see below). Similarly, high rates and early onset of *ante mortem* tooth loss left fewer teeth on which to base an assessment and potentially, in the absence of dentures, increasing wear to the remaining teeth. Where possible a combination of methods were employed once epiphyseal fusion was complete (*c.* 24–9 yr; Scheuer and Black 2000, fig. 8.4).

Where the auricular surface of the innominate survived, the age range suggested by changes to the surface was used as a base, with adjustments dependent on other criteria. Changes seen in the auricular surface commonly did not equate with a single phase (Buikstra and Ubelaker 1994, 25–32) and although there was generally an overlap with the age ranges suggested by other criteria the method did appear to be consistently under-ageing individuals in the over 45 year group (an observation also made in analyses of other assemblages (Molleson and Cox 1993, 168; Start and Kirk 1998)).

The potential accuracy and limitations of the methods employed are partly illustrated by comparison of the approximate attributed osteological ages and the known ages of three, possibly four individuals, as shown in studs in the coffin lids. The age of skeleton 311 (grave 309) was assessed as *c.* 18 years, which is the age shown on the coffin lid for this individual (Figs 18 and 24). Skeleton 263 (grave 261) was assessed as *c.* 45–50 years old, his actual age at death being 54 years (Figs 17 and 24). An assessed age of over 50 years was attributed to skeleton 375 (grave 373), the actual age of this individual being 67 years (Figs 19 and 25).

One male aged at over 45 years (215, grave 213) appears to have been 97 years old when he died (coffin stud data unclear; Fig. 25). Mr Bird is known to have died in 1789 having been the minister of the chapel for 53 years. Presumably he was at least 20 years old at the time the chapel was set-up and it may be assumed that he was buried in the grounds of the chapel at which he ministered (his grave was not identified). While several of the males excavated from the cemetery may have fallen within the 70 year range (Table 16) none was actually aged at more than 70 years old. The last members of the community reportedly died at '... a

very advanced age ...' (Sydenham 1839, 346); quite what age this relative statement alludes to is inconclusive but its is likely to have been over 60 years at least. Whilst this small number of examples is not conclusive, its does correlate with the apparent trend noted in the osteological analysis that the older adults particularly were in danger of being consistently underaged and that confidently identifying those individuals older than 60 or 70 years is difficult.

Minimum number of individuals (MNI)

A minimum number of 100 individuals were identified within the West Butts cemetery population, 83 from *in situ* or partially *in situ* deposits, the rest as redeposited remains (above, pp. 51–3).

Immature individuals

Bills of Mortality for 18th century London show that over 30% of deaths occurred in the first two years of life, with *c.* 40% between 0 and 5 years and *c.* 50% before the age of 20 years (Roberts and Cox 2003, 303–4, table 6.5). Such figures are rarely reflected in the osteological demographic profiles of contemporaneous cemeteries either from London or elsewhere (Table 17); a variety of intrinsic (poor preservation/survival, shallow immature graves) and extrinsic (age-related cultural variations) factors commonly being cited to explain the discrepancies. There are limitations in the comparisons which can be drawn between the nation's capital and a seaport on the Dorset coast; different stresses would be brought to bear on individuals living in the dense urban environment of London and those of the thriving and expanding but still comparatively small seaport with its ready access to a rural hinterland and (relatively) fresh sea-air (Figs 5, 8, and 9).

Living conditions and dietary stresses, particularly those experienced by the poor, will still have taken their toll, however, as demonstrated by mortality rates from the Dorset port of Lyme Regis (*c.* 68 km/45 miles to the west of Poole) for the first half of the 19th century. These indicate 40% of deaths occurring between 0 and 15 years and records for 1849 show *c.* 20% occurring in the first year (Walker 1981). Smallpox, measles, and whooping cough were amongst the commonest cause of childhood deaths (*ibid.*), representing only some amongst the universally distributed acute infections which left no marks on the bone.

The proportion of immature to adult individuals from West Butts is similar to those recorded in some other contemporaneous cemeteries (Tables 16 and 17). Most of the immature individuals were less than 5 years old (75%; 21% of total population), with a substantial proportion of 2 years or less (46% immature; 13% of total population). So, whereas the overall number of individuals may appear low, the distribution within that group appears similar to the 'normal' pattern suggested by the London Bills of Mortality and Lyme Regis data discussed above.

At West Butts, the apparent dearth of immature individuals cannot be blamed on poor preservation as even foetal remains are well preserved and represented (see pp. 53–4; Fig. 26). All except one of the *in situ* burials were coffined, irrespective of age. Most immature individuals were buried in an individual grave, but one neonate (400) was buried in the same coffin as an adult female (393; grave 391: Fig. 19), and

Table 17. Demographic data from some contemporaneous cemeteries

Cemetery	*Date range*	*Sample size*	*Adults (>18 yr)*	*Immature (<18 yr)*
St Nicholas', Sevenoaks, Kent[1]	1550–1875	192	175 (91%)	17 (9%)
			61 (35%) F; 55 (31%) M	
Spitalfields, London[2]	1729–1852	968	623 (64%)	251 (26%)
			312 (50%) F; 311 (50%) M	
St Brides, London[3]	1740–1852	227	212 (93%)	15 (7%)
			103 (49%) F; 109 (51%) M	
St Martin's, Birmingham[4]	late 18th–19th C	505	352 (70%)	153 (30%)
			130 (67%) F; 180 (51%) M	
Friends Burial Ground, King's Lynn, Norfolk[5]	late 18th–early 19th C	34	32 (94%)	2 (6%)
			16 (50%) F, 15 (47%) M	
Baptist Burial Ground, King's Lynn[5]	early–mid-19th C	17	15 (88%)	2 (12%)
			9 (50%) F, 7 (40%) M	
Cross Bones, Southwark, London[6]	mid-19th C	148	*45 (30%)	*103 (70%)
			20 (44%) F; 21 (47%) M	

* = slight overlap in immature/adult age ranges.

[1]Boyle and Keevill 1998; [2]Molleson and Cox 1993, 23–6; [3]Scheuer 1998; [4]Brickley 2006, tab. 92; [5]Mahoney forthcoming; [6]Brickley and Miles 1999, tab. 5

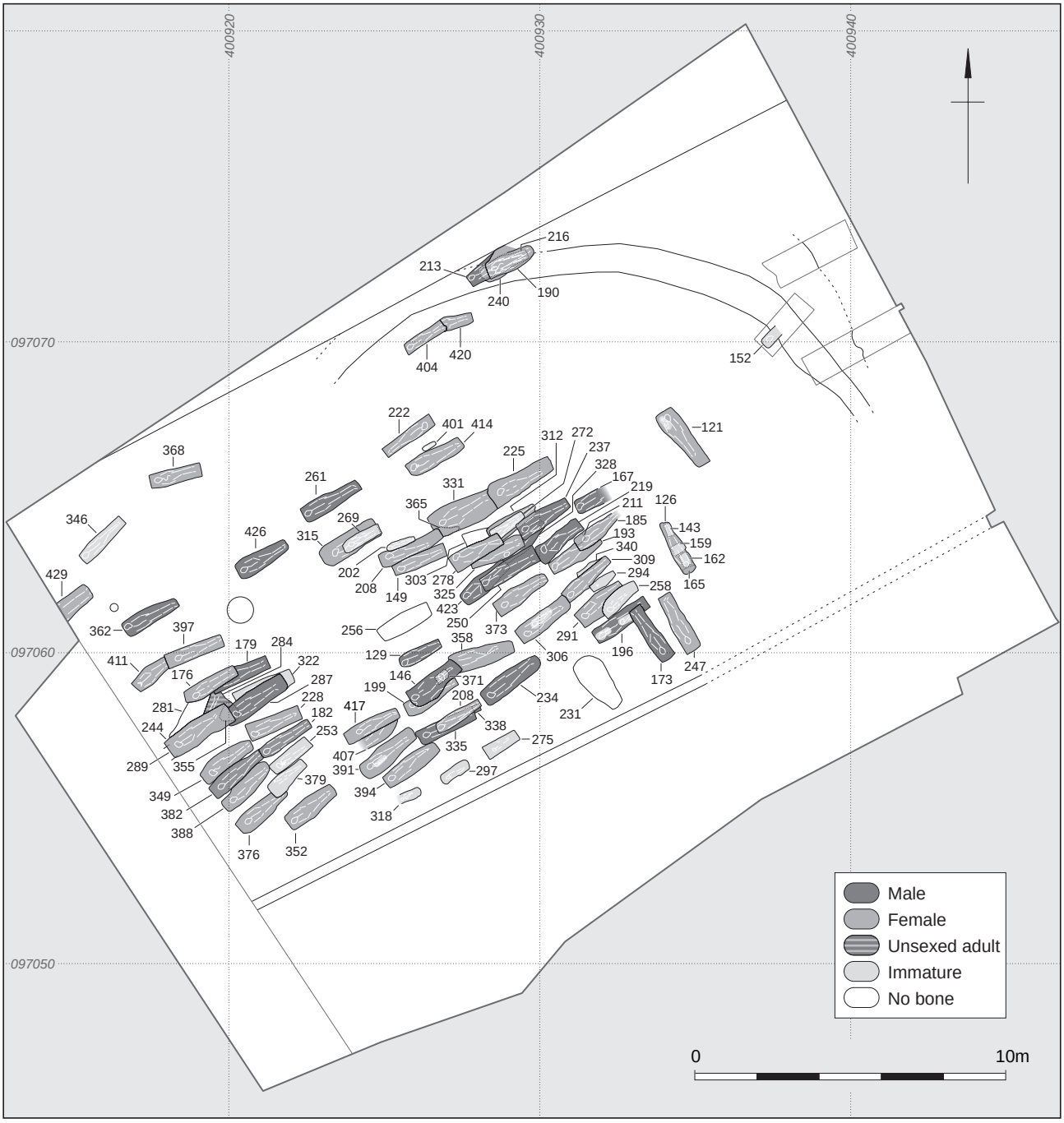


Figure 33 Grave plan showing distribution of individuals within the cemetery by age

two infants (205 and 314) and one juvenile (207) were interred directly above the coffin of an adult; 314 above adult female 308 (grave 306; Fig. 18), 205 and 207 both above adult male 198 (grave 196; Figs 15 and 16). There was no consistent distinction in the location of the immature graves; there was a row of three foetal–young infant burials to the west of where the chapel would have stood, but other graves of immature individuals appear to have been distributed across the cemetery (Fig. 33). It was noted that the graves of infants and juveniles were, on average, 0.18 m shallower than those of older individuals (above, pp. 21–4), consequently, it is possible that there were more of these young individuals amongst the disturbed and redeposited remains than is apparent within the MNI. The identified redeposited infants were sometimes represented by very little bone and it is possible that some were lost by this mechanism. Against this should be balanced the fairly small size of the cemetery, its known limited temporal range and the relatively low frequency of intercutting burials or other intrusions causing disturbance to the bone.

The observed rates may, in this instance, be close to a true reflection of the population utilising the cemetery, indicating relatively low fertility rates and better infant health than that seen in the larger cities. There is a preponderance of females within the cemetery population and it is possible that a larger than average proportion of these women never married, or were married to seamen who spent a substantial amount of time away from home, leading to smaller family sizes.

In its early days and into the first half of the 18th century, endogamy (marriage within the 'tribe') was a firmly rooted General Baptist tradition (Brown 1986, 19). As Brown points out:

> '... Slightly over half the country's population was female in the eighteenth century and for decades frustrated sisters within these churches probably kept the topic [of endogamy] alive and urgent ... During the next twenty-five years [following renewed debates in 1719] the scene gradually changed but not without considerable personal distress and an unnecessary depletion of their membership ...'. (1986, 19–20)

It is probable that, at least in the early days of the West Butts congregation, this dictate was still enforced and that some of the 11 female signatories (of 15) were and remained spinsters. The same surname is shared by only one male and female, Jno. Bird (the minister) and Sarah Bird (see frontispiece) but it cannot be assumed they were man and wife; they could have been mother and son (p. 112). Although not necessarily reflective of the Baptist congregation, a review of Prerogative Court of Canterbury (PCC) wills for Poole between 1750 and 1800 shows *c.* 6% to be those of spinsters (National Archive Document).

In the period covered by the cemetery, sea-trade and shipping were expanding in Poole; the town represented the largest urban centre in the county and the port ranked eleventh out of 73 English and Welsh ports in 1789 (Davies 1994; see p. 8). Although there is little documentary evidence for the occupation of the members of the congregation it is likely that, in this major seaport, at least some will have been seamen. The PCC Wills for Poole between 1750 and 1800, although not representative of the lower end of the social strata, show *c.* 17% to be those of mariners, both Naval and merchant (National Archive Document). Trade was focused on the Newfoundland fisheries and sailors could be away for months or often years at a time (at least two ships are recorded as being away 4–6 years; Davies 1994). Absent husbands would not make for large families.

Entries for Poole in the *Militia Ballot Lists* (Medlycott 1999), compiled in the second half of the 18th century, occasionally included comments with regard to a man's family. Recording (or not) was inconsistent and only 280 of the 1057 entries for Poole include any family detail – whether or not the man had a wife and how many children they had. This, presumably random, sample does, however, illustrate the probable average family size at this time (Table 18). Males with more than four children under the age of 10 years were amongst those who would be exempt ('crossed-out') from the list, so there was potentially an inverted pressure to over- rather than under-play the size of one's family (*ibid.*, 1). Large families – whether by accident or choice – do not appear to have been common. The highest percentage of households appear to have included three children with a median number of two. The *Militia Ballot Lists* included males of 18–50 years and the individual's age was not recorded, consequently, it may have included a high proportion of young married men whose families had not yet reached their full number. What would not be reflected in these figures of course, would be any children who had been born into the family but not survived.

Those with large families included labourers (two with six children), artisans, and tradesmen (a ropemaker with eight children, a bricklayer classed as a pauper with seven, those with six children including a draper, a victualler, a blacksmith, a joiner, and a cordwainer). Of those few listed as in government service (presumably not Baptists due to the 1661 *Corporations Act*; see Appendix IV) or the professions, a customs officer was recorded as having six children and a notary five. At least five men appear to have been widowers, four with one child and one with three.

Osteological indicators of childhood stress at West Butts do not give a consistent picture (see below). Relatively low rates of dental hypoplasia suggest infants and young children were generally well nourished and not subject to repeated stress from illness. Rates of *cribra orbitalia* and rickets suggest a more median position in comparison with other contemporary sites, and that at least a proportion of those burying their dead at the site suffered various vitamin deficiencies in childhood.

Table 18. Number of children listed as family members in Dorset *Militia Ballot Lists* for late 18th century Poole

No. children	0	1	2	3	4	5	6	7	8
No./% 'house-holds'	59	62	40	64	35	10	8	1	1
	21.7	22.1	14.3	22.9	12.5	3.6	2.9	0.4	0.4

Adults

The most striking characteristic about the Poole demographic data is the substantially higher proportion of females (61%) to males (36%) amongst the adults. The figures appear in stark contrast to other contemporaneous cemeteries (Table 17) which show a close correlation between the sexes (the small numbers within the Baptist group from King's Lynn renders any significance in the difference there inconclusive). Two possible reasons for this have already been discussed – a preponderance of spinsters linked to endogamy within the Baptist community and the presence of sailors amongst the congregation's members.

Despite the fact that seamen involved in the Newfoundland trade were exempt from impressment into the Royal Navy (Davies 1994), the frequent wars of the 18th century, in which the Navy often featured large, are likely to have taken some toll on the town's sailors. Shipwrecks were common, with losses due to storms or navigational errors to both long-route traders and (predominantly) those working the coastal waters (McKee 1974, 236). There was also the threat of French privateers in the Channel and Barbary corsairs in the Mediterranean (Davies 1994). All such dangers at sea may lead to the loss of life which would not be marked by a grave on land, and most such losses would be of males.

It also appears, certainly within the early Nonconformist congregations, that women commonly considerably out-numbered men (see Chapter 5). This may, in part, have been a matter of inclination, but until the repeal of the 1661 *Corporations Act* (Appendix IV) in the 19th century, with its political, social, and economic consequences for males joining a Dissenting congregation, it may have been a matter of necessity; they could not join but their wives and widows might do so.

The age distribution amongst the males and females is fairly similar, the median range for both sexes falling in the 30–55 year range. The highest number of females was recovered from the 40–60 year age group, whereas the highest number of males was from the 30–55 year age group, but the overlaps between the age ranges render this apparent slight difference of little significance. There are few subadults within the assemblage (including one female and one possible male) and only four young adults (two females and two males), the majority of the population (69%) being over 25 years of age (Table 16). There is no difference between the sexes within these younger age ranges suggestive of young males in particular going to sea and subsequently settling (or dying) elsewhere. Over half of the females (27% of the population) were over 40 years old and presumably passed their peak reproductive period. There is one instance of a female (35–45 yr old) buried with a neonate in the same coffin suggestive of dual deaths linked to problems in childbirth (393 and 400 in grave 391; Fig. 19). Otherwise, there is no clear demographic evidence to suggest a high incidence of female deaths during or following childbirth, though some are likely to have occurred. A slightly smaller proportion of the male compared to the female adults were over 40 years old (14% of the population), but there is a relatively small difference between the sexes (54% of males, 61% of females).

A minimum of 15% of the population were over 50 years old. Although there appears to be a substantially higher proportion of females than males within this group (minimum 13 compared with a minimum of three; 29% of females and 11% of males) these figures could be misleading in view of the overlaps between age ranges and the potential discrepancies linked to under-ageing in the older age ranges discussed above.

The distribution of age at death amongst the adults shows similarities with those seen in the Bills of Mortality for London across the period of the cemetery's use (Roberts and Cox 2000, table 6.5, 304), though the dynamics of change between decades seen in the recorded data is inaccessible in the West Butts cemetery population. Overall the figures from Poole are probably closest to those for the mid-18th century onwards, where most recorded adult deaths were in the 30s to 50s, with 6–11% surviving beyond 70 years of age (*ibid.*).

Skeletal indices and non-metric traits

A summary of the cranial and post-cranial measurements taken is given in Tables 19 and 20 respectively, showing the range, mean, and standard deviation by sex. The lower mean readings for the females, particularly within the post-cranial measurements, reflects the sexual dimorphism within the assemblage discussed previously, illustrating the generally larger more robust skeletal build of the males; though there is a broad overlap between the sexes within most of the ranges.

Stature estimates

Stature was estimated for 65 of the adults (90%: Table 21); the femur and fibula or femur and tibia were used in combination where possible, the upper limb bones being used only where lower limb bones were not available for measurement.

The lower end of the male range is represented by skeleton 148, a 50–60 year old ??male where the dimorphic traits are contradictory; the pelvic traits are masculine, the skull traits mixed, and the general size and robusticity tending towards feminine. Conversely, the upper end of the female range is represented by

Table 19 Cranial measurements (mm)

Measurement	*No.*	*Range*	*Mean*	*SD*
cranium: B'	F: 22	F: 89.5–106.6	F: 99.0	F: 3.7
	M: 12	M: 99.2–113.4	M: 104.3	M: 4.6
cranium: B"	F: 18	F: 106.0–134.5	F: 117.0	F: 8.4
	M: 10	M: 107.0–132.0	M: 122.7	M: 7.0
cranium: MB	F: 16	F: 129.0–149.0	F: 139.0	F: 5.7
	M: 10	M: 138.0–147.0	M: 142.3	M: 3.3
cranium: L	F: 16	F: 155.0–192. 0	F: 180.3	F: 9.9
	M: 11	M: 175.0–193.0	M: 186.6	M: 5.2
cranium: H'	F: 9	F: 112.5–128.0	F: 118.7	F: 4.8
	M: 11	M: 116.0–136.0	M: 126.3	M: 6.6
mandible: GoGo	F: 19	F: 74.2–103. 1	F: 90.0	F: 5.8
	M: 11	M: 89.0–103.0	M: 96.5	M: 4.4
mandible: Cr H	F: 21	F: 52.0–64.9	F: 58.3	F: 4.3
	M: 15	M: 56.0–78.0	M: 65.2	M: 5.5
mandible : H1	F: 24	F: 19.0–36.0	F: 27.9	F: 3.8
	M: 14	M: 24.5–35.6	M: 30.7	M: 3.5
mandible: ML	F: 16	F: 91.0–106.0	F: 99.7	F: 4.4
	M: 8	M: 96.0–114.0	M: 104.7	M: 5.8
mandible: RB'	F: 24	F: 23.7–32.4	F: 28.5	F: 2.5
	M: 14	M: 24.5–36.5	M: 31.3	M: 3.5
mandible: W1	F: 10	F: 97.2–129.6	F: 113.2	F: 9.9
	M: 7	M: 106.3–122.3	M: 116.5	M: 6.5
mandible: ZZ	F: 27	F: 36.7–50 0	F: 43.2	F: 2.8
	M: 16	M: 39.6–50.0	M: 44.8	M: 2.8
facial: DC	F: 12	F: 19.9–26.5	F: 22.5	F: 1.8
	M: 8	M: 20.8–28.6	M: 23.3	M: 2.4
facial: G'1	F: 14	F: 40.2–53.3	F: 46.8	F: 3.3
	M: 9	M: 44.8–55.7	M: 50.5	M: 3.6
facial: G'H	F: 8	F: 60.6–72.6	F: 65.5	F: 5.1
	M: 8	M: 67.4–73.9	M: 70.4	M: 2.0
facial: G2	F: 17	F: 27.5–41.1	F: 35.8	F: 3.2
	M: 10	M: 30.9–40.7	M: 36.3	M: 3.6
facial: GB	F: 8	F: 80.8–92.0	F: 84.9	F: 3.8
	M: 7	M: 86.1–103.3	M: 92.8	M: 6.0
facial: GL	F: 7	F: 84.0–90.9	F: 88.1	F: 2.5
	M: 6	M: 82.4–103.7	M: 91.9	M: 7.2
facial: J	F: 5	F: 106.4–125.3	F: 118.5	F: 7.2
	M: 7	M: 113.2–138.3	M: 128.5	M: 8.0
facial: LB	F: 9	F: 89.6–98.4	F: 93.8	F: 3.1
	M: 8	M: 88.3–112.0	M: 98.3	M: 7.4
facial: NB	F: 14	F: 21.0–29.4	F: 24.3	F: 2.5
	M: 8	M: 22.8–27.5	M: 25.5	M: 1.5
facial: NH'	F: 8	F: 45.0–53.0	F: 48.6	F: 2.6
	M: 8	M: 47.0–53.0	M: 49.6	M: 2.3
facial: O1	F: 9	F: 35.8–40.4	F: 38.1	F: 1.4
	M: 7	M: 37.0–42.8	M: 40.3	M: 1.7
facial: O2	F: 9	F: 33.2–38.1	F: 35.6	F: 1.5
	M: 8	M: 32.0–42.2	M: 36.5	M: 3.4

Biometric codes after Brothwell (1972, 79–84); securely sexed individuals only

skeleton 406, a 30–40 year old ??female with ambiguous pelvic traits, mixed skull traits and a relatively large, robust general skeletal structure. Excluding those sexed with least confidence (??) from the figures creates a tighter range for both males and females, with a slightly higher mean for the males and a slightly lower one for the females (Table 21). Excluding all except the securely sexed individuals makes no difference to the ranges or to the female mean, but increases the male mean slightly to 1.71 m (the SD for both sexes increases slightly to 6.4 for the males and 7.6 for the females).

The means show close similarities with others for the post-medieval period, with an average mean of 1.71 m for the males and 1.60 m for the females (Roberts and Cox 2003, table 6.7; data from 11 sites). The means for both sexes at West Butts tend to fall towards the lower end of the range recorded by Roberts and Cox at 1.68–1.74 m for the males and 1.56–1.64 m for the females. Recent data from St Martin's, Birmingham is close to but slightly higher than that from West Butts with a male mean of 1.72 m (SD 5.6) and 1.59 m (SD 5.6) for the females, though both have lower standard deviations (Brickley 2006; table 95). Data from two Nonconformist cemeteries in King's Lynn (Mahoney 2005; Boston 2005), have similar mean rates to the West Butts males (range 1.53–1.81 m), with slightly higher mean rates for the females (range 1.52–1.66 m).

The closest comparisons for both sexes at West Butts are with several of the London sites. The females seem to be consistently at the lower end of the mean ranges and/or slightly below average; this may reflect the skewing effect of the two very small, child-like adult females 178 and 378 both with an estimated stature of 1.40 m.

The later 18th century *Militia Ballot Lists* were erratic in their inclusion of some categories of information and only 465 of the 1057 surviving records (44%) for Poole males included a measurement of stature (N.B. 146 of the records for Poole contain nothing other than a name; Medlycott 1999). Height – or lack of it – was one of the intrinsic criteria which could lead to exclusion from the list; a minimum of '5 feet 4 inches' (*c.* 1.63 m) was generally required (*ibid.*, 1). Of the *c.* 19 males under this height recorded in the list, only three may have been 'crossed-out' (ie, excused) on account of their height; one other was excluded because he was 'lame', but most would not have been called to serve anyway since they were already volunteers in one of the several other extant military organisations such as

Table 20. Post-cranial measurements (mm)

Measurement	*No.*	*Range*	*Mean*	*SD*
Manubrium: L	F: 12	F: 37.5–55.0	F: 46.6	F: 4.5
	M: 4	M: 46.6–50.0	M: 48.6	M: 1.5
Sternum: L	F: 10	F: 61.0–95.3	F: 79.6	F: 11.2
	M: 3	M: 110.0–130.6	M: 119.4	M: 10.4
Sacrum: B	F: 13	F: 93.3-127.4	F: 113.9	F: 10.2
	M: 9	M: 106.0–121.8	M: 116.7	M: 5.8
Sacrum: Ht	F: 9	F: 85.1–122.0	F: 105.2	F: 12.8
	M: 7	M: 97.1–127.0	M: 113.5	M: 10.6
Scapula: glenoid L	F: 37 (bi.)	F: 25.0–39.8	F: 33.2	F: 3.1
	M: 28	M: 34.2–48.7	M: 39.8	M: 3.2
Scapula; glenoid W	F: 27 (bi.)	F: 17.5–26.0	F: 23.3	F: 1.6
	M: 18	M: 23.6–36.0	M: 29.3	M: 2.9
Scapula: max. L	F: 2 (bi.)	F: 144.4–145.2	F: 144.8	F: 0.6
Humerus: W distal as	F: 37 (bi.)	F: 29.7–50.2	F: 38.8	F: 3.6
	M: 20 (bi.)	M: 44.0–51.0	M: 46.7	M: 2.2
Humerus: epicondylar W	F: 40 (bi.)	F: 37.6–59.1	F: 52.2	F: 4.0
	M: 22 (bi.)	M: 48.0–68.0	M: 62.3	M: 4.4
Humerus: VD head	F: 52 (bi.)	F: 31.7–49.5	F: 39.8	F: 2.65
	M: 25 (bi.)	M: 42.6–51.3	M: 47.6	M: 2.3
Humerus: L	F: 46 (bi.)	F: 228–321	F: 285.9	F: 17.3
	M: 27 (bi.)	M: 212 - 371	M: 318.0	M: 26.8
Radius: depth head	F: 52 (bi.)	F: 7.2–12.5	F: 8.8	F: 1.1
	M: 28 (bi.)	M: 8.5–21.3	M: 11.2	M: 2.3
Radius: diam. head	F: 39 (bi.)	F: 14.0–23.5	F: 19.6	F: 1.9
	M: 20 (bi.)	M: 12.4–26.6	M: 22.6	M: 2.8
Radius: L	F: 31 (bi.)	F: 164–217	F: 203.4	F: 12.6
	M: 24 (bi.)	M: 215–265	M: 23.6	M: 14.0
Ulna: L	F: 27 (bi.)	F: 189–239	F: 223.3	F: 12.5
	M: 15 (bi.)	M: 240 - 281	M: 256.6	M: 12.3
Femur: a-p meric	F: 64 (bi.)	F: 18.2–31.4	F: 26.2	F: 2.6
	M: 30 (bi.)	M: 26.6–34.5	M: 30.0	M: 2.2
Femur: m-l meric	F: 64 (bi.)	F: 24.6–36.5	F: 30.4	F: 2.6
	M: 33 (bi.)	M: 30.0–39.6	M: 33.8	M: 2.6
Femur: a-p midshaft	F: 60 (bi.)	F: 20.5–33.1	F: 25.3	F: 2.1
	M: 27 (bi.)	M: 26.4–33.1	M: 29.4	M: 1.6
Femur: m-l midshaft	F: 60 (bi.)	F: 18.5–32.7	F: 26.0	F: 2.7
	M: 28 (bi.)	M: 23.5–32.4	M: 28.2	M: 2.2
Femur: Bi-condylar W	F: 49 (bi.)	F: 39.1 - 77.8	F: 71.3	F: 6.6
	M: 23 (bi.)	M: 74.5–89.1	M: 81.4	M: 4.4
Femur: VD head	F: 50 (bi.)*	F: 32.9–46.6	F: 41.1	F: 2.6
	M: 26 (bi.)	M: 44.1–51.6	M: 47.9	M: 2.1
Femur: max L (FeL1)	F: 61 (bi.)	F: 344–471	F: 416.6	F: 31.6
	M: 27 (bi.)	M: 424–530	M: 458.6	M: 26.5
Patella: L	F: 39 (bi.)	F: 28.5–42.0	F: 36.6	F: 2.6
	M: 23 (bi.)	M: 34.7–48.4	M: 43.1	M: 3.2
Patella: W	F: 42 (bi.)	F: 30.0–49.0	F: 38.8	F: 3.8
	M: 23 (bi.)	M: 39.5–48.2	M: 44.1	M: 2.2
Tibia: a-p cnemic	F: 64 (bi.)	F: 24.0 - 34.3	F: 28.9	F: 2.5
	M: 28 (bi.)	M: 31.1–41.0	M: 35.4	M: 2.8
Tibia: m-l cnemic	F: 64 (bi.)	F: 18.1–26.1	F: 21.43	F: 1.7
	M: 28 (bi.)	M: 21.8–35.3	M: 26.1	M: 2.5
Tibia: L	F: 49 (bi.)	F: 292–375	F: 328.2	F: 19.7
	M: 25 (bi.)	M: 330–414	M: 362.4	M: 22.0
Fibula: L	F: 25 (bi.)	F: 280–370	F: 324.7	F: 24.0
	M: 9 (bi.)	M: 333 - 398	M: 359.4	M: 24.5

N.B. Securely sexed individuals only. * One measure excluded due to gross pathology

the yeomanry or sea fencibles. The statures stated in the *List* at best represent a guide. The height was clearly rounded up or down – probably with little consistency from year to year or between those recording the measurement – each record being to the nearest inch. Measurements were doubtless taken at different times of day; we are all slightly taller in the morning before the rigours of our upright stance take their toll on the plasticity of the inter-vertebral discs.

An engraving of 1800 illustrating men being interviewed for the *Militia List* shows them being measured in their footwear (cover Medlycott 1999), which would have added to their true height by variable degrees depending on the thickness/height of the sole/heel. The *Lists* occasionally show discrepancies of up to two inches in an individual's recorded height for different years (the Poole records include lists for 1759, 1796, 1798, and 1799, most of those with useable data (*c.* 72%) being from the 1790s). These discrepancies may reflect one or more of the above mentioned factors and it is also possible in some instances, particularly with the older men, that the height loss which occurs as part of the normal ageing process may have had some effect. Despite these various factors possibly affecting the reliability of some data, the suggested range, 4 ft 10 in (1.47 m) to 6 ft 1 in (1.85 m), and particularly the mean/median value, 5 ft 7 in (1.70 m; 104 individuals), do compare closely with the figures obtained from the West Butts long bone measurements (especially excluding the ten individuals from the *Militia Lists* recorded as being under 5 ft 2 in).

Table 21. Estimated stature: ranges and means

	No.	*Range*	*Mean*	*SD*
Male	22 (85%) inc. 6 ?male & 4 ??male	1.57–1.86 m (*c.* 5 ft 1¾ in–6 ft 1¼ in)	1.69 m (*c.* 5 ft 6¾ in)	6.2
	18 (69%) inc. 6 ?male	1.62–186 m	1.70 m	5.8
Female	42 (95%) inc. 6 ?female & 6 ?? female	1.40–1.74 m (*c.* 4 ft 7 in–5 ft 8½ in)	1.58 m (*c.* 5 ft 2¼ in)	7.4
	36 (82%) inc. 6 ?female	1.40–70 m	1.57 m	7.1

Cranial indices

The cranial index was calculated for 37 adults (Table 22). It was possible to take measurements on more male than female skulls as the latter, being generally lighter and more gracile, had been more prone to warping and heavy fragmentation (above, pp. 53–4).

The male mean is close to that of 75.8 recorded at Spitalfields, but the range is slightly higher as is the standard deviation (range 67.0–85.9, SD 5.1; Molleson and Cox 1993, table 2.9). The mean for the females is higher than the 75.8 from Spitalfields, with a shorter range and lower standard deviation (range 61.8–82.6, SD 5.3; *ibid.*).

Table 22 Summary of cranial index data

	No.	*Range*	*Mean*	*Type*
Male	18 (69%)	64.7–85.5	75.9 (SD 4.94)	6 dolicho 10 meso 1 brachy 1 hyperbrachy
Female	21 (48%)	71.5–83.2	76.7 (SD 3.27)	8 dolicho 10 meso 3 brachy

N.B. male figures inc. 3 ??M & 5 ?M; female figures inc. 2?? F & 3 ?F

A summary of other cranial indices is presented in Table 23. The broad range seen in the male orbital indices and the high standard deviation is largely due to the presence of one individual (169) with a very distinctive facial appearance comprising a long, narrow face with deep orbital margins which are likely to have given him a 'droopy-eyed' appearance (Fig. 34a); a female, 124, has similar but less pronounced orbits (Fig. 34b). Other distinctive facial features include the anterior extension of the mandible in subadult 288A, which was accompanied by reduction in the alveolar area, congenital absence of several teeth and labial angling of the remaining premolar and molar teeth. The shape of the maxilla of an adult female (396) probably also lent the individual a distinctive

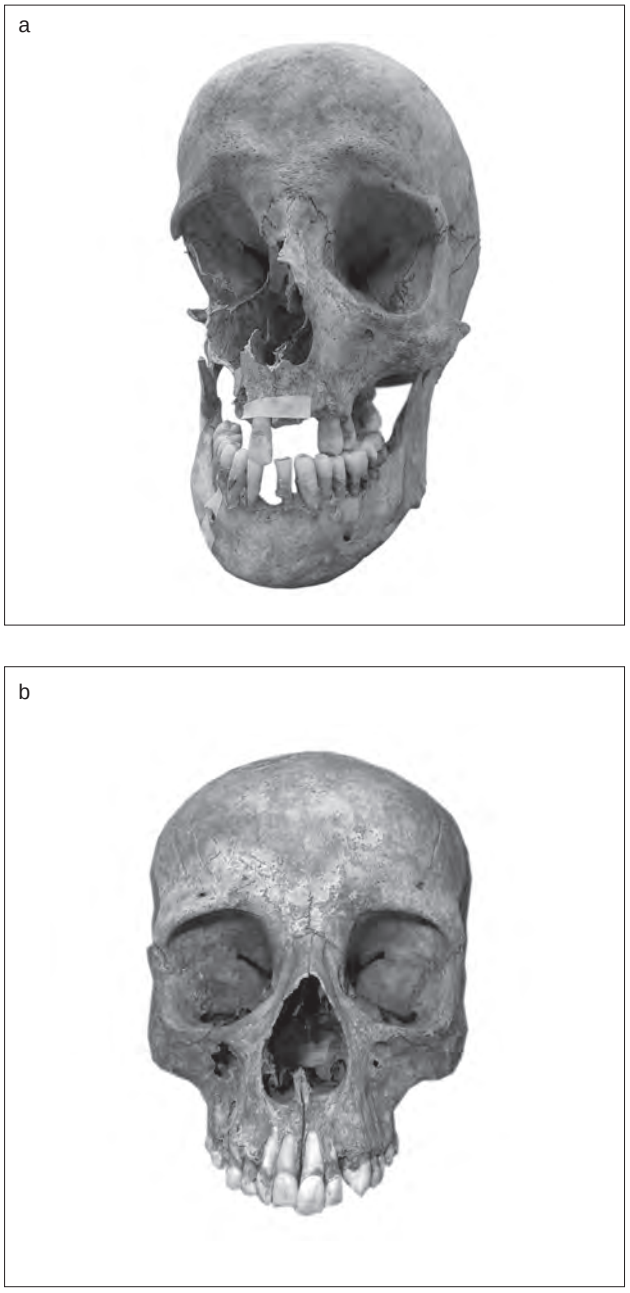


Figure 34 a) Skull from burial 169 (adult male) with distinctive orbital shape b) skull from burial 124 (adult female) with similar orbital shape and overbite

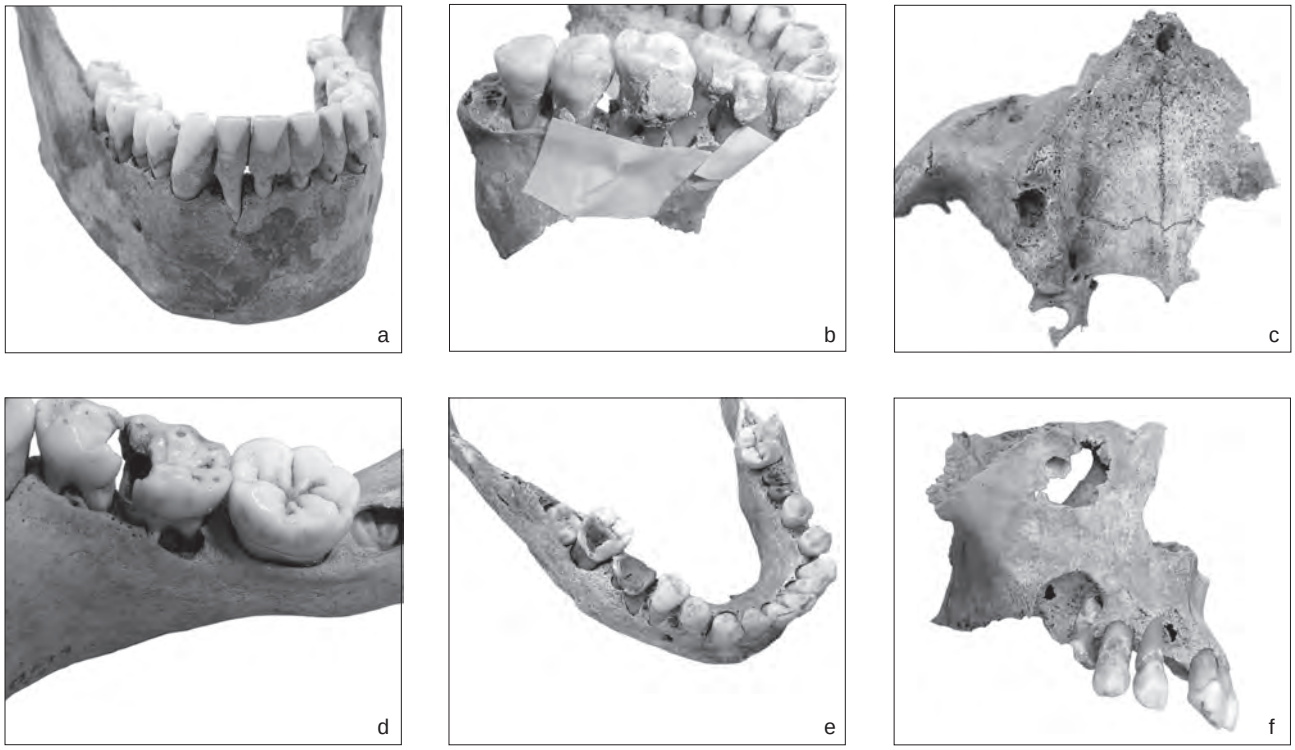


Figure 35 Dental disease: a) 175 (adult male) anterior view of mandible showing heavy calculus deposit on anterior teeth; b) 425 (adult male) left buccal view of maxilla showing heavy calculus deposit on distal teeth and periodontal disease in M3; c) 396 (elderly adult female) palatal view of maxilla showing extensive ante mortem tooth loss in loss in alveolar height; d) 154 (juvenile c. *6–7 yr) occlusal view left side mandible showing dental caries and abscess in deciduous dentition; e) 311 (female* c. *18 yr) occlusal view of mandible showing dental caries; f) 317 (adult female) view of right side maxilla showing pronounced overbite and dental abscess*

appearance; having suffered extensive *ante mortem* tooth loss the remaining palate is 'V-shaped' forming a pronounced point at its anterior aspect (Fig. 35c). At least five individuals, four females and one male (124, 178, 317, 399, and 384), had pronounced maxillary overbites (eg, Fig. 35f), the male also having a pronounced mental protuberance (Appendix III; see below, p. 76).

Table 23. Summary of cranial indices (secured sexed individuals only)

Index	*No.*	*Range*	*Mean*	*SD*
Nasal	6 M	45.6–56.8	51.5	3.9
	8 F	43.2–56.9	48.3	4.9
Orbital	7 M	78.0–108.6	88.2	9.8
	9 F	82.4–97.2	93.5	4.7
Palatial	9 M	66.9–79.8	72.7	3.9
	14F	62.9–97.5	76.9	9.4
Upper facial height	6 M	50.2–61.5	54.6	3.9
	5 F	50.8–61.5	57.4	4.0
Cranial length-height	8 M	63.0–72.0	67.3	2.8
	9 F	61.2–72.7	65.2	3.4
Cranial breadth-height	8 M	84.9–95.1	88.7	3.7
	9 F	73.6–92.7	84.6	5.2
Fronto-parietal	10 M	69.1–79.3	73.4	3.0
	15 F	54.3–75.0	70.6	5.4

Post-cranial indices

Platymeric (degree of anterior-posterior flattening of the proximal femur) and platycnemic (meso-lateral flattening of the tibia) indices were calculated for 59 (82%) of the adults (Table 24). The mean readings for the platymeric index are in the eurymeric range and close to the figure of 85 given by Brothwell for 17th century English femora (1972, table 2); the lower index for females noted elsewhere also being observed at West Butts (*ibid.*, 91). The ranges are shorter and the means lower than recorded at Spitalfields (Molleson and Cox 1993, table 2.10). The means for the platycnemic index are in the eurycnemic range, with no readings in the lower platycnemic range. The means are close to those observed at Spitalfields but the ranges are considerably shorter and the standard deviations smaller (*ibid.*). Platycnemia has been linked with plastic changes to the bone as a result of the frequent adoption of a squatting posture and is noted as being most common in prehistoric material in the British

Table 24. Summary of platymeric and platycnemic indices (measurements from left side)

	No.	*Range*	*Mean*	*SD*
	Platymeric Index			
Male	19 (73%) inc. 3 ?male & 2 ??male	76.9–97.7	88.4	6.4
	14 (54%) securely sexed only	78.4–96.4	89.4	5.6
Female	40 (91%) inc. 3 ?female & 5 ??female	73.6–99.3	85.5	8.4
	32 (73%) securely sexed only	73.8–98.7	86.1	8.1
	Platycnemic Index			
Male	20 (77%) inc. 4 ?male & 2 ??male	65.9–98.1	74.8	7.6
	14 (54%) securely sexed only	66.4–80.6	75.6	8.4
Female	39 (87%) inc. 4 ?female & 3 ??female	64.1–99.2	74.2	7.4
	32 (73%) securely sexed only	64.3–99.2	74.6	7.7

Isles (Brothwell 1972, 91). The relatively short ranges and low standard deviations within the West Butts group is probably indicative of greater homogeneity within the cemetery population compared, for example, with those from Spitalfields.

A summary of other post-cranial indices is presented in Table 25. The indices show a fairly close correlation between the sexes. The brachial index ranges are much shorter than those from Spitalfields and the overall means lower. The range for the crural index is higher than at Spitalfields as is the mean, while the means for the intermembral index is similar (Molleson and Cox 1993, table 2.10).

Sexual dimorphism as expressed in the general size and robusticity of the bones was discussed above and has been further illustrated in this section. Although no specific study of the strength of the various ligament/muscle attachments was undertaken as part of this analysis, comment on the robusticity of attachments are incorporated in the archive. As a general observation the muscle attachments of the upper limb bones, in both males and females, were usually relatively well pronounced; this is particularly true of the deltoid and to a lesser extent, the pectoral attachments of the humerus. Although some individuals – predominantly males – did have strong lower limb and pelvic attachments, this was not a prominent characteristic within the assemblage.

Table 25. Summary of other post-cranial indices (securely sexed individuals only, left limb)

Index	*No.*	*Range*	*Mean*	*SD*
Brachial (radius L x 100/humerus L)	10 M	68.4–78.5	73.0	2.9
	16 F	68.4–75.8	72.0	2.0
Crural (tibia L x 100/femur L)	13 M	75.7–82.4	79.2	2.0
	19 F	76.0–85.6	79.0	2.7
Intermembral (rad. + hum. x 100/ tib+fib.	8 M	65.9–69.8	68.3	1.2
	11 F	61.4–70.4	66.3	2.6

Non-metric traits/morphological variations

Variations in the skeletal morphology may, with other predisposing factors, indicate genetic relationships within a 'population', though there are problems with the uncertain heritability of some traits (Berry and Berry 1967, Tyrrell, pers. comm.) and others have been attributed to developmental abnormalities (Brothwell 1972, 92, 95–8; Molleson 1993, 156). A summary of the presence/absence of the standard recorded variations is presented in Table 26; various others observed during analysis are recorded in Appendix II.

Duplication of more than one of the less common traits was observed between a few individuals, for instance, ossicles at the lambda and parietal notch bones (178 and 236), metopic suture, and patella vastus notch (252 and 302), and metopic suture and epiteric bones (148, 224, and 245A), but the evidence was insufficient to suggest direct links between individuals. Some of the rarer variants, such as non-fusion of neural arches (C1 in 351 and 243, C7 in 280 and 175, and T1 in 302 and 178; Fig. 36) may be suggestive of a genetic link but in the absence of supportive evidence this remains speculative. The spatial distribution within the cemetery of individuals with shared traits may have provided supportive evidence for 'family plots' but the data are not forthcoming in this respect. Distribution plots of some of the less common traits illustrated how, with a few possible exceptions, most were spread across the cemetery with little indication of spatial links between them.

The adult male and the infant (367a and b) redeposited in cut 365 in the centre of the cemetery both have an ossicle at the lambda, as do two adults, one *in situ* and one redeposited in the same grave (grave 176). Two adult females (378 and 393) showing similar impaction of the permanent maxillary canines (Fig. 36e and f) were buried in close proximity to one another in the south-west of the cemetery, though in separate rows (graves 376 and 391). Two individuals with a sixth lumbar vertebrae were also buried in close proximity to each other in the south-east of the cemetery (graves 309 and 173; same row, different alignment). Three individuals in one short line of graves in the south-western half of the cemetery have metopic sutures (graves 129, 335, and 300), but others with this trait were spread across the cemetery. It is likely that at least some of these individuals shared a familial relationship.

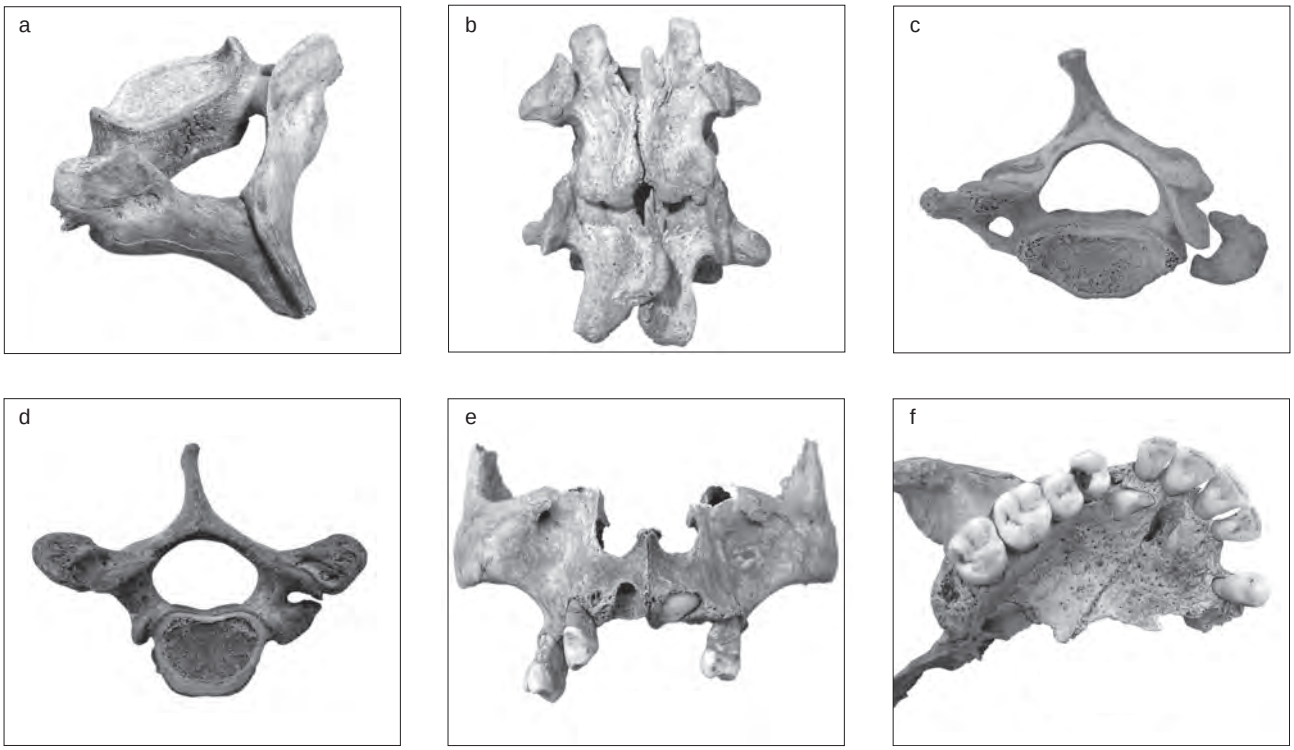


Figure 36 Non-metric traits: a) 280 (adult female) C7 spinal non-fusion; b) 409 (adult female) dorsal view of T12–13 (supernumery thoracic) showing spinal non-fusion; c) 175 (adult male) superior view C7 showing non-fusion transverse process; d) 178 (adult female) superior view of T1 showing transverse foramen; e) 370 (adult female) anterior view of maxilla showing impacted canines; f) 393 (adult female) palatial view of maxilla showing impacted canines

Pathology

Appendix II contains a summary of the pathological lesions observed and the bones affected. Some pathological changes were observed in *c.* 85% of the population including all except nine of the individuals from *in situ* deposits (89%). The majority of those for whom no lesions were recorded were immature, mostly under 5 years old.

Dental disease

A total of 77 deciduous teeth and 57 deciduous tooth positions were recorded, and 956 permanent teeth and 1682 permanent tooth positions (Table 27). Both the deciduous and permanent dentitions contained more mandibular than maxillary teeth, but more maxillary socket positions were recorded in the deciduous dentitions and more mandibular in the permanent.

Attrition

Dental attrition was very low. Young adult dentitions (*c.* 18–30 yr) show only slight polishing of the tooth enamel with negligible exposure of dentine in the incisors and one or two molars. Adults in the *c.* 30–45 yr range may show slight–moderate polishing in all tooth crowns with only moderate exposure of dentine in the incisor crowns and slight exposure in some premolar/molar crowns. Rates of attrition in the older adult ranges will be have been biased by the high rates of dental caries and *ante mortem* tooth loss (see below) leading to variable abnormal loading on the remaining teeth.

Calculus

Dental calculus (calcified plaque/tartar) harbours the bacteria which predispose to periodontal disease and the development of dental caries. Calculus deposits were observed on eight of the deciduous teeth from one dentition (8/77, *c.* 10% of deciduous teeth), and 68% of teeth from 49 permanent dentitions (Tables 27 and 28). These figures represent a minimum; deposits were commonly observed as 'tide-marks' on the tooth crown, the full thickness of the deposit having dropped away during excavation or post-excavation processing. Inevitably, in some cases no evidence for deposits will have survived. The record of the severity of the condition is frequently incomplete or under-estimated for the same reason. On the bases of the available evidence, the rates of occurrence are higher in the males than in the females, at 65–7% for the females (securely sexed and all levels) and 77–85% in the males.

Where the severity of the deposit could be observed the majority (38%) were heavy, 18%

Table 26. Scoring of non-metric traits (F = female; M = male; u/s = unsexed)

Trait	*Presence*		*Absence*	
	left	*right*	*left*	*right*
		Cranial		
Metopic suture	F3: M4		F41: M25: u/s 5	
Supra-orbital notch	F12: M14	F10: M13: u/s 1	F25: M10: u/s 4	F24: M13: u/s 3
Supra-orbital foramen	F22: M11: u/s 4	F24: M13: u/s 4	F16: M13	F12: M13
Infra-orbital sutures	F7: M3: u/s 1	F9: M3: u/s 2	F14: M11	F14: M9
Multiple infra-orbital foramina	F2: M1	F1	F16: M10: u/s 1	F17: M10: u/s 2
Zygomatic-facial foramina	F32: M18: u/s 3	F31: M18: u/s 2	F3: M4	F5: M4
Parietal foramen	F23: M15: u/s 2	F24: M18: u/s 2	F17: M12: u/s 1	F13: M9: u/s 1
Sutural bones:				
lambda	F2: M6: u/s 1	F2: M6: u/s 1	F36: M20: u/s 4	F36: M20: u/s 4
lambdoid suture	F13: M12: u/s 1	F13: M11	F23: M14: u/s 4	F24: M16: u/s 3
bregma	F1: M1	F1: M1	F37: M25: u/s 3	F37: M25: u/s 3
coronal	F2	M1	F35: M24: u/s 2	F36: M25: u/s 3
epipteric	F2: M2	F3: M2	F18: M11	F17: M11
parietal notch	F1: M3	F5: M2	F26: M13	F24: M16
asterion	F2: M2	F4: M2	F26: M15	F26: M16
Posterior condylar canal	F14: M8: u/s 5	F14: M6: u/s 4	F9: M8	F7: M13
Hypoglossal canal divided	F2: M4: u/s 3	F5: M2: u/s 1	F29: M14: u/s 2	F25: M16: u/s 3
Double condyle facets	F2: M2: u/s 1	F3: M1: u/s 1	F30: M19	F30: M19
Pre-condylar tubercle			F25: M21: u/s 2	
Auditory exostosis (torus)	F3	F1	F33: M21: u/s 3	F34: M23: u/s 3
Mastoid foramen	F17: M12	F21: M10	F9: M7: u/s 1	F9: M7: u/s 1
Plural mental foramen			F34: M24: u/s 4	F34: M24: u/s 5
Mandibular torus	F1: M1	F1: M1	F36: M23: u/s 4	F36: M23: u/s 5
Myohyoid bridge			F33: M22: u/s 3	F31: M23: u/s 4
Palatine torus	F5: M1	F5: M1	F32: M18: u/s 3	F32: M18: u/s 3
		Post-Cranial		
Axial Skeleton				
Atlas bridging: a) posterior	F2: M1	F2: M1	F26: M16: u/s 4	F26: M16: u/s 4
b) lateral			F28: M18: u/s 1	F28: M18: u/s 1
Accessory transverse foramen	F19: M8: u/s 2	F19: M8: u/s 2	F8: M3	F8: M3
Acetabular crease	F4: M1	F5: M1	F38: M18: u/s 1	F37: M20: u/s 1
Accessory sacral facets			F22: M11	F22: M12
Upper Limb				
Acromion articular facet	F12: M9	F14: M9	F7: M4	F6: M4
Suprascapula foramen			F7: M4: u/s 1	F7: M5: u/s 2
Circumflex sulcus	M2	F1: M1	F28: M20: u/s/ 1	F28: M21: u/s 2
Supra-condyloid process	M1	M1	F40: M24: u/s 4	F46: M24: u/s 3
Septal aperture	F1: M1	F2	F36: M11: u/s 4	F40: M25: u/s 3
Lower Limb				
Allen's fossa	F8: M2	F8: M4	F20: M14	F19: M11
Poirier's facet	F2: M4	F3: M4	F24: M11	F23: M10
Plaque			F27: M15	F27: M14
Hypotrochanteric fossa			F41: M20	F42: M21: u/s 1
Exostoses in trochanteric fossa	F9: M11	F12: M12	F25: M9	F21: M8
Third trochanter	F1: M1	F1: M1	F40: M19	F41: M20: u/s 1
Squatting facets:				
a) medial	F1: M3	F1: M3	F19: M13: u/s 1	F21: M13: u/s 1
b) lateral	F12: M2	F12: M4	F31: M15: u/s 1	F31: M15: u/s 1
Vastus notch	F4: M2	F5: M2	F29: M13	F29: M16: u/s 1
Os trigonum	F2: M4	F2: M4	F30: M13: u/s 1	F37: M13: u/s 1
Medial talar facet	F1	F1	F30: M17: u/s 1	F37: M17: u/s 1
Lateral talar extension	M2	F2: M2	F31: M13: u/s 1	F36: M13: u/s 1
Inferior talar articular surface	F29: M15: u/s 1	F36: M16: u/s 1		
Anterior calcaneal facet double	F25: M14	F25: M12: u/s 1	F14: M3: u/s 1	F13: M4: u/s 1
Anterior calcaneal facet absent	F2: u/s 1	F2	F36: M17	F36: M16: u/s 2
Peroneal tubercle	F8: M4: u/s 1	F9: M3	F16: M11	F16: M10

Table 27. Summary of permanent dentitions by sex

	Max. teeth	*Man. teeth*	*Total teeth*	*Max tooth positions*	*Man. tooth positions*	*Total tooth positions*
Female (secure sexing)	230	261	491	386	448	834
Female (all levels)	271	298	569	514	572	1086
Male (secure sexing)	140	163	303	189	251	440
Male (all levels)	159	194	353	238	320	558
Unsexed	17	17	34	18	20	38
Total	447	509	956	770	912	1682

medium–heavy, 24% medium, 13% slight–medium, and 10% slight (scored according with Brothwell 1972, fig. 58b). The heaviest lesions were seen in three male and ten female dentitions suggesting, contrary to the observation made above, that females were at least as if not more prone to the condition (Fig. 35a and b). There was clearly an increase in severity with age, most of those with heavy deposits being over 45 years. The frequency of the condition in the older adult age ranges is likely to be skewed due to the high rates of *ante mortem* tooth loss (see below).

The overall calculus rate at West Butts is considerably higher than the *c.* 21% given for the period by Roberts and Cox (2003, table 6.16) but almost the same as that shown for two of the sites in the sample; it is possible that rates from some of the sites are underestimated for the reasons outlined above. Similarly high rates were observed in recently examined material from St Martin's, Birmingham, *c.* 63% population and rate *c.* 77% (Brickley 2006, 143), and from the Baptist and Quaker cemeteries in King's Lynn with rates of *c.* 85% and *c.* 74% respectively (Boston 2005, table 5).

Periodontal disease

Periodontal disease is a gum infection (gingivitis) which may lead to bone resorption with consequent loosening of the teeth and exposure of more of the tooth surface to caries attack. Lesions reflective of the condition were observed in nine female and eight male dentitions (15% of individuals), and included individuals across the adult age range. Most of those with the condition were moderately affected (42% scored at 2–3; scoring according with Ogden 2005), with *c.* 35% slightly affected (scoring 1–2) and 23% heavily affected (score 3–4). Lesions were most frequently observed around the molar sockets with involvement of one or more sockets but never all (Fig. 35b).The percentage of individuals affected is close to the average of 13% for the period (Roberts and Cox 2003, table 6.12), but it is possible that the high rates recorded for individual sites within the sample may reflect differences in definition and recording of the condition (Whittaker 1993, 49–50) and the relevance of comparisons may be limited.

Ante mortem *tooth loss*

Ante mortem tooth loss was observed in 49 (68%) adult dentitions including 33 female (75%) and 16 male (61%). The overall rate (permanent dentitions) is 35% with similar involvement of mandibular (34%) and maxillary (37%) teeth (Table 28). The molar teeth were primarily affected (rates 41–61%), the highest rate being seen in the mandibular right M2. Rates in the premolars and incisors vary between 19% and 38%, with the lowest rates in the canines (15–22%); the mandibular canines being the least affected. The rates are higher in the female dentitions compared with the males by 7–12% depending on whether the figures are derived from the securely sexed individuals only (27% and 20% respectively) or from all categories (40% and 28% respectively). Although the frequency of the condition increases with age, tooth loss shows an early on-set with most adults showing the loss of one or more teeth by the age of 40 years, some by as young as 25 years. Tooth loss was extensive in the older adult ranges, a minimum of four individuals (three females, one male) having lost all their teeth with a consequent reduction in both maxillary and mandibular alveolar height (Fig. 35c). Six others may also have lost all their teeth but there was incomplete survival of the supportive structure and their condition is not conclusive.

The percentage of individuals affected within the assemblage (49%) is lower than that noted for other cemeteries of this period (*c.* 60% overall), but the rate of tooth loss is considerably higher than the overall figure of *c.* 23% (Roberts and Cox 2003, table 6.1); though two cemeteries (the Quaker burial ground at Kingston upon Thames and St Nicholas', Sevenoaks) in the sample show similarly high rates (*ibid.*). The overall rate is also higher than that of *c.* 27% for the recently examined St. Martin's cemetery (Brickley 2006, 139), being close to the rates for the King's Lynn Baptist group (*c.* 33%) but lower than that from the Quaker group (*c.* 54%; Boston 2005, table 5).

Caries

Dental caries, resulting from destruction of the tooth by acids produced by oral bacteria present in dental plaque, were recorded in four deciduous dentitions (8/77 teeth, *c.* 10%: Fig. 35d and e) and 44 permanent dentitions (48% individuals), the latter including all three subadults, 25 adult females (57%), and 16 adult

Table 28. Summary of dental lesions (permanent dentitions)

	Calculus	Ante mortem *tooth loss*	*Caries*	*Abscess*	*Hypoplasia*
Female (secure sexing)	318	277	92	87	121
	(128 max.)	(131 max.)	(52 max.)	(28 max.)	(48 max.)
	(190 man)	(146 man.)	(40 man.)	(59 man.)	(73 man.)
Female (all levels)	379	440	103	98	126
	(159 max.)	(219 max.)	(57 max.)	(32 max.)	(53 max.)
	(220 man.)	(221 man.)	(46 man.)	(76 man)	(73 man.)
Male (secure sexing)	258	89	39	15	83
	(106 max.)	(32 max.)	(21 max.)	(9 max.)	(30 max.)
	(152 man.)	(57 man.)	(18 man.)	(6 man.)	(53 man.)
Male (all levels)	271	156	56	20	90
	(111 max.)	(63 max.)	(30 max.)	(12 max.)	(31 max.)
	(160 man.)	(93 man.)	(26 man.)	(8 man.)	(59 man.)
Unsexed	3	–	4	–	–
	(2 max.)		(1 max.)		
	(1 man.)		(3 man.)		
Total	653	596	163	128	216
	(272 max.)	(282 max.)	(88 max.)	(44 max.)	(84 max.)
	(381 man.)	(314 man.)	(75 man.)	(84 man.)	(132 man.)

males (61%; Table 28). Between one and nine lesions were observed in individual dentitions, the highest number being recorded in a female of 40–50 years (124). The overall caries rate in the permanent dentitions is 17%, with a higher rate of 20% for the maxillary teeth compared with 15% for the mandibular. The rates for the females are slightly higher than for the males (a common observation; Hillson 1986, 287) at 19% compared with 13% for the securely sexed individuals, and 18% compared with 16% for all categories. Carious lesions were observed across the adult age ranges, several subadults and young adults having severe lesions where the tooth crown was totally destroyed (Fig. 35e). Caries was probably the major reason for *ante mortem* tooth loss; other than where there had been complete *ante mortem* tooth loss, all the dentitions with the condition also had some carious lesions. Although there was a general increase in the number of lesions per dentition with age, the high rates of *ante mortem* tooth loss will have skewed the caries rate in the old adult ranges.

In many cases (*c.* 43%) the tooth crown had been totally or almost totally destroyed and the origin of the lesion could not be ascertained. Where sufficient of the tooth crown did survive the majority of the lesions were occlusal (*c.* 25%) or approximal (*c.* 24%) in origin, the latter being more common in the anterior teeth and the former in the molars. There are a few cases where the lesion is in the cervical area (*c.* 5%), and a small proportion where the lesion is in the buccal fissure of the molar (*c.* 1%). Although most teeth appeared to have single lesions, up to three separate pinhole-sized lesions were observed in one molar in several cases. The pattern is similar to that noted in the Spitalfields collection (Whittaker 1993, 53). Although the molar teeth seem to have been primarily affected, in some dentitions the premolars and/or incisors were the first teeth to be affected. The highest rate was seen in the mandibular right M1 (42%), and the lowest in the maxillary right I1 and mandibular left P2 (3% each).

The percentage of individuals affected (CPR) and the overall rate are both higher than the average figures for the period of *c.* 43% and *c.* 11% respectively (Roberts and Cox 2003, table 6.13), the rate being closest to two of the London sites within the sample, Spitalfields and Broadgate (*ibid.*). The CPR is close to that of *c.* 51% from the recently examined St Martin's material, though the overall rate for the latter is lower at *c.* 10% (Brickley 2006, tables 109 and 110). There is closer correlation with the King's Lynn Baptist group with a rate of *c.* 19%, the rate for the Quaker group being higher at *c.* 36% (Boston 2005, table 5).

Abscesses

Dental abscesses are commonly associated with gross carious lesions; infection tracking down through the exposed pulp cavity of the tooth into the supportive structure (Hillson 1986, 316–18). Lesions were recorded in one deciduous dentition (1/57, rate *c.* 2%; Fig. 35d) and 37 permanent dentitions (38% individuals), the latter including 26 (59%) adult females and 10 (38%) adult males (Table 28). The overall rate (permanent dentitions) is 6%, with greater involvement of the mandibular (9%) compared with the maxillary (6%) sockets. The rates are higher in the females (7%) than in the males (3–4%), with little or no variation between the figures for the securely sexed individuals and all categories. Amongst the females, the rate for the mandibular sockets is almost twice that for the maxillary (*c.* 13% compared with 6–7%), whilst in the males the situation is reversed (2% mandibular compared with 5% maxillary). Abscesses were seen in all tooth positions except the maxillary right M3, with

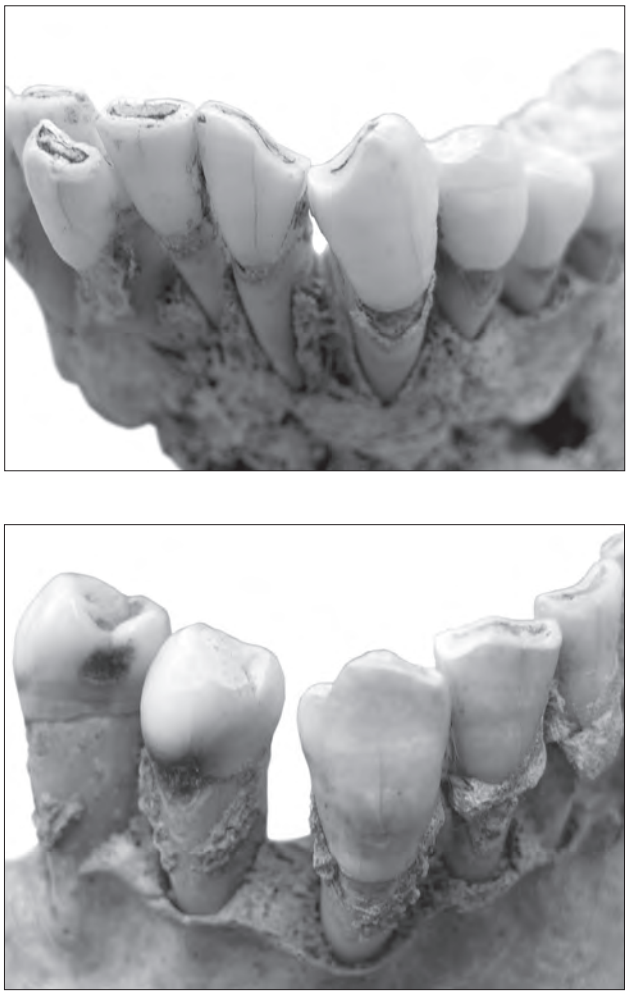
other low rates (2%) in the mandibular left C and I2 and the right P1. The highest rate was seen in the maxillary left I2 (15%), with other high rates in the maxillary incisor and premolar sockets (10–13%). The severity of lesions varied from relatively small diameter lesions in socket apices, to large lesions exiting buccally or, in several maxilla, superiorly into the antrum, with the spread of infection to the soft tissues or the sinuses (see pp. 86–8). Infection from one socket had in some cases also tracked distally or mesially into an adjacent socket, and in one case (243) a mandibular lesion had tracked into the canal in which coarse woven new bone was evident and the mental foramen enlarged.

The CPR is considerably higher than the average of 14% for the period, the closest within Roberts and Cox's sample being from Cross Bones, London with *c.* 31% (2003, table 6.14). The overall rate is also higher than the average of *c.* 2% for the period, with much lower rates throughout the sample other than from Spitalfields with a rate of *c.* 12% (*ibid.*). The rates from recently analysed material at St Martin's (Brickley 2006, 142) and the two King's Lynn burials grounds (Boston 2005, table 5) are also low at *c.* 3%, 1.5% (Baptist) and >1% (Quaker) respectively.

Dental hypoplasia

Dental hypoplasia is a condition represented by developmental defects in the tooth enamel formed in response to growth arrest in the immature individual, the predominant causes of which are believed to include periods of illness or nutritional stress (Hillson 1979). Lesions were seen in one deciduous dentition (2/77, *c.* 3%) and 47 permanent dentitions (CPR 48%) the latter including five immature individuals, 27 adult females (61%), and 15 (58%) adult males (Fig. 37). The overall rate within the permanent dentitions is *c.* 23%, with lesions recorded in more mandibular (26%) than maxillary teeth (19%). The condition seems to have been slightly less common in the females compared with the males (*c.* 23–5% compared to 26–7%), the greater number of mandibular teeth with lesions being consistent throughout. The rates are all likely to be minimum since enamel defects could be masked by calculus deposits and gross caries; tooth loss is also likely to have contributed towards minimising the number of individuals with the condition. Lesions were most frequently seen in the anterior tooth crowns (incisors, premolars and canines), the highest rate being in the mandibular canines (47–53%). No lesions were seen in the mandibular left M1. None of the lesions was severe, generally showing as 1–4 faint-moderately pronounced lines in the enamel.

The potential significance of these observations needs to take into account the possible skewing caused by tooth loss, caries, and calculus deposits, but on the available data it appears that the 2nd–6th years represented those in which most children were potentially under greatest stress.



Fgure 37 Abnormal dental wear (anterior mandibular) and hypoplasia: 367 (adult male) and 370 (adult female)

An individual's immune system does not reach maturity until they are around 6 years old (Lewis 2007, 6.4). The neonatal and young infant gains immunity to bacterial and parasitic infections from the mother's breast-milk (*ibid.*, 6.2). Weaning potentially leaves infants open to attack by pathogens and may also lead to nutritional stress which further weakens the child's ability to resist disease (*ibid.*, 6.3). The mean weaning ages in the 17th and 18th centuries fell from 18 months to 7.25 months (*ibid.*, 6.4). The age range indicated by the lines of hypoplasia in the West Butts population corresponds closely with that which lies between the age of weaning and development of the immune system, and may illustrate the particular heightened susceptibility of individuals within this range to various forms of infection. The apparent lower end of the West Butts range, at 2 years, may also suggest that most infants within the catchment group benefited from the later age of weaning.

Roberts and Cox were able to find limited data on the condition for the period, giving an overall rate of less than 1% from the two sites in their sample (2003, table 6.17). In more recent analyses, Brickley found a higher overall rate of *c.* 31% in the permanent dentitions from St Martin's (2006, 144), higher rates still being recorded from the King's Lynn Baptist (*c.* 61%) and Quaker (*c.* 42%) burials grounds (Boston 2005, table 5).

Diet and dental health

There is a tendency in the modern perception of the later 20th–early 21st century, with our easy access to well qualified dentists, antibiotics, and toothpaste, to underestimate the importance of oral health to the general well being. In addition to the gross discomfort, disabling, debilitating, and socially detrimental effects of many of these conditions – immense pain, feebleness, reduced efficiency of the immune system which comes with an infection, and inability to eat properly, all being accompanied by particularly bad breath – dental infections could, and frequently did, lead to the death of individuals (Mays 1998, 148–9). In a letter to his son, published in 1774, Lord Chesterfield advised:

> 'A dirty mouth has real ill consequences to the owner, for it infallibly causes the decay, as well as intolerable pain of the teeth; and it is offensive to his acquaintance, for it will most inevitably stink'. (Woodforde 1983, 31)

In the London Bills of mortality for 1775, 'teeth' is listed as the cause of death of 694 individuals, coming below only 'convulsions' (5177), 'consumption' (4452), 'smallpox' (2699), 'scarlet/purple spotted fever' (2244), 'aged' (1297), and 'dropsie' (accumulation of fluid in the body tissues; 865; Roberts and Cox 2003, table 6.1). The death rate from 'teeth' in 18th century London – probably reflective of the general national trend – ranged from *c.* 5% to 2%, decreasing over time (Roberts and Cox 2003, graph 6.10).

The condition of the teeth from West Butts gives insights into the congregation's diet and, potentially, reflects something of their social status. In common with the times, oral hygiene in general appears to have been fairly minimal. Toothbrushes, although available in the 18th century, were not common and most oral hygiene consisted of rubbing the teeth with some form of whitener (Roberts and Cox 2003, 324); though there is no evidence from West Butts for the sort of labial abrasion which may result from use of the more caustic whiteners (*ibid.*, fig. 6.15). The comparatively low levels of dental hypoplasia suggest relatively well-nourished children, who were doubtless subject to the same childhood diseases as seen elsewhere but who may have fared better than some of their contemporaries. The impression lends some support to the evidence of the apparent demographic profile suggesting lower infant/juvenile mortality than that seen in other cemeteries of this date subject to analysis.

The very low attrition rates and relatively high rates of calculus implies a non-self-cleaning diet rich in refined carbohydrates requiring minimal mastication. Such a diet would encourage high rates of caries and the other dental conditions that may lead to (Hillson 1986, 286–99; Whittaker 1993, 51–3). Whilst the progressive increased refining of carbohydrates, such as wheat flour, was undoubtedly a contributory factor to such diets, the increased consumption of refined sugars is also commonly seen as a major part of the problem (*ibid.*). There was a dramatic increase in sugar imports from about 1700 and, although it remained an expensive luxury in the earlier part of the century and most accessible to the wealthier classes in any quantity, sugar use was very high in the 18th century and was considered a core ingredient in everyday meals (Whittaker 1993, 52; Molleson and Cox 1993, 47; Musgrave and Musgrave 2000, 39). Its use was probably still limited amongst the poor until the removal of import duty in 1845 made it more affordable (Hillson 1986, 298).

The sugar trade was dominated by politically powerful merchants in Bristol, Liverpool, and London, but at least one Poole merchant, Samuel White, was sufficiently influential to be involved in the trade (Davies 1994). While most such imports are likely to have been rapidly moved on to ports with sugar refineries, such as nearby Southampton (Platt and Coleman-Smith, 1975, fig. 63), one wonders if some cheaper concessions were available in the town as a result, rendering sugar more easily accessible to the poorer members of society. Alternatively, the West Butts congregation may have largely comprised individuals who, whilst far from being wealthy, were sufficiently affluent to afford easy access to such commodities. Brown observes that wealthy people were scarce amongst the 18th century Baptists, who were mostly from rural areas, unaccustomed to travel and literature (1986, 10–11).

However, Poole's seaboard location, with potentially easier access to travel – the sea being a considerably easier option than many of the roads at that time (*ibid.*) – and a generally more mobile population, may have led to the Baptists there having more in common with the '... intelligent and polite congregation in a city ...' (contemporary description, *ibid.*), comprising a wider social mix. In the latter part of the 18th century the General Baptists adopted a firm stand against the slave trade and, by association, the sugar trade, and the use of sugar was boycotted by Wesley and his followers amongst others (Brown 1986, 102). If such a policy was adopted by the Baptists in

Poole it appears to have come too late to save the teeth of most of those buried within the cemetery.

There are no indications of dental fillings or dentures amongst those buried at West Butts as have been recovered from several contemporaneous cemeteries – Spitalfields, St Martin's, St Nicholas', Sevenoaks (Brickley 2006, 139), and the King's Lynn Baptist cemetery (Boston 2005). At least parts of all these cemeteries extended further into the 19th century than that at Poole appears to. It may be that most if not all of the West Butts individuals died before common usage of such techniques (mid-19th century onwards) or that they were not sufficiently prosperous to be able to take advantage of such treatments which, in the 18th century, were expensive and the preserve of the rich (Roberts and Cox 2003, 324). It is possible, indeed probable given the high rates of caries and *ante mortem* tooth loss, that some dental treatment was obtained in the form of tooth extraction; a common recourse when the agony of toothache had reached unbearable levels the relief from which would render the pain of removal tolerable if not welcome (Molleson and Cox 1993, fig. 4.1). In the 18th century such operations were undertaken by a barber-surgeon who could lance abscesses, clean (de-scale), and extract teeth (Whittaker 1993, 50; Roberts and Cox 2003, 321–4, fig. 6.10):

> His pole with pewter basons hung
> Black rotten teeth in order strung,
> Rang'd cups, that in the window stood,
> Lin'd with red rags to look like blood,
> Did well his threefold trade explain,
> Who shav'd, drew teeth, and breath'd a vein
> John Gay (1685–1732)
> (from Woodforde 1983, 32–3)

Numerous 18th century cartoons of tooth-drawers reflect the obvious distress of the patient and, often, of the practitioner trying to resist the involuntary attacks of the patient, and there are numerous records of both ending up in an undignified heap on the floor (Woodforde 1983, 34–40).

Dental anomalies

Uneven wear facets were observed in several dentitions, some of which were the result of uneven occlusion, others probably to inequalities in the pressures of mastication possibly related to one or more of the above conditions, and some to cultural activity. There are at least three clear cases of the latter. In skeleton 131 (*c.* 45–55 yr male) there is uneven wear in the anterior mandibular teeth creating a concave surface extending from the canines down to the first incisors. The feature seems too large to have been caused by a pipe, but is likely to be activity-related in some way. A facet of abnormal wear in the maxillary left I2-C in skeleton 367 (*c.* 30–40 yr male) may have been formed by a pipe, creating a 5.3 mm meso-distal, 2.5 mm deep sub-circular opening (Fig. 37). The mandible from skeleton 370 (*c.* 35–55 yr female) has a small, 1.5 x 2.2 mm, 'nick' in the distal side of the right canine with associate heavy, mesially-angled occlusal wear in the medial portion of the adjacent P1 crown, and there is also a slight 'nick' in the apex of the right maxillary canine. The modification is such as may have been formed by the repeated drawing of coarse fibres or thread between the teeth (Fig. 37).

Congenital absence of one to all four third molars was recorded in 16 dentitions including nine female and seven male. Rotation and or displacement of one or more teeth – commonly the anterior teeth – was observed in 32 dentitions. Overcrowding of teeth and congenital absence is generally the product of a mandible and/or maxilla of insufficient size to accommodate the full dentition. On an evolutionary scale, this 'shortening' of the jaw is linked with the progressive decline in the pressures exerted during mastication with the increased processing of foods (Larsen 1999, 242–7). This change in diet has also been linked with an increase in overbite, overjet, and impaction, several cases of which have been observed at Poole (see pp. 67–8).

Minor variations in tooth crown form including shovelling of the maxillary incisors, 'pegging', 5-cusp form to the mandibular M2 and numerous cusp, fissure, and shape variants in the third molars (especially maxillary) were recorded. Although such non-metric variants are believed likely to have broad genetic links, this is still poorly understood and the factors affecting such characteristics are likely to vary between different population groups (Hillson 1986, 272).

Congenital conditions

A few minor congenital variations, which are unlikely to have had any noticeable consequences for the individual, have been included with non-metric traits/morphological variations discussed above (Appendix II). These include several case of transitional vertebrae (Aufderheide and Rodríguez-Martín 1998, 65–6); eg, cervicothoracic (skeleton 408), thoracolumbar (skeleton 242), and lumbosacral (skeleton 409).

Three individuals showed evidence of ankylosed scoliosis (lateral curvature of the spine). Scoliosis has multiple aetiologies and is often linked with congenital spinal malformations (Adams 1986, 196–201; Aufderheide and Rodríguez-Martín 1998, 66–7). One of the cases from West Butts is likely to reflect a severe case of rickets (see below) but the two others remain of uncertain aetiology since neither has sufficient conclusive characteristics of described conditions and diagnosis is further hampered by incomplete skeletal

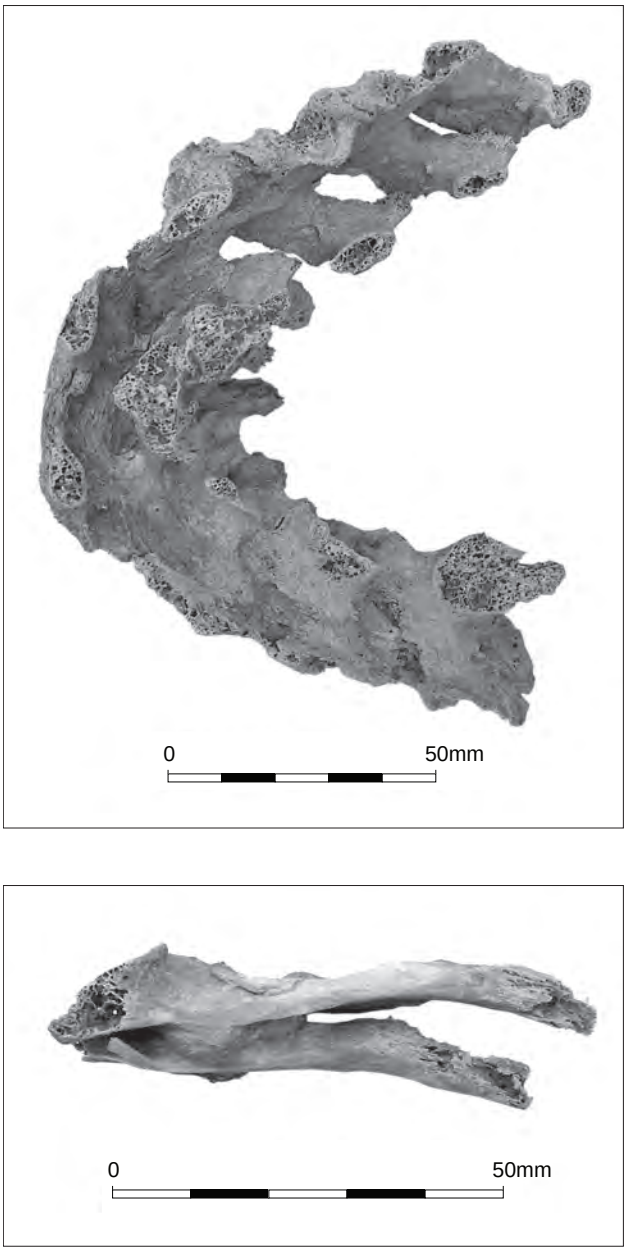


Figure 38 Scoliosis: 218 (adult female) ventral view T2–10 with ankylosis (vertebral bodies destroyed post mortem); 6th–7th left ribs fused and remodelled

survival. Osteomalacia or osteoporosis (see below) could be the cause of changes in the case of 218, from which the vertebral bodies are absent, but the aetiology of 221 remains uncertain.

Much of the trabecular bone, including the vertebral bodies, is missing from Skeleton 218 (*c.* 35–45 yr female; *c.* 74% recovery). There is smooth bony fusion between T2–10 via the dorsal articular joints with acute, *c.* 105–120° scoliosis to the left and very slight kyphosis (possibly indicative of anterior rotation). All are fused via the spinal process, the T2–T6 also being fused via the right articular processes and T6–T10 via both articular processes (Fig. 38). There is associated fusion between the left sixth–seventh ribs via a 17 mm length of smooth new bone. This woman would have been severely disabled by the extensive spinal angulation, considerably restricting her movement and breathing, and probably rendering her largely housebound and dependant.

The cervical and three upper thoracic vertebrae from skeleton 221 (*c.* 55–70 yr ??male) are missing (*c.* 85% skeletal recovery) but there is ankylosis between the T4–5 and T6–8 via smooth bony fusion down the left sides of the bodies and the articular process joints of the former. The vertebral bodies show no destructive lesions or osteoporosis and the disc spaces are maintained. There is moderate scoliosis to left side by *c.* 45° over five vertebrae. The left rib facets are just maintained but remodelled with degenerative lesions.

Trauma

Fractures to bone were seen in the remains of 10 individuals including one infant (*c.* 4% immature individuals) and nine adults (*c.* 12%); the latter includes five females (*c.* 11%) and four males (*c.* 15%). Five individuals had fractures to more than one bone, including all four males and one adult female; in at least three cases the fractures are likely to have been sustained in the same traumatic event. Table 29 shows the frequency and distribution of fractures; the percentage rates shown should be viewed as an estimate since incomplete fragmentary bones may be missing a fractured section and a skeletal element is not counted as 'present' in the inventory unless represented by about two-thirds.

The infant 145/161/164 appears to have a well-healed greenstick fracture to the left tibia, resulting from slight lateral angulation force imposed on the distal half of shaft (callusing to that side). Although healed, the bone has narrowed medio-laterally and is very slightly bowed laterally with a slight, smooth longitudinal callus in the distal-lateral margin creating

Table 29. Number and location of fractures

Bone	*Infant*	*Adult female*	*Adult male*	*Total*
Nose	–	–	1	1/27 *c.* 3.7%
Rib	–	3 (1 x 2)	4 (1 x 3)	7/946 *c.* 0.7%
Clavicle	–	1	–	1/74 *c.* 1.3%
Radius	–	1	–	1/108 *c.* 0.9%
Fibula	–	1	1	2/48 *c.* 1.2%
Tibia	1	1	1	3/107 *c.* 2.8%
Tarsals	–	–	x 2	2/759 *c.* 0.3%

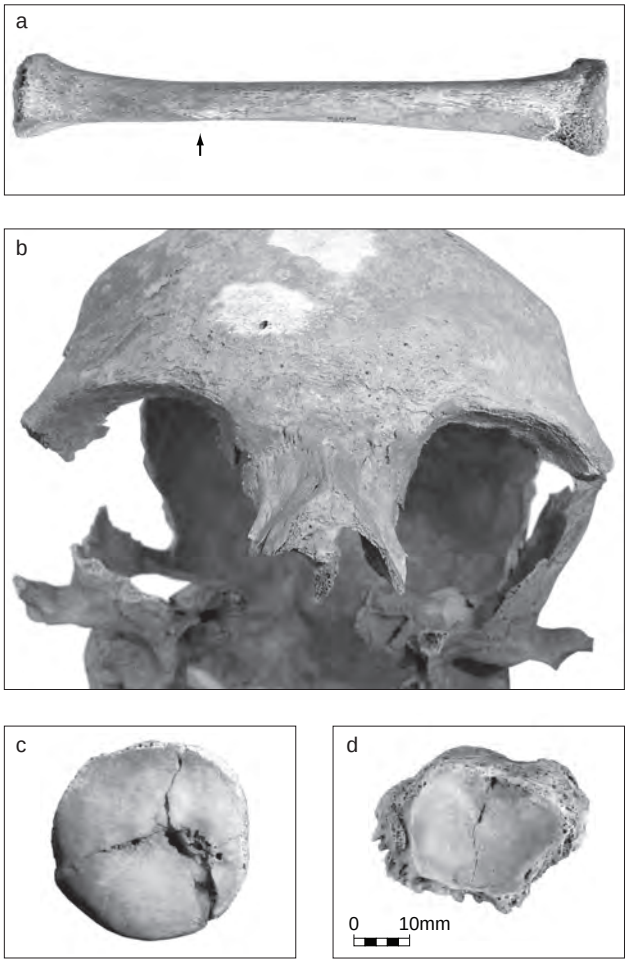


Figure 39 Trauma: a) 161 (infant) anterior view left tibia showing callusing from greenstick fracture; b) 263 (adult male) healed fracture to nasal bone; c) 293 (adult female) superior view of the right radial head showing healed compression fracture; d) 201 (adult male) dorsal view of left navicular showing probable fatigue fracture

an uneven anterior border with slightly squared profile (Fig. 39a).

The adult male 263 has a well-healed fracture to the nose and one left rib, injuries which could have been sustained at the same time. Facial fractures are not common in the archaeological record, though accidental and deliberate blows to the face must have occurred. Poor skeletal survival is likely to be the main reason; the facial bones in general tend to be relatively thin and fragile, and are particularly prone to damage and loss whilst in the burial environment. The nasal bone from 263 shows an abrupt change in angle at the damaged distal end and ossification of nasal cartilage on at least the right side, indicative of a fracture (Fig. 39b).

Well-healed crush fractures to one right rib from 393, two right ribs from 302, and one left and two right ribs from 425 all probably resulted from falls onto hard objects. In the latter case, the involvement of both sides of the rib cage suggests the injuries may have been sustained at different times.

Fractures to the clavicle most commonly result from a fall on the shoulder (Adams 1987, 119). The well-healed fracture to the left clavicle from 147 appears very slightly mis-aligned with slight dorsal rotation of the lateral portion.

The mature adult female 293 has a well-healed fracture to the head of the right radius resulting from compression force exerted by a fall onto the outstretched hand (Fig. 39c); the osteoarthritic lesions seen in the joint surface are a classic later complication of this type of injury (Adams 1987, 155).

The left navicular of the older adult male 201 has an incompletely healed fracture extending posterior-planter across the centre of talus surface, possibly representing a fatigue fracture (Fig. 39d). The bone appears 'squashed' in the planter portion with exostoses (new bone at tendon/ligament insertions) extending across most of planter surface from the *planter calcaneonavicular* ligament attachment. There are also exostoses in the left calcaneum including those extending anteriorly along the *abductor digiti minimi* and *flexor digitorum brevis* attachments, and the short planter ligament attachments. A small fragment (13 x 10 mm) of bone, with no clear form but slightly curved, may represent part of the missing left talus (broken at time of trauma since there are no fresh breaks) from this individual (left leg also missing *post mortem*). Together with other degenerative changes to bones of the left foot (Appendix II), these lesions suggest a fairly major trauma – possibly a fall from some height onto the foot. Plastic changes to the right proximal tibia involving alteration to the angle of the lateral condyle surface – dropped *c.* 10–15° laterally – suggest a long standing injury which lead to a change in the individual's gait.

The left tibia and fibula from 245C (*c.* 45–60 yr male) both have well-healed but mis-aligned fractures in the distal third of the shafts, with slight lateral angulation of the broken segments by *c.* 5–10°. The bones are fused together via a smooth bony callus, *c.* 26 mm proximal-distal, *c.* 100 mm from the distal end. The tibia has a sinus in the dorsal aspect but there is no indication of infection. X-radiographs indicate old, oblique fractures, with 7.6 mm lateral displacement of the proximal portions. Such fractures result from violent trauma involving angulatory force. The same individual has lesions indicative of violent soft tissue trauma in the right shoulder resulting from a heavy fall, probably from some height. There is remodelling and exostoses at the later end of the clavicle associated with the deltoid muscle attachment. A 'bridge' of new bone is set lateral to and mimicking the scapula acromion process, extending across and disabling the facet with the clavicle; the lesions suggest damage to the *trapezius* muscle and coraco-acromial ligament. The

pectoralis major and *latissimus dorsi* attachments of the humerus, are strongly marked and substantially roughened by exostoses; the proximal shaft is angled medially from *c.* 114 mm distal to the head at the lower margins of the intertubercular groove, with no clear indication of a fracture. It is possible that the bending in the shaft reflects plastic changes due to continued strong use of the shoulder musculature following damage to the various muscles and functional failure between the scapula and clavicle. The injuries to the upper and lower limb elements may have occurred at the same time in this large, robust male, or represent separate incidents.

The right proximal tibia and fibula from skeleton 330 (>45 yr female) are fully ankylosed via the inferior portion of the articular surface and a smooth bony callus along the posterior, anterior, and inferior margins. The X-radiograph indicates full integration of the fibula head, with only the faintest of demarcations as to where the original joint lay and no evidence of any fracture line; only the head of the fibula survived so the fracture could have lain slightly further down the shaft.

Evidence for soft tissue trauma was observed in a minimum of four other adults: one female and three males (see also p. 95), all involving the lower limbs. The right tibia and fibula from 191a are fused via a smooth bony callus bridging the anterior of the distal interosseous margin; the fusion is likely to have resulted from rupture of the interosseous ligament. Lesions in the left fibula from 425 suggest similar trauma but without the ensuing fusion.

Trauma resulting in violent rupture to the distal attachments of the *magnus* and *longus adductor* muscles in the right femur from 236 led to the formation of a pronounced smooth, irregular bony callus along the *linea aspera* (100 mm length, max. 13 mm wide, max. 10 mm deep). Marked exostoses and roughening on and around the distal interosseous ligament attachments of the left tibia and fibula from 147 indicate violent rupture of the ligament, probably as a result of combined lateral rotation force and abduction of the ankle joint (Adams 1987, 264), such as may result from a rapid change of direction whilst moving at speed. Patches of largely lamellar periosteal new bone around the site of the injury indicates a soft tissue infection (probably associated) which had mostly healed at time of death.

The aetiology of spondylolysis – involving the loss of bony continuity between the superior and inferior vertebral articular processes – has been a subject of some debate (Adams 1986, 224; Roberts and Manchester 1997, 78; Aufderheide and Rodríguez-Martín 1998, 63–4). Some believe there is an underlying congenital weakness to the condition, which is likely to represent a stress fracture, arguably in the immature individual (Adams 1986, 224). The condition is often asymptomatic but may cause deep lumbar back pain (*ibid.*). A single case was observed at Poole, in an 18 year old female (311) in the L6, a supernumerary vertebra.

Osteochrondritis dissecans, a condition leading to fragmentation and disruption in an articular joint, is generally believed to be traumatic in origin resulting in the obstruction of the blood supply to the affected area and localised necrosis (Rogers and Waldron 1995, 28–30; Roberts and Manchester 1997, 87–9; Aufderheide and Rodríguez-Martín 1998, 81–3; Knüsel 2000, 116). Although the condition is supposedly confined to the convex area of an articular surface, several of the illustrated lesions in some reference works show lesions in surfaces which are strictly more concave than convex (Aufderheide and Rodríguez-Martín 1998, figs 5.5a and c). There are also some workers who question the traumatic origin of the condition, considering it to be an idiopathic metabolic disorder (*ibid.*, 82). Although males are generally more prone to the condition, only one of the five individuals with healed lesions from Poole was male. Three individuals had unilateral lesions in the distal humerus (195, 364 capitulum; 227 trochlear), characteristically a small, 8–9 mm diameter lesion with a smooth, darker bony infill. Two individuals had small circular or oval uni-lateral lesions (311 and 410) in the lateral condyle of the distal femur.

The proportion of individuals sustaining fractures is slightly higher than from Spitalfields where lesions were seen in *c.* 5% of females and *c.* 9% of males (Waldron 1993, 82), which is not particularly surprising given the probable more elevated social position of most of the Spitalfields population. The crude prevalence rate for St Martin's, Birmingham is considerably higher at *c.* 21% for the sample as a whole, and *c.* 30% for the adults (Brickley 2006, 120). Brickley found a notable difference in the rates between those buried in vaults and those in earth-cut graves, the latter representing the poorer members of society and showing a significantly higher rate of fractures (*c.* 14% compared with 23%), the difference being particularly noticeable amongst the females (*ibid.*). The low rates for West Butts suggest that although not necessarily representing the upper members of society in the town, neither was the congregation composed of the poorest and that, in general, they were not involved in activities with a high risk of trauma.

Joint disease

The various forms of joint disease represent the most commonly recorded conditions in archaeological skeletal material. Similar lesions – osteophytes and other forms of new bone development, and micro- and macro-pitting – may be formed as a consequence of one of several different disease processes, some

Table 30. Summary of vertebrae and lesions observed

Vertebra	*Total*	*Osteo-arthritis*	*Schmorl's nodes*	*DDD*	*Osteophytes**	*Pitting**	*Fusion*
C1	62	3	–	–	26	3	–
C2	56	5	–	–	16	4	1
C3	51	5	–	4	14	6	1
C4	52	3	–	6	14	5	2
C5	53	2	–	14	15	2	1
C6	54	1	–	14	14	1	–
C7	55	–	–	10	13	–	–
T1	51	2	–	2	11	4	1
T2	51	5	–	2	12	6	2
T3	49	7	–	1	16	10	2
T4	52	7	–	4	25	12	4
T5	53	8	3	5	27	14	4
T6	52	6	10	5	28	9	4
T7	52	5	10	6	30	11	2
T8	54	3	14	5	27	8	3
T9	55	5	16	4	24	10	3
T10	57	2	12	5	26	12	4
T11	59	3	13	6	28	12	3
T12	58	3	9	5	28	12	1
L1	58	4	7	4	24	5	–
L2	60	2	7	4	20	4	1
L3	61	4	6	7	22	4	1
L4	65	9	5	10	29	8	–
L5	69	11	4	15	37	9	–
S1	70	6	–	14	32	5	–
Total	1409	111	116	152	558	176	40

DDD = degenerative disc disease; * = bone lesions
N.B. minimum numbers as does not include vertebrae from each area not assigned to number (21 cervical, 187 thoracic, 54 lumbar)

also occurring as lone lesions largely reflective of age-related wear-and-tear. Many of the conditions increase in frequency and severity with age; consequently they are commonly viewed as degenerative in nature, though this is an oversimplification, as other factors are frequently involved and some conditions have a more complex, and not entirely clearly understood aetiology.

Tables 30 and 31 summarise the lesions and conditions affecting the various spinal and extra-spinal skeletal elements. Tables 32 and 33 summarise the rates of various conditions in the spine by area, showing the variations between the sexes.

Schmorl's nodes

Schmorl's nodes result from a rupture in the intervertebral disc and the protrusion of the disc material into the vertebral body surface forming a pressure defect, often of irregular shape (Rogers and Waldron 1995, 27). The lesions occur most frequently in the most stressed area of the spine – the lower thoracic and lumbar vertebrae – and stress-related trauma is implicated as a major cause of the condition (Roberts and Manchester 1997, 107).

Lesions were seen in the spines of 25 individuals including 10 adult females (23%) and 15 adult males (58%), with 1–10 (females) and 1–15 (males) vertebrae affected in individual cases. The rates for the males are considerably higher than for the females (Table 32) and illustrate the greater manual stress being placed on the male spines compared to those of the females. The highest rates are seen in the male thoracic vertebrae, the lumbar and thoracic rates being similar for the females. No lesions were seen above T5 and the highest rate is in T9 (29%). There is no indication of an increase in the condition with age, most individuals affected were >45 yr and had 1–11 lesions; however, the highest number of lesions were seen in a 30–45 year old male. The severity of lesions varied from small, slight depressions in the vertebral body surface to large, multi-shaped lesions extending the length and/or breadth of the surface.

The rates are lower than those recorded by Brickley from St Martin's (2006, table 101) where a maximum rate of *c.* 39% was recorded, again in the T9, and from the Cross Bones Cemetery, Southwark (Brickley and Miles 1999, 38) where a maximum rate of 47% was recorded in the male T8. This suggests a lower level of spinal stress in the individuals from the West Butts congregation than from these roughly contemporaneous cemeteries, perhaps in part reflective of a slightly higher social status and involvement in less strenuous manual labour.

Degenerative disc disease

Degenerative disc disease is characterised by coarse pitting in the surface of the vertebral body, invariably accompanied by osteophyte growth on the body surface margins (Rogers and Waldron 1995, 27). The condition results from the breakdown of the intervertebral disc and reflects age-related wear-and-tear.

Lesions were seen in 33 spines: 21 adult female (48%) and 12 adult male (46%), with 1–11 (females) and 1–13 (males) vertebrae affected in each individual. The highest rates were recorded in the first sacral vertebra, followed by the lumbar and cervical, with the thoracic vertebrae begin least affected (Table 33). The rates for males and females are similar (Table 32) but

Table 31. Summary of extra-spinal joints and lesions observed

Joint	*Right*				*Left*			
	Total	*Osteoarthritis*	*Lone osteophytes*	*Lone pitting*	*Total*	*Osteoarthritis*	*Lone osteophytes*	*Lone pitting*
Temporo-mandibular	72	8 (11%)	9	11	76	11 (14%)	12	18
Costo-vertebral (ribs)	462	82 (11%)	58	48	481	63 (13%)	62	46
Sacro-iliac	58	–	26	14	59	–	28	14
Acromio-clavicular	40	3 (7%)	5	15	34	3 (9%)	4	16
Sterno-clavicular	43	1 (2%)	1	12	36		1	10
Shoulder – Glenoid	58	3 (5%)	29	4	51	7 (14%)	24	8
Shoulder – humerus	65	1 (1%)	20	1	62	1 (2%)	15	2
Elbow – humerus	59	5 (8%)	11	3	57	3 (5%)	9	4
Elbow – radius	57	7 (12%)	10	6	51	3 (6%)	6	2
Elbow – ulna	57	3 (5%)	15	3	55	–	11	–
Wrist – radius	51	1 (2%)	3	1	47	–	4	–
Wrist – ulna	39	2 (5%)	4	2	41	1 (2%)	4	3
Hand – carpals	340	12 (3%)	22	–	318	3 (1%)	15	–
Hand – carpo-meta	258	5 (2%)	8	–	235	5 (2%)	5	–
Hand – meta-phalangeal	254	1 (0.4%)	–	–	241	–	–	–
Hand – proximal IP	248	2 (1%)	11	–	238	1 (0.4%)	15	–
Hand – distal IP	154	2 (1%)	14	–	148	5 (3%)	2	–
Hip – pelvis	74	21 (28%)	38	25	73	16 (22%)	35	22
Hip – femur	75	7 (9%)	19	7	71	3 (4%)	7	3
Knee – femur/patella	69	2 (3%)	26	2	70	7 (10%)	28	7
Knee – lateral	74	2 (3%)	17	1	75	1 (1%)	12	1
Knee – medial	75	1 (1%)	21	1	75	1 (1%)	15	1
Ankle	69	–	3	–	70	–	2	–
Foot – tarsals	383	2 (0.5%)	16	3	376	1 (0.3%)	15	2
Foot – tarso-meta	273	3 (1%)	4	1	275	–	4	2
Foot – meta-phalangeal	210	1 (0.5%)	1	–	197	1 (0.5%)	1	–
Foot – proximal IP	131	–	–	–	164	–	2	–
Foot – distal IP	60	–	–	–	65	–	2	–

Table 32. Summary of numbers and rates (approx. %) of spinal lesions by sex (numbered vertebrae only, see Table 30)

	Total no. vertebrae	*Osteoarthritis*	*Schmorl's nodes*	*Degenerative disc disease*	*Lone osteophytes*	*Lone pitting*
Female	603	56	30	58	270	89
(securely sexed)	43% total	9%	5%	10%	45%	15%
Female	830	80	43	90	371	119
(all categories)	59% total	10%	5%	11%	45%	14%
Male	292	9	55	35	111	17
(securely sexed)	21% total	3%	19%	12%	38%	6%
Male	475	37	73	62	187	47
(all categories)	34%	8%	15%	13%	39%	10%
Total (inc.	1409	117	116	152	558	166
unsexed)		8%	8%	11%	40%	12%

Table 33. Summary of spinal lesions by area (data from all categories of sexing. Includes numbered vertebrae only (see Table 30)

	Cervical	*Thoracic*	*Lumbar*	*1st sacral*	*Overall total**
No. (inc unsexed)	383 F: 207 M: 122	643 F: 385 M: 221	313 F: 194 M: 109	70 F: 44 M: 23	
Osteoarthritis	5% (19) F: 6% (12) M: 6% (7)	9% (56) F:13% (50) M: 5% (12)	10% (30) F: 9% (18) M: 13% (14)	9% (6) F: 4% (2) M: 17% (4)	8%
Schmorl's nodes	–	13% (87) F: 7% (28) M: 27% (59)	9% (29) F: 8% (15) M: 13% (14)	–	8%
Degenerative disc disease	12% (48) F: 17% (35) M: 11% (13)	8% (50) F: 7% (25) M:7% (25)	13% (40) F: 11% (22) M: 16% (18)	20% (14) F: 18% (8) M: 26% (6)	11%

* Includes unsexed individuals

there are differences in the distribution of lesions (Table 33). The rates for both sexes are highest in the first sacral vertebra, but the cervical rate for the females is similar to the sacral while the male rate is less than half, the lumbar region clearly having been under greater stress in the males than the females. There is some increase in distribution with age, those individuals of less than 45 years old having lesions in a maximum of three vertebrae and those over 50 years having lesions in a minimum of six, but between these age ranges there is considerable individual variation, the maximum number of affected vertebrae being in a male in the 40–60 year range. The variations between the sexes are probably indicative of different activities being undertaken by the males and females, resulting in spinal stresses in different areas. The neck is the most flexible area of the spine and the high rates of lesions in this area may indicate that the females were largely involved in close work requiring them to spend much of their time bent forwards (eg, needlework), the highest rate of lesions here being in the C5 (37%), the point of maximum curvature in the neck. The lesions in the males had a similar distribution to the Schmorl's nodes, with the majority of lesions below T5 suggesting they were engaged in more heavy lifting. The severity of lesions varied from slight pitting along the anterior or lateral margins of a vertebra, to extensive macro- and micro-pitting, occasionally with some new bone, across the whole of both surfaces, and flanges of osteophytes.

The crude prevalence rates (CPR) for the period presented by Roberts and Cox (2003, table 6.29) is *c.* 11%, but their sample included data from only two sites and there is considerable variation between them. The maximum CPR of *c.* 12% from Spitalfields suggests that the West Butts congregation, with a CPR of 33%, was under considerably greater spinal stress than some of their contemporaries, possibly, in this comparison, reflective of their generally lower social status.

Osteoarthritis

Osteoarthritis is a condition affecting the synovial joints. It is manifest by eburnation and/or pitting within the joint surface in association with osteophytes on the surface margins; there may also be alteration of the bony contours (Rogers and Waldron 1995, 43–4). Lone osteophytes or lone pitting of the joint surface, while possibly indicating the early stages of the disease, have not been considered sufficient criteria for diagnosis. The aetiology of osteoarthritis is complicated and includes the effects of age, mechanical alteration through activity or injury, and genetic predisposition (Rogers *et al.* 1987; Rogers and Waldron 1995, 33). Some joints are more prone to development of the disease than others, including the weight bearing joints of the hip and knee, the facet joints of the vertebrae, the acromio-clavicular joint, and the hands; the latter being most commonly affected in middle-aged females (*ibid.*).

Lesions indicative of osteoarthritis were observed in the remains of 55 individuals (34 adult females (77%) and 21 adult males (81%)), affecting 1–27 joints per individual. No lesions were observed in individuals of less than a minimum age of 30 years. Although a similar proportion of individuals appear to have been affected in the median and older ranges (*c.* 80–100%; possibly partly reflective of skeletal recovery rather than the true CPR), there is a general increase in the number of sites affected with age; those 30–45 years old being affected at 1–5 sites and males of over 50 years old at a minimum of 13. The maximum number of sites, 27, was observed in a male in the 50–70 year age range, however, one female in the 30–55 year range had lesions at 24 sites.

The only joints in which the condition was not observed were the metacarpal-phalangeal joints, the ankle, and the inter-phalangeal (IP) joints of the foot. There is a slightly greater prevalence – in terms of sites affected and rate – of the condition in the joints of the right side than the left, but slightly higher rates were observed in some left joints (Table 31). This may suggest a link to handedness, most individuals being right handed and therefore favouring the right side in many activities.

The overall rate for the vertebral joints is 8%, the highest rates begin in the lumbar region and the lowest in the cervical (Table 33). There is some variation

Table 34. Rates of osteoarthritis in the extra-spinal joints (%)

Joint	*Female*		*Male*	
	Secure sexing	All categories	Secure sexing	All categories
Temporo-mandibular	20	17	7	8
Costo-vertebral (ribs)	13	13	12	19
Acromio-clavicular	3	10	5	4
Sterno-clavicular	–	–	4	3
Shoulder – Glenoid	3	3	16	19
Shoulder – humerus	–	–	6	4
Elbow – humerus	5	5	6	10
Elbow – radius	9	8	7	11
Elbow – ulna	2	1	6	5
Wrist – radius	2	2	–	–
Wrist – ulna	7	6	–	–
Hand – carpals	4	3	–	–
Hand – carpo-meta	2	2	–	2
Hand – proximal IP	0.4	0.6	–	–
Hand – distal IP	4	3	–	1
Hip – pelvis	25	23	28	31
Hip – femur	7	6	10	8
Knee – femur/patella	5	5	3	9
Knee – lateral	3	2	3	2
Knee – medial	–	–	7	4
Foot – tarsals	0.8			
Foot – tarso-meta	0.7			

between the sexes in that the highest rate for the females is in the thoracic region and that for the males in the first sacral vertebra; there is closer correlation between the sexes in the cervical and lumbar regions but the male rates are higher generally than those for the females (Table 33).

The highest rates in the extra-spinal joints were recorded in the acetabulum (hip joint), temporo-mandibular joints, glenoid fossa of the scapula (shoulder joint), costo-vertebral joints (thoracic vertebrae and ribs), and the proximal radius (elbow joint), all with rates in excess of 10% (Table 34). The rates for both males and females were >10% for the hip and costo-vertebral joints, but in both cases the male rate was slightly higher than the female. The greatest diversity between the sexes was seen in the shoulder and the temporo-mandibular joints. The rate for the glenoid fossa of the scapula was considerably greater for the males than the females, with a higher rate in the left (25%) compared to the right (13%); this probably reflects greater use and pressure being put on the shoulder joint in the males as part of their daily activities (Knüsel 2000, 112).

Conversely, females had a considerably higher rate than the males in the temporo-mandibular joint. Females are known to be most prone to lesions in the hand, and the almost exclusive presence of the condition in female hand bones is in keeping with this observation, though the aetiology is unclear (Rogers and Waldron 1995, 32). The severity of the lesions varied dramatically from mild-moderate pitting and osteophytes, for example in one part of the acetabular rim, to heavy eburnation with extensive micro- and macro-pitting and gross osteophytes (Fig. 40a). The severity of the pain associated with osteoarthritis is known to not necessarily match the severity of the bony lesions. However, the exhausting pain, both local and referred, which can accompany the condition will be familiar to any who have suffered from it. The increasingly debilitating effects of the disease with advancing age, especially in the winter months and in houses devoid of the benefits of draft-proofing and central heating, can be well imagined.

The CPR for spinal osteoarthritis for the period is *c.* 13% and *c.* 11% for extra-spinal osteoarthritis (Roberts and Cox 2003, tables 6.29 and 6.30). Even combined, these rates would fall short of the *c.* 54% for West Butts. Higher rates were recorded by Brickley from St Martin's (2005, 107–9), with a CPR of *c.* 20% for spinal manifestations and *c.* 22% for extra-spinal, and overall rates for the males of *c.* 22% and females *c.* 25%, but all are still lower than those from Poole. In addition, none of the prevalence rates for the extra-spinal joints at St Martin's was greater than *c.* 6% (*ibid.*, table 99). This could, in part, reflect the presence of a more elderly population at West Butts. Any activity-related link needs to be considered with caution since some of the more heavily affected joints in the females could not be linked with any strenuous, occupation-related activity.

Pyogenic arthritis

All four left middle hand phalanges from 224 (*c.* 50–65 yr ?female) have gross destruction of the heads with loss of all normal contours, pitting across the surface area and exuberant lamellar-like new bone formation on all margins of the joints (Fig. 40b). The only left distal phalanx recovered had corresponding lesions in the base. One right middle phalanx (?fourth–fifth) has similar lesions. Although this individual had osteoarthritis in the right first carpo-metacarpal and left first proximal IP joint of the hand, the lesions described are more suggestive of pyogenic arthritis than osteoarthritis, though the diagnosis is not conclusive. Pyogenic arthritis, resulting from an infection within the joint following direct trauma or spread from foci elsewhere in the body, generally affects a single joint (Rogers and Waldron 1995, 88). However, this level of bony destruction and proliferative new bone is a characteristic of the condition, of which 224 may represent a multiple case.

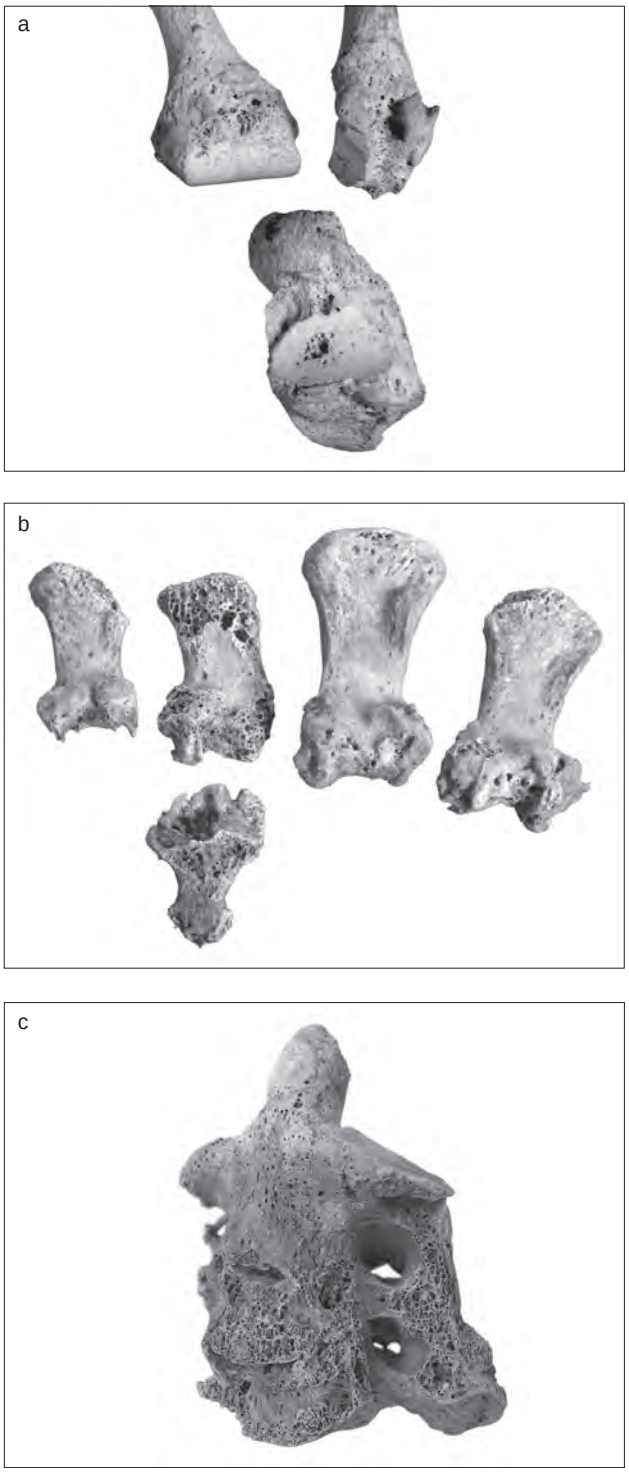


Figure 40 Joint disease: a) 210 (elder adult female) osteoarthritis in 4th–5th carpo-metacarpal joints; b) 224 (adult female) pyogenic arthritis in distal inter-phalangeal joints left hand; c) 246 (adult female) ankylosis C2–4

Diffuse idiopathic skeletal hyperostosis (DISH)

Although there is no full ankylosis of the spine, the thick, flowing, smooth new bone extending over the right side of the fourth–tenth thoracic vertebrae from skeleton 252 (45–50 yr male) are a classic indication of DISH (Rogers and Waldron 1995, 47–54; Aufderheide and Rodríguez-Martín 1998, 97–9). The lesions indicate ossification of the anterior longitudinal ligament of the spine and, as the name suggest, there is a general tendency to hyperostosis elsewhere in the body. This individual showed slight–moderate exostoses at five sites including the *glenohyoid* attachment in the hyoid, the *iliofemoral*, *sphincter urethrae*, and various muscle attachments along the iliac crest of the pelvis, and on the superior margins of the navicular. There was also almost full ossification of the thyroid cartilage. A second possible case is represented by 148 (*c.* 50–60 yr male). Again there is no ankylosis but there is thick, smooth, right anterior-lateral new bone extending down and arching between the fifth and ninth thoracic vertebrae; this individual also had exostoses at four sites (bi-laterally).

Symptoms of the disease are generally minimal other than for understandable stiffness and some aches/pains. It is predominantly seen in older males and, although the aetiology is unknown, there are indications of a link with diabetes and obesity (Rogers and Waldron 1995, 47–54; Aufderheide and Rodríguez-Martín 1998, 97–9). Modern populations show a prevalence rate of *c.* 6–12%, which is believed to be similar to that of most past populations (Rogers and Waldron 1995, 48; Aufderheide and Rodríguez-Martín 1998, 97), though the archaeological evidence does not seem to support this contention (Roberts and Cox 2003, 393). Roberts and Cox record a CPR of 3.29% for the period, though the average may have been skewed by the relatively high rate for Spitalfields, the exclusion of which would give a rate of 1.2% for the remaining sites (2003, table 6.9). This suggests the CPR of 1–2% for West Butts is close to average.

Seronegative arthropathies

The seronegative arthropathies represent erosive inflammation of the synovial joints with involvement of the entheses (tendon insertions; Rodgers and Waldron 1995, 64–77). Ankylosis of the sacro-iliac joint is a common characteristic of these conditions, particularly ankylosing spondylitis where this joint represents the primary focus, though ankylosis may also occur in response to other conditions such as DISH (*ibid.*; see above). Two cases of sacro-iliac fusion were recorded at West Butts, though it is difficult in either case to reach a conclusive diagnosis.

Skeleton 215 (*c.* 45–50 yr male) had been badly disturbed and, although redeposited bone from this burial was recovered from contexts 191a and 192, only *c.* 47% of the skeleton survived; the hand and foot bones were mostly lost and those that remained were damaged. The surviving innominate (left) was damaged but there is a smooth bony extension (ossified ligament) across the superior portion of the auricular surface. The lesion is matched by those in the

sacrum (recovered from 192), which showed no changes to the right side. Not all the vertebrae survived (six thoracic and three lumbar) but the T10–11 are fused via a smooth new bony bridge across the right lateral sides of bodies. Exostoses (or enthopathies) were observed in the femur shaft and the surviving calcaneum. The surviving lesions have the characteristics of one of the seronegative arthropathies, excluding ankylosing spondylitis which shows bi-lateral lesions in the pelvis and has no skip lesions in the spine (*ibid.*), but conclusive diagnosis is not possible due to poor bone survival/recovery.

There are indications of the commencement of ligamentous fusion in the left sacro-iliac joint from skeleton 321 (*c.* 50–65 yr male), with dense, smooth new bone arching up and across the superior portion of the surface (25 mm length, 12 mm extension). Other than exostoses/enthopathies in the calcanea and iliac crest, however, there are no features indicative of the seronegative arthropathies and causative factors for this lesion remain inconclusive.

Osteophytes

Osteophytes are irregular growths of new bone which may develop along the margins of synovial joint surfaces or vertebral body surface margins. Lesions may be associated with a number of joint diseases such as osteoarthritis and degenerative disc disease (see above), and it is not always possible to ascertain the specific cause of individual lesions (Rogers and Waldron 1995, 25–6). Where they occur as lone lesions they appear to be a 'normal accompaniment of age' (*ibid.*) and, other than possibly contributing to increased stiffness and decreased mobility in the joint, are unlikely to result in any significant pathological symptoms unless their extensive development impinges on a neighbouring nerve (most likely in the spine).

Lone osteophytes were recorded in the remains of 60 individuals: 35 females (79%) and 23 males (88%), with lesions at 1–45 sites. Lesions were seen at one site in a subadult (occipital condyles), but with this single exception none were seen in individuals of less than 30 years of age. In general, lesions were seen in a higher proportion of the older adult ranges (>45 yr) and there is a consistent increase in the number of sites affected from 1–20 in the lower ranges, to 1–42 in the middle ranges and 5–45 in the older ranges; a female in the 40–60 yr range had lesions at the greatest number of sites.

The frequency and distribution of spinal lesions is shown in Tables 30 and 32. Lone lesions were seen in *c.* 40% of vertebrae, the majority in the vertebral body surface margins, where their severity varied from as little as a millimetre around one part of the margin to an extensive flange of up to 10 mm. The highest proportion of lesions were seen in the 1st sacral vertebra (46%), with similar figures for the thoracic (44%) and lumbar (42%), and considerably fewer in the cervical region (29%). The highest rates within individual vertebra were seen in the T7 (58%) and the L5 (54%), the highest rate in the cervical region being in the anterior facet between the C1–2 (42%). Despite its 'non-pathological' nature, the debilitating effect of extensive spinal osteophytes on the range of movement within the spine will be self evident.

The frequency and distribution of lone extra-spinal lesions is shown in Table 31. Osteophytes are generally found with greater frequency around certain joints, and the high level of involvement of the hip joint (48–51% with lesions) is in keeping with the norm (Rogers and Waldron 1995, 20).

Pitting

As with osteophytes, macro- and micro-pitting and other destructive lesions in the surfaces of synovial joints may develop in response to a number of conditions and it is not always possible to ascertain the specific cause of individual lesions, though it is probable that they are most commonly reflective of the early stage of osteoarthritis.

Lone lesions were seen in the remains of 49 individuals including 30 females (68%) and 19 males (73%), with 1–13 joint surfaces being affected within each individual. The majority of individuals were over 30 years of age, but two young adult females (18–25 yr) each had slight lesions in one joint. There is a general increase in the number of joints affected with age, the maximum being recorded in an adult male of over 50 years. The frequency and distribution of the spinal lesions (seen in the articular process joints) are shown in Table 30 and those in the extra spinal joints in Table 31.

Miscellaneous ankylosis

It is likely that more than one factor was involved in the unusual ankylosis of the second–fourth cervical vertebrae of the elderly female 246 (Fig. 40c). Most of the cervical vertebrae showed gross degenerative disc disease with loss in body height and at least the C1–2 had lesions indicative of osteoarthritis. The C2–4 are fused via smooth bone over the lateral surfaces of the bodies, ie, ligamentous (disc spaces maintained though reduced), fully via the left articular process joints and partially via the right. The dorsal lesions may be linked to osteoarthritis, but the causative factors in the smooth body lesions is unclear.

Solitary bone cysts/pseudo-erosions

'Pseudo-erosions', generally small juxtra-articular or peri-articular cyst-like formations, are particularly common in the wrist and ankle (Rogers and Waldron 1995, 61). Lesions were recorded in eight individuals, all adults and inclusive of both sexes. Most were seen

in the carpal bones – scaphoid, lunate, and capitate – with one in the left cuneiform.

Infectious diseases

The majority of infections are acute (rapid on-set and conclusion) and will leave no trace on the bone. It is only infections of a chronic, and in the short term at least, less mortal nature which are likely to leave evidence of their presence in the skeleton. The over-riding role of infections in the deaths of most individuals in the pre-antibiotic era are well illustrated by the London Bills of Mortality discussed above (pp. 75–6) where 'consumption', 'smallpox', and 'scarlet/purple spotted fever' were the major causes of death listed. The impact of the various infectious diseases on the population of Britain in the post-medieval period (AD 1500 onwards) has been discussed by Roberts and Cox (2003, 328–43), who list a series of widespread epidemics which affected the country in the 18th century including an outbreak of smallpox, typhus, and influenza in 1741 and ague (fever) in 1780 (*ibid.*, table 6.18). The population of Poole would have been as susceptible to these conditions as those elsewhere, the mobility and variability of the populace within this thriving port possibly providing a focus for inception and increasing the spread of some diseases.

Tuberculosis

Tuberculosis is a chronic bacterial infection caused by *mycobacterium tuberculosis* or *mycobacterium bovis*, infection occurring either as a result of ingesting infected food (milk or meat) or by droplet infection from another individual (Ortner and Putscher 1985, 141–76; Roberts and Manchester 1997, 135–42; Aufderheide and Rodríguez-Martín 1998, 118–41). The condition affects the skeleton in a minority of cases – as little as 3% in the modern statistical data presented by Ortner and Putscher (1985, 142) – the spine being affected in 25–50% of cases (Roberts and Manchester 1997, 138; Aufderheide and Rodríguez-Martín 1998, 121). Eighteenth century Bills of Mortality for London showed a rise in the number of death from 'consumption' from 12% at the beginning of the period to 25% at the end (Roberts and Cox 2003, 338), and whilst figures are likely to have been considerably lower in the less densely urban environment of Poole, the condition is likely to have figured within the causes of death in the town. The records for 19th century Lyme Regis, similarly situated *c.* 45 miles/72.4 km to the west, indicate '... two or three young adults who died of "phithisis"' (Walker 1981).

There is little conclusive skeletal evidence for the condition within the West Butts congregation. Six individuals were recorded with periosteal new bone on the visceral surface of rib shafts (see below) which may be indicative of pulmonary tuberculosis or some other form of lung infection, and in three cases similar lesions elsewhere in the skeleton may also have been associated. One other individual (236, male, *c.* 30–45 yr) has destructive lesions in the anterior margins of several lower thoracic/lumbar vertebrae (T11 inferior surface particularly; Fig. 41a) with no associated new bone formation and slight anterior collapse of the vertebral bodies in T9 and L5. Although not fully characteristic of the condition, these lesions may represent the early stages of tuberculous infection. Similarly, small destructive lesions in the third–fourth cervical vertebrae – inferior-anterior of C3 surface, 6 x 3.5 mm area with exposed trabecular bone – from skeleton 201 (an elderly female) may be tuberculous in origin. The disease affects the cervical area of the spine far less than the thoracic or lumbar but is not unknown in this area, however, clinically it is mainly seen in children and young adults (Adams 1987, 168–9).

Periosteal new bone

Infection of the periosteal membrane covering bone may lead to the formation of periosteal new bone. Infection may be introduced directly to the bone as a result of trauma, develop in response to an adjacent soft tissue infection, or spread via the blood stream from foci elsewhere in the body. It is frequently impossible to detect the causative factors involved in individual cases and the lesions are generally classified as indicative of a non-specific infection either active (woven) or healing (lamellar) at the time of death.

Lesions were observed in 1–11 skeletal elements from 30 individuals comprising three infants (*c.* 18%), one juvenile (*c.* 25%), all three of the subadults identified, and 23 adults (*c.* 32%); the latter includes 16 females (36%) and six males (23%). Of the 14 different skeletal elements affected, lesions were most commonly seen in the tibia (ten cases), followed by the ribs (six cases), mandible (six cases); fibula and femur (five cases each); maxilla, skull vault, ilium, and humerus shaft (three cases each); scapula, ulna, and calcaneum (two cases each); with single cases involving the radius and clavicle. The CPR is similar to the overall figure of *c.* 26% for the period shown by Roberts and Cox (2003, table 6.27), being closest to the *c.* 30% recorded from Southwark in their sample. A CPR of *c.* 23% was recorded by Brickley from St Martin's, Birmingham (2006, 115), where she found the highest rates in the subadult (*c.* 37%) and young adult (*c.* 40%) groups which may be mirrored in the involvement of all three of the subadults recovered from West Butts.

Most of the lesions in the mandible and maxilla were directly related to the spread of infection from dental abscesses, the majority of which were active or in the process of healing at the time of death (Fig. 41b). All the mandibular teeth from skeleton 128 had been lost *ante mortem* and there was no sign of other

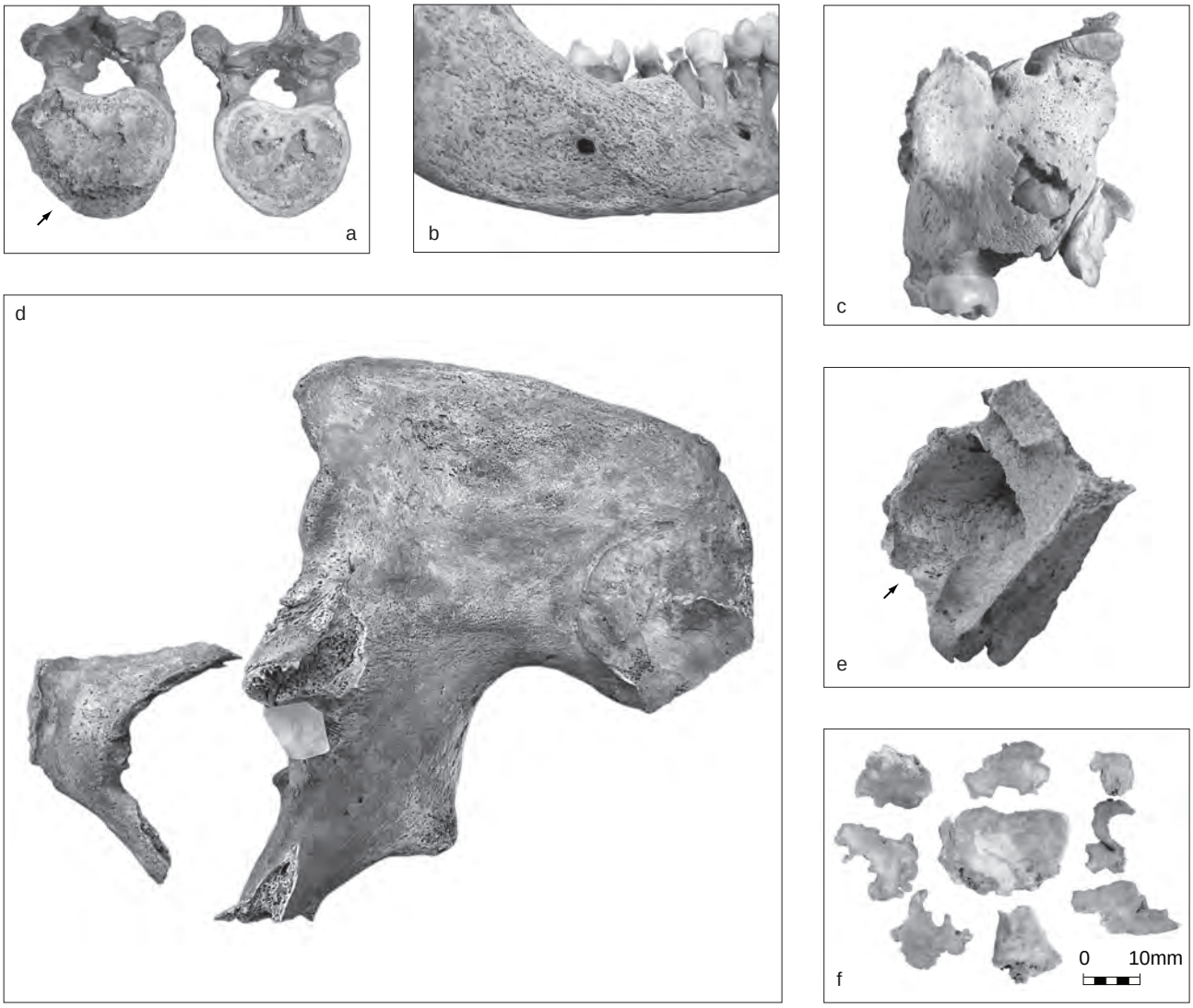


Figure 41 Infections: a) 236 (adult male) destructive lesion in anterior of T11 inferior surface, ?tuberculosis; b) 311 (female c. 18 yr.) right disto-buccal mandible with sinus from dental abscess and extensive periosteal new bone; c) 101a/381 (infant/juvenile) lateral view left maxilla with woven and lamellar new bone; d) 187 (adult female) medial surface right innominate with extensive periosteal new bone; e) 246 (elder adult ??female) superior view broken left antrum showing new bone indicative of sinusitis; f) 293 (adult female) inner & outer surfaces of fragments of hydatid cyst

dental lesions, but it is possible that the slight lamellar new bone evident within the mandibular canal and woven new bone on the left side of the body may originally have been linked to a dental abscess. There is one individual where no possible link with a dental lesions is apparent. The left maxilla from 101a is incomplete and therefore unclear, so the smooth, uneven margined lesion (5 mm diameter) passing into the antrum from the buccal surface may be an enlarged infra-orbital foramen. There is fine lamellar periosteal new bone over the anterior maxillary surface from the alveolus to the infra-orbital margin and fine grained reactive new bone in the superior portion of the of infratemporsal surface to the level of orbital surface from alveolus (Fig. 41c). The antrum floor is damaged but there appears to be total loss of the cortical bone with exposure of the coarse trabecular bone, macro-pitting and some spicules of new bone. A fragment of inferior concha shows coarse, lamellar-type new bone on at least the superior of the lacriminal process with slightly finer changes in the inferior portion. Lesions in the right temporal are exacerbated and possibly slightly masked by post-mortem changes but the articular tubercle appears to have shallow 'labyrinthine' erosion of surface. This individual, a juvenile of *c.* 5 years, also has extensive *cribra orbitalia* and hypoplasia, suggesting dietary deficiencies. The cause of the infection is not clear, but it appears to have been active at the time of death. That the cause of death was not clear at the time is also apparent in that this individual was subject to a cranial autopsy (see p. 95).

With one exception (skeleton 302) all those with rib lesions were affected in more than one rib; some were bi-lateral (169), in others lesions were limited to one

side (178, 280, and 348), with 4–8 ribs affected in each case. All the lesions were in the visceral surface indicating they developed in response to some form of lung infection which could include pleurisy, bronchitis, or tuberculosis. At least three individuals also had lesions at several other sites either in the upper limb shafts (169), the lower limb shafts (178), or both (348). The involvement of these other sites may be due to a spread of infection from a pulmonary focus.

None of the individuals with periosteal new bone showed any indications of direct trauma to the bone. There are, however, at least two other cases where there is likely to have been infection of the bone from adjacent soft tissue foci. The right ilium from 187 (40–50 yr female) has extensive fine-grained reactive and smooth lamellar new bone across the anterior/medial surface extending across the body and superior ramus of the ischium (Fig. 41d). Similar lesions were observed in the anterior of the sacrum, with exuberant striated but smooth lamellar bone extending laterally across the right lateral mass and slight smooth new bone in bands along the anterior margins between the other body segments. Lesions were also evident on the anterior bodies and right transverse processes of the L3–5. The lesions in the ilium appear to have involved the underlying cortical bone and are probably indicative of osteitis. The condition was clearly extensive and doubtless debilitating and painful, but at the time of death had been or was in the process of healing. Lesions seen in the ilia from 124 were very slight, with slight fine-grained bone restricted to the area adjacent to the auricular surfaces.

It has been observed that some bones, specifically the long bones of the lower limb, are more prone than others to infection via transmission from elsewhere in the body and that, usually, only one bone is involved (Manchester 1983, 37; Roberts and Manchester 1997, 129–30). Lesions in the tibia in particular have also been linked with minor shin trauma, varicose veins, and ulceration (Manchester 1983, 37; Roberts and Manchester 1997, 129–30). In many of the cases from Poole involving the lower limb more than one bone is affected, either uni-laterally or bi-laterally. This may suggest more localised infection in these cases, eg, bi-lateral lesions in the tibiae and fibulae from skeleton 246, rather than transmission from a distal focus.

Endosteal new bone

Four individuals had a thin layers of new bone on the endosteal surface of parts of the skull vault, indicative of a meningeal infection. In skeleton 227 (adult female), lamellar new bone with a slightly porotic/cribotic appearance extends along the sagittal line from the frontal crest to the occipital (17 mm wide), being heaviest in the parietal bones. A small patch (*c.* 10 x 7 mm) of pale grey, smooth, fine lamellar bone was recorded in the left dorsum stellar region of the sphenoid from 215 (adult male). Fine grained, active new bone extended over a 21 x 25 mm area of the right frontal in skeleton 288A (subadult). The infant 314 has two small patches of fine-grained endosteal new bone in the anterior squalmous portion of the left temporal. In at least two of these cases the infection was active at the time of death and may have been a contributory factor.

Sinusitis

Four individuals, three adult females and one adult male, had lesions indicative of infection in one or both maxillary sinus cavities. The numbers are likely to represent a minimum since this relatively fragile area of the facial bones did not survive in all burials and the cavity could not be observed in the well preserved skulls. In four cases the infection appears to have been active at the time of death, with evidence of coarse or fine-grained woven new bone over parts of the antrum. In one case – 246 – the infection appears to have healed, the new bone having a smooth lamellar form.

In the case of the adult male 263 (Fig. 41e), the infection was secondary to a dental abscess in the maxillary left M2 socket which had tracked into the sinus cavity via a 6 mm diameter fistula in the antrum floor. The healed case (246) may also originally have spread from a dental infection but as all the teeth were lost *ante mortem* it is not possible to repudiate or verify, though the bi-lateral involvement may argue against it. The two other active cases – 242 and 406 – appear to represent primary infections (Fig. 41e).

The CPR of 4% is slightly lower than the average of *c.* 7% for the period, but Roberts and Cox's sample of three sites shows considerable variation (2003, table 6.3). Not surprisingly the highest CPR of *c.* 18% was recorded from Spitalfields, but it is unlikely that Poole, with the benefits of relatively 'fresh' sea air would have suffered from the pollution induced fogs – major contributors to the primary condition – experienced by the capital in the 18th and 19th centuries (*ibid.*, 299). Coal, transported by coastal vessels from the Tyneside coal-fields, had largely replaced wood as a domestic fuel in London by the early 1700s and was to increase in dominance nationwide throughout the century as wood sources became severely depleted. Although there is no specific reference to the import of coal for domestic use in Poole, the product was certainly being exported from the town in the early part of the 19th century (Sydenham 1839, 401). The town's flourishing coastal trade may have lead to the early adoption of coal for domestic purposes, especially after the opening of the Welsh mines and development of canal links to inland producers in the midlands and the north as the century progressed (the county's coal production tripled during the course of the century).

Parasitic infection

The tape worm, genus *Echinococcus*, lives in the intestines of dogs and foxes and if food or water supplies contaminated by the egg-carrying faeces of these animals is ingested by humans they too will become infected (Manchester 1983, 49). The worm develops multi-cystic structures which may inhabit various of the body's organs, predominantly the liver and, less frequently, the lungs (*ibid.*). The effects of tapeworm infestation include constant blood loss, diarrhoea, and abdominal discomfort, which in advanced cases could lead to the death of the individual (Manchester 1983, 50).

Fragments of calcified hydatid cyst (the 'casing' formed around the worms) were recovered from amongst the bones of two individuals, both adult females (246 and 293). A single small fragment of layered osseous tissue, 1 mm thick, *c.* 8 mm diameter, with a smooth light brown outer 'shell' and buff/white 'chalky' interior, was recovered from the pelvic area of skeleton 293. Several fragments of the same characteristic form of material was recovered from the vicinity of the ribs, skull. and pelvic area of skeleton 246 (Fig. 41 f); the distribution may imply more than one focus of infestation.

Miscellaneous indications of infection

Four individuals have small patches of fine grained woven new bone, similar in appearance to periosteal new bone, in a joint surface, generally in association with pitting and in one case – the T1 inferior body surface of skeleton 419 – the lesions create a 'melted' appearance. These lesions, seen in the auricular surface (175), T5 inferior body surface (147), T11 articular process joint and T1 inferior body surface (419) all have the appearance of some form of infection, but there is insufficient evidence to suggest a diagnosis.

Changes in the right distal fibula from skeleton 184 may represent a healed case of osteitis. The lesions are not characteristic of the active condition but x-radiograph (unclear due to *post mortem* damage) shows a disruption in the cortex with a diffuse line of increased density along the normal cortical contours (no indication of fracture) corresponding with what appears visually as smooth bony callusing disrupting the lateral profile.

Circulatory disorders

Aneurysmal erosions

Atheroma develop from localised fat deposits in the blood vessel wall with an associated proliferative response of the artery's smooth muscle cells. This is followed by a cellular infiltrate with the development of necrotic areas which frequently become calcified and/or fibrotic (Aufderheide and Rodríguez-Martín 1998, 78). The condition may develop in any artery but most commonly affects the larger ones (aorta and main branches). The aetiology of the condition is unknown but contributory factors include the sex of the individual (males are more prone) '... age, hypertension and elevated blood lipid factors secondary to dietary fat or genetic aberrations of fat metabolism'; the condition may also develop in association with syphilitic infection (*ibid.*, 78–9). The major hazards of atheroma include thrombosis, embolism, and infarction, all life-threatening conditions.

The close proximity of the aorta to the spine renders the anterior surfaces of vertebrae, particularly the lumbar, subject to the '... constant compressive effect of the aneurysm's pulsations, resulting in shallow, concave erosion ...', and the anterior and left anteriolateral portions of the vertebral bodies have demonstrated such defects in modern cases (Ortner and Putscher 1985, 246–7; Aufderheide and Rodríguez-Martín 1998, 79–81). Two adult females from West Butts (187, 40–50yr and 224, 50–65 yr) have spinal lesions suggestive of aneurysmal erosions. The second, eleventh and twelfth thoracic vertebrae from 187 all show slight flattening in the anterior body, with faint vertical ridges to either side in the T2 and to left side only in the T12. The anterior bodies of the second–third lumbar vertebrae from 224 both have a ridged/scalloped appearance. The relatively shallow nature of these erosions may indicate the problem had not reached serious levels in either of these individuals. An elderly male from Spitalfields was believed to have had this condition (Waldron 1993), but generally there is little comparative data in the archaeological record. It is unclear how frequently the condition may have been the cause of death in the past. Vascular disease, as with cancers (see below), predominantly affects older individuals, and the proportion of potential sufferers is likely to have been reduced by the more prolific infectious diseases in the 18th century than is the case in the 21st. It is possible, however, that at least some of the 215 deaths described as due to 'apoplexy, suddenly and plant struck' in the London Bills of Mortality for 1775 (Roberts and Cox 2003, table 6.1), may include the fatal effects of an embolism.

Metabolic conditions

This category of conditions is generally reflective of deficiencies or excesses within the body's system, commonly – though not exclusively – linked to dietary intake; the resulting disorders are frequently described as 'stress indicators' (Roberts and Manchester 1995, 163–4).

Cribra orbitalia

This condition – manifest as pitting in the orbital roof – is generally believed to result from a metabolic disorder associated with childhood iron-deficiency anaemia, though other contributory factors, such as parasitic infection, are also recognised (Molleson 1993;

Roberts and Manchester 1995, 166–9). Although changes probably only develop in childhood the lesions can persist into adulthood (*ibid.*). Some researchers have observed that individuals with iron-deficiency have an increased susceptibility to severe infections (Aufderheide and Rodríguez-Martín 1998, 349; Roberts and Cox 2003, 307).

Lesions were observed in 15 individuals within the West Butts population (CPR 15%), including eight males (CPR 30.8%), three females (CPR 6.8%) and four unsexed immature individuals (CPR 7.1%: two infants and two juveniles). Table 35 shows the prevalence rates for each orbit by sex (all levels of confidence); overall rate 15.86%. Lesions were bi-lateral in a minimum 53.3% of cases and unilateral in a minimum of 33.3%. Most lesions were in the porotic range (11 individuals), with cribotic lesions being recorded in four orbits (Robledo *et al.* 1995, fig. 1). The majority of lesions were slight, but heavy and extensive bi-lateral porotic lesions were observed in one juvenile (101a) and one subadult male (288A).

Understandably, given the nature of the condition, the rates are much higher in the immature group, where the disease was presumably active, than in the sexed, predominantly adult groups (one subadult male), where some healing/remodelling may have masked or erased lesions. There is a noticeable difference between the male and females rates, the former being four to eight times that of the latter. With the exception of the one subadult male, there is no perceptible difference in the age of the adults with lesions, most of both sexes falling in the 35–50 year range with one male over 50 years old. At least eight of the individuals (male and female) with the condition also had slight dental hypoplasia (see above; 16.6% of those with hypoplasia) and one individual, an adult female (192), also had rickets.

The overall CPR is greater than the average of 8.95% shown for the sample of seven sites included in Roberts and Cox's review (2003, table 6.6), lying in close proximity to that of 14.57% from Christ Church, Spitalfields (Molleson and Cox 1993, 43). The potential limitations of comparing CPR for different sites, already discussed above, is further demonstrated by comparison of the West Butts figures with the true prevalence rate for Spitalfields, which at 34.06% is considerably greater than the 15.86% for the Poole population. The overall prevalence rate for West Butts is greater than that of 9.64% recorded at St Martin's (Brickley 2006, 134), which had much lower rates for the immature individuals and adult males (20.79% and 5.59% respectively), but a similar one for the adult females (6.19%).

Table 35. Rates of *cribra orbitalia* (%)

	Orbits affected	*Female*	*Male*	*Unsexed immature*
Right	12.8	2.6	20	42.8
Left	18.6	7.0	28	57.0

The imbalance in the prevalence rates between the sexes at West Butts is suggestive of a specific problem with respect to the males rather than something related to infants within the cemetery population in general, where the overall impression is of relatively low fertility rates (less likelihood of anaemia in the mother due to repeated pregnancies), low infant mortality and comparably good health (see above). The figures suggest that male children were more likely to have suffered from iron deficiency than the immature females, probably as a result of the poor diet of the affected individual or anaemia in the mother (Molleson and Cox 1993, 42–4). Whether this can be said to demonstrate a difference in infant feeding practices, males being more likely to be fed 'pap' or farmed-out to a busy wet-nurse rather than receiving the more nourishing mother's breast-milk, is debatable (*ibid.*). The potential damage caused to the infant by such activities was not necessarily understood. It was common practice for middle-class women in the 18th century to employ a wet-nurse (*ibid.*, 43) and a lower-class working mother may have considered providing additional household funds more important than being on-hand to breast-feed her child.

Porotic hyperostosis

The condition is of the same aetiology and similar appearance to *cribra orbitalia* but is observed far less frequently in British skeletal assemblages (Roberts and Manchester 1995, 167). Thinning of the outer table of the vault, exposing the – often thickened – underlying diploe, creates the appearance of surface 'pitting' in the early stages of the condition (*ibid.*; Aufderheide and Rodríguez-Martín 1998, 348–9). The lesions are often symmetrical, characteristically affecting the frontal and parietal bones (*ibid.*). One case of slightly increased porosity in the right parietal was observed in the remains of one adult female (409); no other 'stress indicator' lesions were observed.

Vitamin D deficiency: rickets and osteomalacia

Vitamin D – which has been demonstrated to be more like a hormone than a vitamin (Brickley *et al.* 2005, 390) – enables the body to absorb calcium and phosphorus which are needed for bone mineralisation both in the growing child and in adults (Aufderheide and Rodríguez-Martín 1998, 306; Roberts and Manchester 1995, 173–4; Brickley *et al.* 2005, 390–1; Mays *et al.* 2006). The majority (*c.* 90%) of the body's requirements are gained from solar irradiation absorbed through the skin and retina, with a smaller proportion being supplied by dietary intake of animal and fish oils (Roberts and Manchester 1995, 173–4; Molleson and Cox 1993, 45).

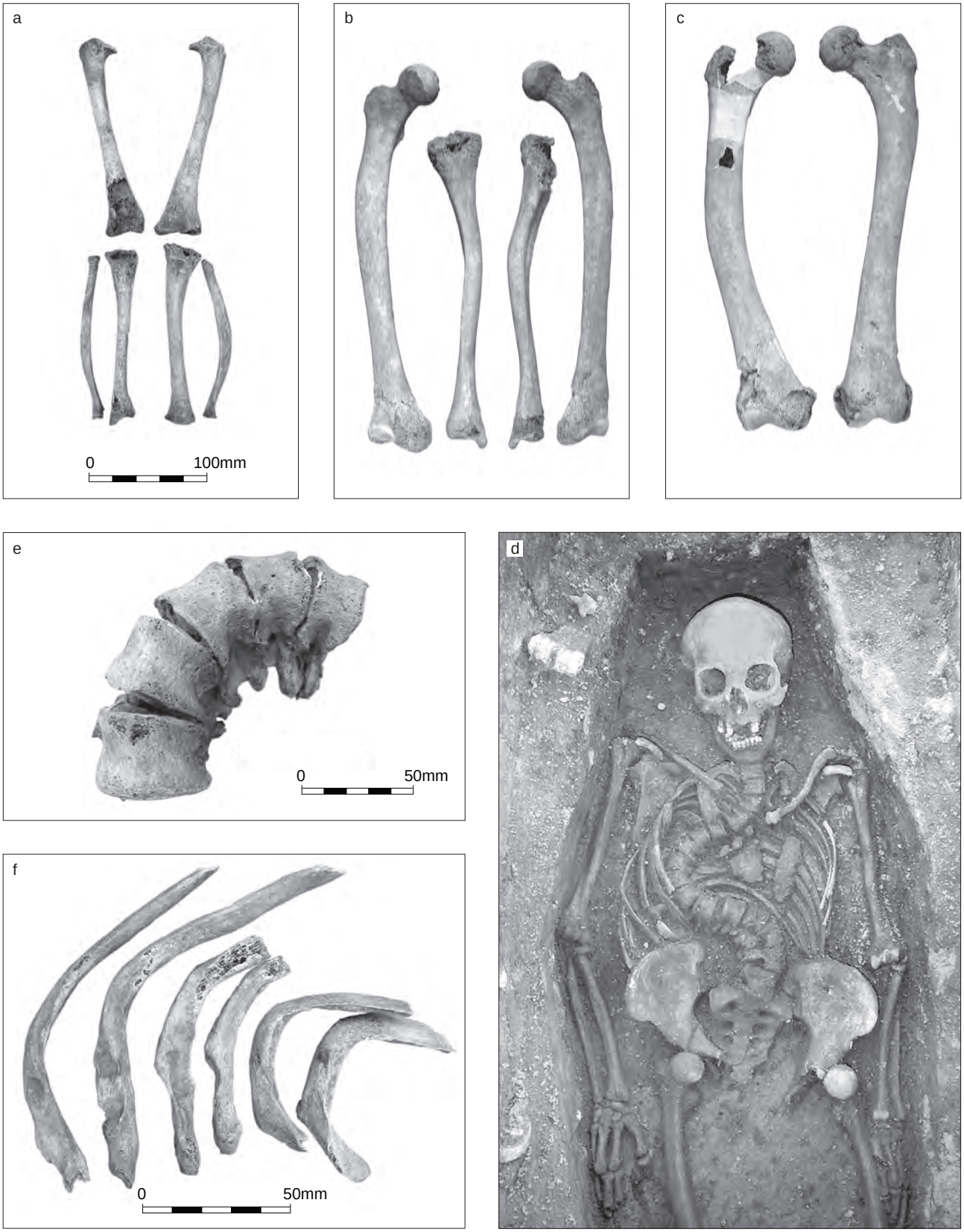


Figure 42 Metabolic conditions I. Rickets*: a) 204 (infant) lower limb showing characteristic bowing; b) 317 (adult female) bowing in femora and tibiae; c) 378 (adult female) femora showing bowing and coxa vara; d) 370 (adult female)* in situ *remains showing spinal scoliosis; e) 370 detail ankylosed section of T8—2 spine with scoliosis;* Osteomalacia*; f) 351 (adult female) left 5th–10th ribs showing remodelling (flattening) of shafts*

A deficiency in the early stages of childhood – rickets – may reflect a number of factors, the most common of which is inadequate acquisition of the vitamin, which leads to porosity and deformity of the 'soft', inadequately mineralised bone under mechanical stress (Aufderheide and Rodríguez-Martín 1998, 306; Roberts and Manchester 1995, 173–4; Mays *et al.* 2006). One of the most characteristic features of the condition, which may remain evident in the skeletal remains of older children and adults, are changes in the, predominantly, weight-bearing bones which 'bend' under stress; the arm bones may be affected if a child is at crawling stage, the legs if toddling and walking, the pelvis by sitting, and other bones may be affected under the stress of muscle contraction (Aufderheide and Rodríguez-Martín 1998, 306; Roberts and Manchester 1995, 173–4; Mays *et al.* 2006). The condition promotes general ill health and in severe cases may lead to problems later in life, eg, for women with deformed pelves in childbirth (Roberts and Manchester 1995, 173–4).

Bending lesions of varying degrees of severity were observed in the remains of two infants and eight adults (Fig. 42). Seven of the latter, for whom sex could be determined, were female. Tibiae were most frequently affected (7/79 individuals with surviving tibiae, 8.86%), followed by femora (6/89, 6.74%), and fibulae (3/71, 4.22%). Pronounced *coxa vara* (short, obtuse angled femoral neck) was also noted in one adult female (378; Fig. 42c). No conclusive upper limb or rib lesions were observed. The condition may, however, have been more widespread since bone remodelling in adulthood obscures mild cases and it has been observed that in young immature individuals, lesions in their early stages but active at the time of death require excellent preservation to enable their recognition (Roberts and Manchester 1995, 175; Mays *et al.* 2006). The spinal lesions in skeleton 370 (*c.* 35–55 yr female; *c.* 96% recovery), where bowing was recorded in the femur and tibia shafts, are probably indicative of changes due to severe rickets as an infant (Aufderheide and Rodríguez-Martín 1998, 308). There is dorsal ankylosis between T8 and T12 with 90° scoliosis to the left (Fig. 42d and e); the left sides of the vertebral bodies are slightly compressed with diminution or loss of the left rib facets. T3–6 show up to a 5 mm loss in body height in the right sides and dorso-lateral elongation of the bodies; X-radiographs revealed no internal destructive lesions. There is also substantial remodelling in the left mid-ribs with rotation of facet positions, abnormal S-shaped angulation of the dorsal shafts and osteoarthritic lesions. These long standing changes would have caused severe disability resulting in restricted breathing as well as movement, and are likely to have left the woman largely housebound and dependent.

The overall CPR of 10% (15.9% of adult females, 11.76% infants), is considerably higher than the 3.65% for the period presented by Roberts and Cox (2003, table 6.8), being closest to the 6.79% from the Cross Bones Burial Ground, London (Brickley and Miles 1999). Closer still is the figure of 7.5% from St Martin's, where bending lesions were most commonly observed in the femur at a rate very close to that from West Butts (6.27%; Brickley, 2006, 132–3). Although known to occur in rural districts, rickets is considered to be primary a disease of urban/industrial regions where its frequency is attributed to a lack of sunlight (Aufderheide and Rodríguez-Martín 1998, 305; Owens in Brickley 2006, 132). Essentially a classless disease, records from London in 1773 show a high incidence amongst the rich and the poor, probably reflecting both a lack of sunlight and inadequate diet in both cases but potentially for slightly different reasons (Molleson and Cox 1993, 45; Roberts and Cox 2003, 308–10). Brickley's results from St Martin's show a higher CPR for the adults from vaults (better off) compared with the earth-cut graves (poorer), though the situation is reversed for the immature individuals (former by 4.86%, latter by 3.53%; table 105).

Comparisons between male and female adults showing evidence for healed rickets are not commonly stated for other comparative assemblages but the exclusive inclusion of females in this category in the West Butts population begs the question why. Evidence of deficiencies or childhood disorders – hypoplasia, *cribra orbitalia* – indicates that female infants enjoyed parity if not a reduced susceptibility to conditions detrimental to infant health than their male counterparts, suggesting that the problem in this case is specific – a comparative lack of sunlight. The clothing of, at least some, female infants may have covered more of the skin than that of males and/or there may have been less inclination (Poole seems unlikely to have offered the lack of opportunity) for them to have access to sunlight. It may, however, simply be that these females were sickly infants – five of the seven had dental hypoplasia (see above) – and were consequently kept indoors; a similar conclusion has recently been drawn from comparisons between other rural and urban historic populations (Mays *et al.* 2006).

Osteomalacia, the adult form of vitamin D deficiency, has a similar aetiology to rickets, though abnormal loss of calcium from the body due to kidney or intestinal disease, closely spaced multiple pregnancies, and prolonged breast feeding may also be factors in the adult condition (Roberts and Manchester 1997, 175; Brickley *et al.* 2005). The pattern of skeletal involvement is also distinct from that of rickets and less easily defined as some of the characteristic changes – pelvic deformity, collapse, and deformity of vertebral bodies – may also occur in response to other conditions such as tuberculosis and osteoporosis (Roberts and Manchester 1997, 175; Brickley *et al.* 2005; Brickley 2006, 133–4).

Some degree of anterior vertebral body collapse, sometimes with associated ankylosis, was observed in 12 adult spines including those of seven females (15.9%) and five males (19.23%) from West Butts (Appendix II). Only one of these cases, 351 (>50 yr female), may be due to osteomalacia; the T4–7 bodies are slewed and slightly angled to the right; the T7–10 bodies have collapsed to the left with dorsal ankylosis in the T9–10; and the left fifth–tenth ribs were remodelled with dorsal flattening in the upper ribs and lateral bowing in the lower ribs, similar but less pronounced changes were noted in the right ribs (Fig. 42f). The rib lesions are similar to those described by Brickley *et al.* (2005) as reflecting the action of the weight of the arms against the softened bone. It is possible that one of the cases of ankylosed scoliosis described above (see skeleton 218, pp. 76–7) may also have resulted from osetomalacia, but poor skeletal survival limits confident diagnosis.

At least four of the remaining cases of vertebral body collapse (148, 215, 321, and 360; all >45 yr) are likely to have been the result of osteoporosis (see below). One case may be related to tuberculosis infection (236, 30–45 yr male; see above) The remaining six cases, all adults >30 yr, most >45 yr, are of inconclusive aetiology; none show evidence of infection or tumour, but all show some form of degenerative joint disease and osteoporosis is the most likely cause in most cases.

Osteoporosis

Osteoporosis results in increased porosity and loss of structural integrity within, predominantly, the trabecular bone (eg, vertebrae and articular surfaces) of the skeleton rendering it liable to break down under stress. The condition is most commonly correlated with increased age, females being particularly vulnerable due to hormonal changes during menopause, though other factors are also involved, particularly diet and lack of physical exercise (Roberts and Manchester 1997, 177–80; Aufderheide and Rodríguez-Martín 1998, 314–16).

Most of the cases of vertebral body collapse discussed above are likely to be reflective of this condition. Bone was not subject to routine x-radiography so the extent of the condition was not consistently recorded other than where macroscopic skeletal manifestations were apparent, but in at least one case where vertebrae were exposed to examination (without additional damage; 378, female *c.* 50–65 yr) the breakdown of the trabecular structure was clearly apparent.

Gall stones

Gall stones may develop in the gall-bladder or bile ducts. Steinbock identifies four major types which differ in form and constituents, dietary, genetic and hormonal factors being active in their development, and there is an increased prevalence with age (1989; Aufderheide and Rodríguez-Martín 1998, 272–3). Although most gall stones are asymptomatic, impaction and blockage of the bile duct may lead to infection and/or jaundice, and the condition can be both painful and debilitating, and potentially life-threatening (*ibid.*).

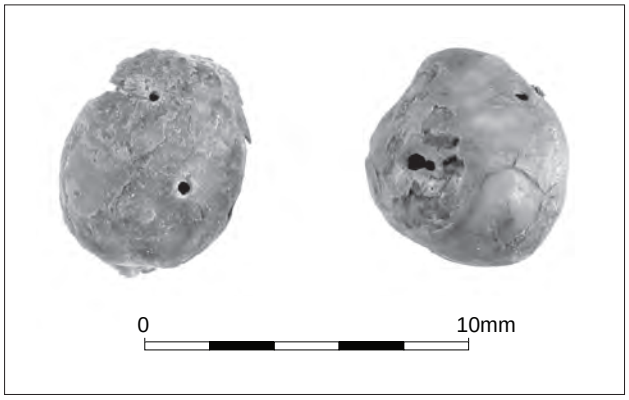


Figure 43 Metabolic conditions II: 246 (adult female) gall/kidney stones

Two small (6 x 7 mm and 7.4 x 5.5 mm) semi-spherical masses of ossified tissue recovered from the hand/pelvic region of an adult female skeleton (246) have the appearance of gall (possibly kidney) stones. The surfaces are smooth and pale/mid-brown in colour and damage to one reveals a layered structure which is also indicated in the X-radiograph (Fig. 43).

Harris Lines

Indicative of arrested growth, Harris lines may be seen as opaque transverse lines in X-radiographs of the long bones. Similar to dental hypoplasia (see above), they may reflect periods of nutritional stress or illness in the growing child, from which they recovered but which resulted in growth arrest (Roberts and Manchester 1997, 175–7). X-radiographs of long bones were not routinely undertaken, films being used only where some suspected pathological condition required further investigation. Of the five tibiae which were X-radiographed (inc. 245D, male *c.* 45–60 yr), four showed the presence of Harris lines (Table 36), however, as the tibiae were not routinely examined little overall comment can be made on these observations.

Neoplastic disease

Neoplasms or new growths represent the uncontrolled growth of tissue cells (in soft and hard tissue) which remain evident after the stimulus to their growth has ceased (Roberts and Manchester 1997, 186). Benign neoplasms are localised, without any effect on the body in general, and their clinical significance is limited to the size of the growth and its impact on the

Table 36. Number and distribution of observed Harris lines in X-radiographed tibiae

Skeleton no..	*Sex/age*	*No. lines*	*Position*
145	*c.* 4–5 yr	6	in proximal 10 mm of shaft
147	F: *c.* 45–55 yr	8	within 49–100 mm of proximal surface
239	M: *c.* 35–50 yr	1	proximal end
245C	M: *c.* 45–60 yr	3	65–100 mm from proximal end

surrounding structure of the body. Discrete benign lesions represent, with few exceptions, the only skeletal manifestation of neoplasm (*ibid*., 187).

Ivory osteomas – small, smooth, spherical projections of dense bony tissue – were recorded in the frontal bones of three adults, two females (375 and 416) and one male (384) (3/78 adult frontal bones, 3.85%). The largest (375) was 7 mm in diameter, projecting *c.* 1.5 mm; the other two individuals both had two smaller lesions. Such small, asymptomatic lesions are commonly recorded in archaeological skeletal material; Brickley recorded a rate of 1% from St Martin's, the same number of individuals of both sexes being affected as at West Butts (2006, 136).

A smooth bony 'swelling' (*c.* 55 mm long, protruding *c.* 3.2 mm) in the anterior-medial of the proximal right femur shaft from skeleton 131 (adult male) is likely to represent an osteoid osteoma. A similar, though slighter lesion in the right distal tibia from 188 (adult male >25 yr) appears to have a similar cause. These benign neoplasms generally develop in young (subadult or young adult) individuals and are noted for afflicting considerable persistent pain (Roberts and Manchester 1997, 189).

Benign soft tissue tumours may have an impact on adjacent bone structures causing plastic changes to the bone as a result of pressure atrophy. One probable case displaying the effects of such a tumour was observed in the skull of an adult female, 210. The right jugular foramen is greatly enlarged (*c.* 15 mm diameter) with well-defined, smooth semi-circular margins distally and a slight anterior shift to normal of the carotid canal (Fig. 44); a 7 mm diameter smooth-margined lesions anterior of the styloid process extends slightly through the thin anterior wall of the external auditory meatus via a smaller diameter lesion; there is no indication of infection. The lesions suggest the presence of a, probably benign, soft tissue tumour, either a meningioma (arising from the mesothelial lining cells of the dura mater; Ortner and Putscher 1985, 378), Schwannoma/neurilemmoma (derived from the Schwann cells of the nerve sheath; Aufderheide and Rodríguez-Martín 1998, 385–6) or paraganglioma (arising within the ganglion chain of the nervous system).

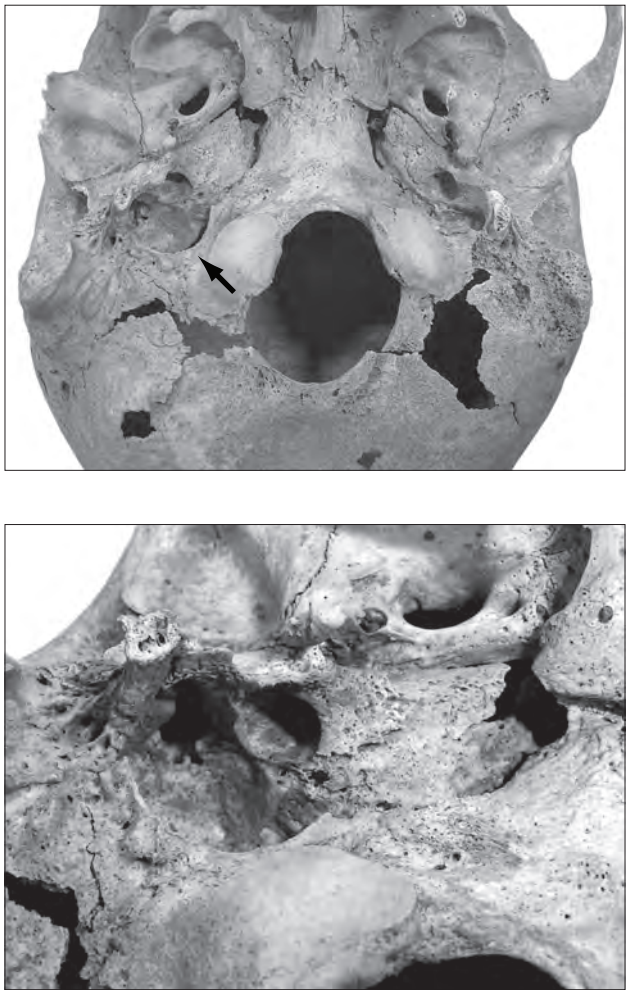


Figure 44 Neoplastic disease: 210 (adult female) Schwannoma, a benign soft tissue tumour in the right jugular foramen a) view of skull base; b) detail of enlarged foramen and associated lesion

Jugular foramen tumours are very rare. Although various forms of tumour – benign and, more rarely, malignant – have been reported in the jugular foramen, clinical studies have found that paraganglioma are most common (68.2% of cases in the study), followed by Schwannomas (20%), and meningiomas (11.7%; Ramina *et al.* 2004). Symptoms indicative of tumours in this area, irrespective of type, are similar and include hearing loss, dizziness/loss of balance, hoarseness, muscle weakness (facial, tongue, arm), headaches, and tinnitus (Carvalho *et al.* 2000; Cummings *et al.* 2004; Macdonald *et al.* 2004; Tabuse *et al.* 2004; Wilson *et al.* 2005). The lesions in skeleton 210, though not conclusive, are believed most like to be indicative of Schwannoma, described as causing gradual enlargement of '... the jugular foramen by pressure erosion and gives an expanded and scalloped but well-defined corticate margin to the jugular foramen' (Macdonald *et al.* 2004). Schwannoma does not normally involve infiltration of the bone, the spread to

the petrous regions suggested by the lesions in skeleton 201 being more indicative of the localised infiltration characteristic of paraganglioma (*ibid.*), however, the general appearance is more suggestive of the former. Meningioma creates a lesion of very different appearance, with irregular margins and loss of normal cortex (*ibid.*), and is not consistent with the features seen in this case.

None of the tumours recorded at West Butts appears to have been malignant or to have been directly related to the cause of death of the individual. Cancers and tumours feature relatively rarely in the London Bills of Mortality for the 18th century (range 0.15–0.7%; Roberts and Cox 2003; graph 6.27) and rarer still in the osteological record (*ibid.*, table 6.28). Many malignant cancers affect the soft tissues and may not present osteological features. Diagnosis presents further difficulties and, as Roberts and Cox point out, at a time when death due to a variety of infections was rife, cancer – predominantly a disease of older individuals – will have played a considerably lesser role than it does in the lives of modern individuals (*ibid.*, 352).

Miscellaneous

Autopsy

The evidence for extensive soft tissue infection in the left facial bones of a 5 year old child (101a/381) was discussed above (p. 87) where it was concluded that the condition causing the lesions was probably responsible for the child's death. It seems likely that there was some debate over the cause of death at the time, leading to the undertaking of a cranial autopsy. The series of overlapping cuts around the cranium was made using a saw, clipping the lambda area of the occipital, extending just superior to the squalmous portion of the parietals and to within 11 mm of the orbits in the frontal bone (Fig. 45).

This burial, dated to 10 July 1813/?8 (coffin plate; Fig. 25), comprised one of the last made within the cemetery. Autopsies became increasingly common through the 18th and 19th centuries, though there is currently no archaeological evidence for the practice outside the major cities where teaching hospitals were situated (CPR 1.62%; Roberts and Cox 2003, 315). Most autopsies, as in the West Butts case, were cranial.

Exostoses

Exostoses is a terms used to describe new bone growths which may develop in association with the musculature close to the bone, often at tendon and ligament insertions, many of which should more correctly be described as enthesophytes (Rogers and Waldron 1995, 23–4). Exostoses are commonly associated with injury or damage to the muscle as a result of strenuous exertion causing bleeding in the muscle tissue with subsequent ossification of the haematoma (*ibid.*, 23). Enthesophytes are new bone formed at tendon insertions and most frequently appear to represent the result of repeat trauma from muscle exertion (*ibid.*, 24–5). Both may be indicative of occupational stress or injury, though other causative factors may include advancing age or various diseases stimulating skeletal hyperostosis (eg, DISH or the seronegative arthropathies). Rogers and Waldron have also suggested that some individuals are 'bone formers', for some reason predisposed to the formation of new bone including osteophytes, exostoses, enthesophytes (*ibid.*, 53). It is not always possible to be conclusive with respect to the aetiology of particular lesions.

Table 37 shows the frequency and distribution of recorded lesions by sex; lesions were observed at five other sites in single cases including the manubrium (female), rib tuberosity (male), thoracic transverse process (male), proximal humerus (male), and navicular (male). Lesions were recorded at 1–5 sites in 55 (76.39%) adults, including a considerably higher proportion of males (24; 92.3%) compared with females (29; 65.9%). No lesions were seen in the few individuals conclusively identified as less than 30 years old but there was no consistent increase in either the number of sites affected or the severity of lesions in individuals confidently aged as greater than 50 years old. There is no substantial difference in the frequency of affected sites between the sexes other than in the femur shaft at the attachment for the major thigh muscles along the linea aspera, where a substantially greater proportion of males in comparison to females had lesions.

In the majority of cases there was no evidence to suggest a specific cause for lesions and it is most likely

Table 37. Distribution of the most commonly occurring sites with exostoses/enthesophytes by sex

Skeletal element	*Female*		*Male*	
	No.	*CPR (%)*	*No.*	*CPR (%)*
Calcaneum (Achilles tendon)	14	31.82	7	26.92
Patella (anterior surface)	14	31.82	7	26.92
Iliac crest	13	29.54	9	34.61
Femur shaft (*linea aspersa*)	4	9.09	6	23.08
Distal humerus (epicondyles)	5	11.36	2	7.69
Proximal tibia (tuberosity)	3	6.82	1	3.85
Proximal ulna (olecranon)	3	6.82	3	11.54
Proxial femur (notch)	3	6.82	1	3.85
Radial tuberosity	1	2.27	2	7.69
Ischium	1	2.27	2	7.69
Hyoid	1	2.27	1	3.85
Distal fibula	2	4.54	–	–

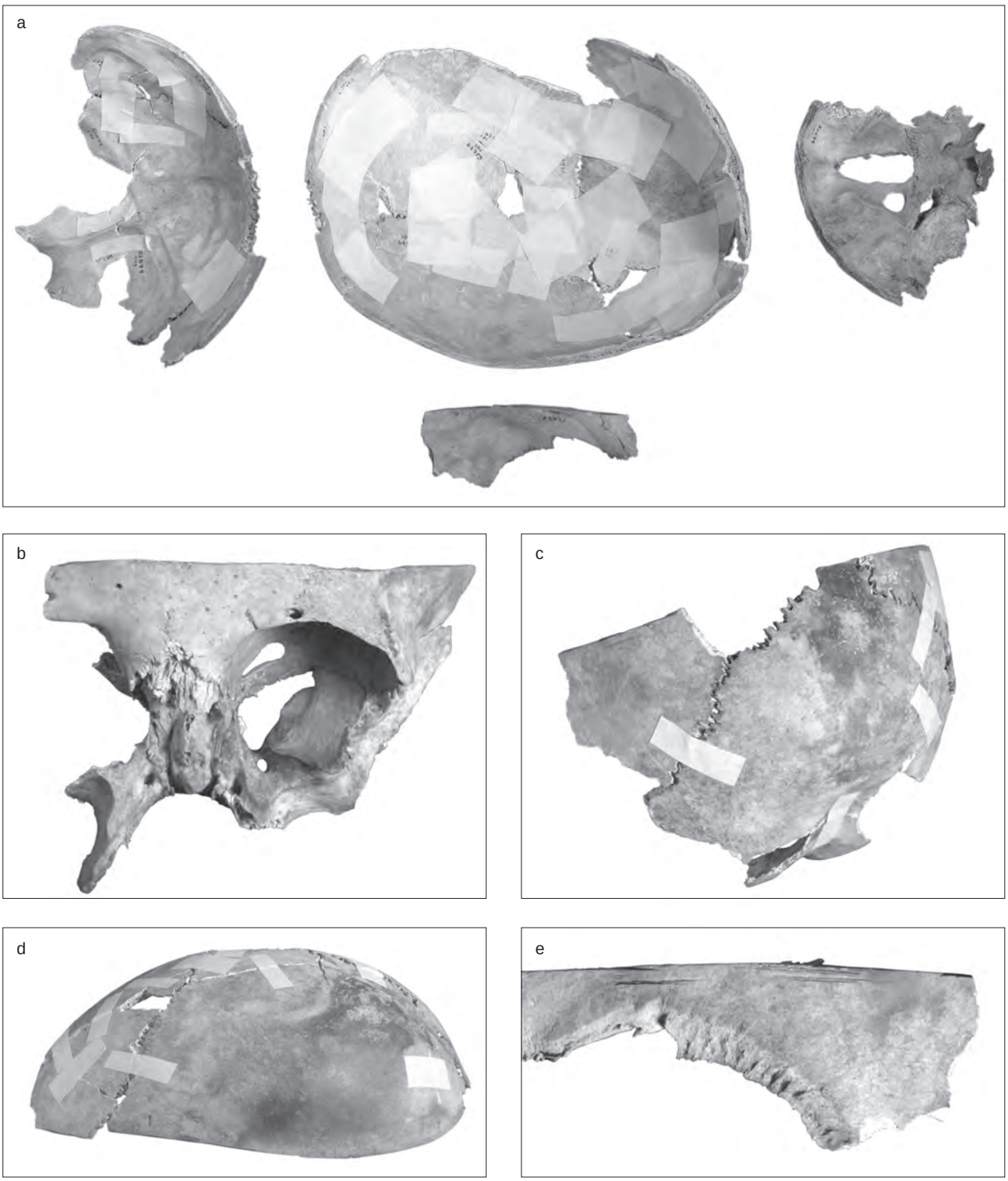


Figure 45 Cranial autopsy (101a/381 juvenile); a) endocranial view showing all cut surfaces; b) anterior view of frontal cuts; c) left disto-lateral view of cuts to occipital; d) detail of cuts to left inferior parietal; d) right side cut cranium

that they reflect years of the 'normal' everyday stresses on the skeletal musculature. Lesions at the Achilles tendon (flexor muscles of the foot) insertions on the posterior surface of the calcanea, the various abdominal, shoulder, hip, and thigh muscle insertions along the posterior margins of the iliac crest (pelvis), and extensor muscle attachments on the anterior of the patella, are generally the most common sites for these lesions, reflecting the normal stresses on populations who's common form of transport was their own legs, irrespective of any more specific stresses from, say, bending and lifting. There is – as

with many of the joint lesions – an unsurprising indication that the males, in general, experienced more physically demanding lifestyles than did the females.

Bi-lateral lesions at the short planter ligament insertions (in addition to those at the Achilles tendon) in the calcanea from 148 (male *c.* 50–60 yr) suggest either a weakness in the arch of the foot creating additional pressure during locomotion or an occupation which would create such stress. Other lesions in this individual's skeleton also suggest a physically strenuous lifestyle probably involving heavy lifting and carrying. Lesions around the right elbow joint (left upper limb not recovered) of skeleton 201 (male >50 yr) also suggest occupational stress. In addition to exostoses in the humeral epicondyles, ulna olecranon and radial tuberosity, the pronator muscle attachments of the forearm are strongly marked in this individual indicating strong and repeated actions linked to a specific trade (see Table 38). One case was indicative of soft tissue trauma (skeleton 147; p. 79) and another could be linked to DISH (252; p. 84).

Calcified cartilage

As with other forms of new bone, there may be a variety of triggers to the calcification/ossification of cartilaginous material within the body, including bone forming diseases such as DISH and a predisposition to hyperostosis (see above, p. 90). In most cases, however, advancing age is a major factor, both in terms of the degree and extent of calcification. Of the 18 adults with calcified cartilage, 13 were female (29.5% females) and five male (19.2% males). Fragments of rib cartilage were most commonly recovered (16 cases), sometimes in fairly substantial amounts, with fragments or whole calcified thyroid cartilage in six cases.

Unusual coalition

An unusual occipito-atlas coalition was observed in the remains of a 14–18 year old male (288A), together with several other unusual features in the C1–2 (Fig. 46). There are small (8 x 7 mm in occipital, 9 x 5 mm in atlas) areas of coalition in the inferior margins of right dorso-lateral foramen magnum border 5 mm from central line and in the superior of the atlas posterior arch just right (5 mm) of the central line. There is a 7 x 4 mm area of similar appearance on the inferior-anterior of atlas left transverse portion. The anterior atlas facet does not have a proper surface, being totally obscured by a smooth overgrowth of new bone – uneven at the closing edges – with no indication of how or where the odontoid peg of the axis could have articulated. Both the lesions in the occipital and those in the neck vertebra suggest that this individual could not have moved their head with ease or to the normal degree, which is further supported by the presence of osteophytes on the margins of the occipital condyles. There are numerous indications – dental hypoplasia, *cribra orbitalia* – that this young individual had not experienced the most healthy of childhoods, and the presence of both periosteal and endosteal new bone suggest he may have died as the result of an infection. The cause and overall effect of the morphological variations in the upper neck remain enigmatic.

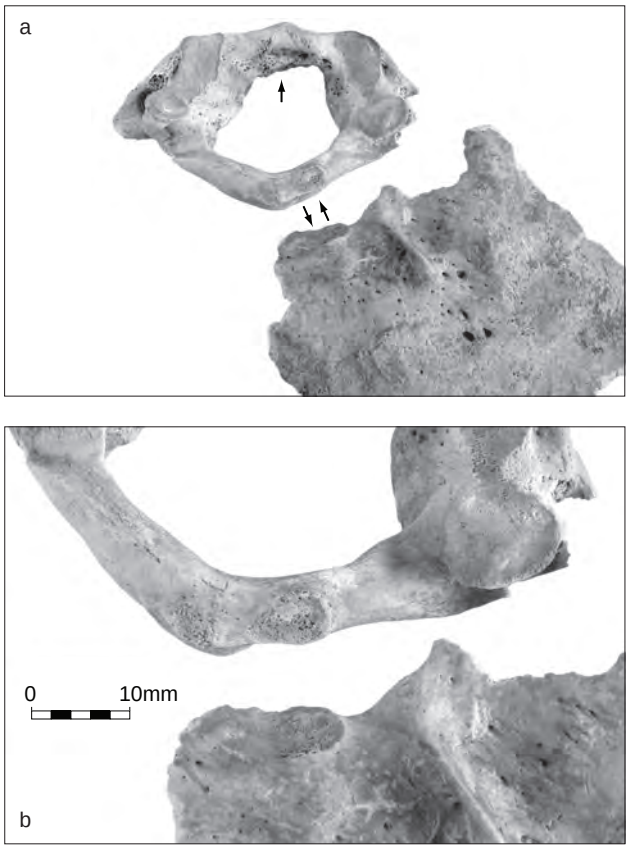


Figure 46 Occipito-atlas coalition; 288A (subadult) a) superior view of atlas vertebra and exocranial view of occipital bone showing vertebral facet variations and occipito-atlas coalition (arrowed); b) detail of coalition

Occupation

The various lesions and diseases of a 'degenerative' nature seen in the joints, together with evidence of trauma, and the frequency and distribution of exostoses/enthesophytes (see below), provide osteological indications of the physical stresses placed on the skeleton during life. Many of these stresses will be reflective of an individual's lifestyle, their occupation and potentially their economic and social status. What is gained is, however, only a general impression and it is not possible to state with any confidence that lesions are indicative of a specific occupation. A variety of occupations can create similar

stress indicators within the skeleton and, for any one individual, a combination of different factors may be involved in details of the skeletal morphology.

It is not particularly surprising that the skeletal remains from West Butts give the overall impression that males, in general, experienced a more physically demanding lifestyle than the females. The form and distribution of various lesions in the male skeletons suggest stressful activities involving heavy lifting and carrying, and strong core body movement/support, with strong upper limb movement probably undertaken within a confined space perhaps more suggestive of a trade rather than more mobile activities. Females seem more likely to have been involved in close work resulting in repeated strain on the neck and using – often strong – movements in the upper limb. Several of the females were so small and very gracile, almost child-like, they do not give the impression of having placed much, if any, physical strain on the skeleton at all. The trauma rates for both sexes is very low, indicting a low involvement in high stress industrial or agricultural jobs. This suggests that there may have been relatively few ordinary seamen amongst the congregation buried within the cemetery.

The comparative frequencies of various lesions suggests those burying their dead at West Butts were not amongst the poorest members of Poole's population; whilst unlikely to have formed the upper echelons they were probably relatively 'comfortable'. Fracture rates and those for some of the joint diseases are below those from contemporary, largely urban, cemeteries. For those joint conditions where higher rates were observed, this may reflect greater longevity amongst the West Butts population rather than greater than average levels of physical stress.

Data from various documentary sources provide insights into the occupations and potential lifestyle of many – mostly the male – occupants of the town. Sydenham's summary of the population data for 1811 states that 1032 of the 1104 families in the town (93.48%) '... were employed in trade, manufactures, or handicraft, and none in agriculture' (1839, 450); in the absence of a specific statement on numbers, it is assumed that 'trade' includes seamen. The absence of agricultural workers is not particularly surprising given the town's slightly isolated geographical location and the nature of the land in the immediate vicinity (see Chapter 1).

The importance of merchant sea-trade to the town, both costal and deep-sea/Atlantic traffic, has been discussed above and in Chapters 1 and 5. Figures suggest that *c.* 21% of the town's inhabitants were seamen of various standing (Hutchins 1803, 1; *Universal Directory* 1798); the PCC Wills for Poole (1750–1800) show *c.* 17% of those sufficiently prosperous to make a will to have been Naval or merchant mariners (National Archive Document). A stressful occupation, particularly for those on long voyages who may not only have had to face the perils of sea travel in stormy weather with all the physical hardships that may entail, but who may also have been subject to shortages of fresh food and water.

For those who were generally occupied on dry land, the *Militia Ballot Lists* of 1757–1799 provide a useful illustration of the types of employment undertaken by those men between 18 and 50 years old (Table 38; Medlycott 1999). The *Lists* are not exhaustive; not all have survived, occupation was not always stated and it is obvious that certain occupations were not included, there is, for example, a distinct shortage of seamen/mariners (their frequent absence and 'reserved' occupation excluded them from inclusion). Some 109 different occupations are listed for 911 individuals, Table 38 showing the most common listings. About 94 individuals (10.65%) were in trades directly linked with the sea; staymakers, blockmakers, rope and sailmakers (37), shipwrights, mariners/seaman (26), and a pilot (neither of latter can be truly representative of Poole's population). Those with trades at least partly linked to the maritime economy (*c.* 153; 16.79%) include braziers (brass workers), joiners and carpenters, blacksmiths, coopers, sawyers, hempdressers, and a nailer; customs and excise officials, and merchants; victuallers, brewers and

Table 38. Most common occupations of Poole males in the late 18th century (from *Dorset Militia Ballots Lists* 1757–1799; Medlycott 1999)

Occupation	*No.*	*%*	*Occupation*	*No.*	*%*
Labourer	75	8.23	Bricklayer	18	1.98
Cordwainer (leatherworker)	65	7.13	Grocer	18	1.98
Joiner/carpenter	58	6.37	Clerk (various)	17	1.87
Gentleman	48	5.27	Cooper	16	1.76
Baker	47	5.16	Constable	15	1.65
Servant	37	4.06	Butcher	15	1.65
Tailor	30	3.29	Sailmaker	14	1.54
Victualler	28	3.07	Customs/ excise officer	13	1.42
Mariner/seaman	26	2.85	Painter	13	1.42
Merchant	25	2.74	Barber	13	1.42
Ropemaker	23	2.52	Shopman	11	1.21
Shipwright	20	2.19	Stonemason/ cutter	10	1.10
Blacksmith	18	1.98	Shoemaker	10	1.10

maltsters. Those individuals listed as 'gentleman' (all supposedly under 50 years old) are likely to include 'retired' tradesmen (noted changes in 'occupation' listed in subsequent years for what obviously comprised the same individual).

Of the occupations listed 15 are likely to have involved hard physical labour, predominantly involving upper body and core muscles, though most of these jobs would be undertaken standing and required strong lower limb muscles as bracers and supports. If those included in the list represent a realistic sample of the population this would include at least 45.11% of the town's males. A further *c.* 10.65% were in occupations requiring repetitive actions, often undertaken in poor lighting (open to accident and/or errors) and in uncomfortable positions involving poor posture inevitably leading to back problems and repetitive strain.

There is little direct information with regard to female occupations which probably included a higher proportion of servants and shopworkers, and jobs within lighter manufacturing and trade. One trade females were recorded as being involved in was as commercial bakers; 11 of the 475 individuals (2.3%) included in the List of Millers and Bakers for 1798 (extracted from the 'Returns of the Petty Constables and Tithingmen') were female, including one – Susan Hayward – from Poole (Medlycott 1999, 12). Sixty-one (28.5%) of the PCC Wills for Poole (1750–1800) are those of women; most are recorded as widows (43), the only other status recorded being 'spinster' (14) or 'wife' (four). Although potentially actively engaged in house or childcare, the implication is that most of these women were 'gentlefolk' who would have been involved in minimal physical occupational activity.

CHAPTER 5
NONCONFORMITY AND BAPTISTS IN 18TH CENTURY POOLE

Sue Johnson and Jacqueline I. McKinley

The covenant drawn-up on the establishment of the West Butts Street chapel, with its record of the date of foundation and the names of the original 15 members of the congregation (frontispiece), provided a promising starting point for the documentary research into the Baptist congregation. Despite extensive expenditure of time and effort, however, frustratingly little detail has emerged about those individuals or the life of the chapel. Biographical data from coffin plates and studs (see Chapters 2 and 3) was scarce and incomplete. One fortuitous survival (dated 1813/?8 in grave 379) demonstrated that burials continued to be made after the demise of the West Butts congregation and the demolition of the chapel at the end of the 18th century, suggesting that the burial ground had served more than one Baptist group.

A large variety of published and unpublished (Appendix V) sources was consulted, including the standard works on English Baptist history and studies of Nonconformity in Dorset and Poole, and a number of sources commonly used in the study of family history. However, despite the general wealth of information gathered with regards to 18th century Poole, its population and economic status, and the growth and spread of Nonconformity and the Baptist movement in the town, few direct conclusive links with the West Butts congregation were forthcoming. What it has been possible to do is form an impression of the world in which the members of the congregation would have lived and worshipped.

Definitions of the different forms of Non-conformist religious groups referred to in this volume and the various terms used to describe them can be found in the Glossary (Appendix IV), together with a description of the main 17th and 18th century laws which affected their social and religious lives.

Documentary source material

Each Baptist church is a separate body, governed by the church meeting which takes all decisions. Consequently, there is no central headquarters where systemised records of ministers and local churches are kept (Breed 1995, 1–3). Individual churches choose whether to join organisations such as area assemblies or to remain completely independent. If a church chooses to join an area Baptist Association then references to it may be found in the association's minute books, etc, if these survive. An extant church may keep its own records or may have deposited them elsewhere. Where churches/congregations no longer exist records may be found at County Record Offices, the Angus Library (Baptist Archive, Regents Park College, Oxford), or may remain in private hands. Unfortunately, for the purpose of this research, the West Butts congregation seems to have elected to be independent. Consequently, despite the alluring existence of references to its date of establishment and those who formed the initial core of its congregation, any further details pertaining to the church or records associated with or alluding to it, either never existed or have not survived.

Following the introduction of a national system of registration of births, deaths, and marriages in England and Wales in 1837, Nonconformist churches were required to deposit their registers. Not all congregations did so and a further collection was made in 1857. About 9000 registers were sent in and can be found at the National Archives, Kew (series RG 4,5,6, and 8). Baptist records are perhaps the least extensive with 431 chapels surrendering registers in 1837 (Pelling 1990, 57); the registers can be inspected on microfilm

at the National Archives. Most, though not all, filmed registers are preceded by a certificate and questionnaire giving information about the types of register which exist, the dates they cover, who looked after them, etc. The minister of the Hill Street Baptist Church, Poole (Fig. 14), in 1837 replied to the question '... Have you in your custody or power the Register Book (not parochial) of any other chapel or Burial-ground?' in the negative (RG4/2411). Two years later, when referring to the previous Baptist society (West Butts), Sydenham also stated that the then existing congregation '... possesses no records of its existence and progress' (1839, 346).

What records were originally kept for the West Butts chapel can only be a matter of conjecture but there would presumably have been a list of members/baptisms and minutes containing the outcomes of church meetings. There may never have been a register of burials as this does not seem to have been a high priority among early Nonconformist chapels; in the certificate accompanying the registers of Poole's Independent Church in Skinner Street (Figs 14 and 47) when they were sent to the Registration Commissioners in 1837, the minister stated that 'We had not, it is true, much burying ground, nor many burials in our ground until 1810 or 12, but the ?fault is, I kept no burial register regularly, until that period' (RG4/1229). Although a minimum of 100 burials are known to have been made within the cemetery at West Butts between 1735 and at least 1813, none appears on any surviving register.

The survival or otherwise of church records from the 18th century seems to have been to some extent a matter of luck, as illustrated by the example of those of Wareham Independent Chapel, Meeting House Lane, Dorset. When these were sent to the Registrar General's office in 1837 it was stated that the register had been received from Mary Champ of Wareham. She had looked after it since 1829 when she obtained it as executor of John Budden, a trustee of the meeting who had received it from Esther Reader, widow of the one-time minister John Reader (RG4/60). Thus, the history of Poole's first Baptist Church – that at West Butts Street – can only be pieced together from references in secondary sources.

Through a notice in the *Society of Genealogists' Magazine* appealing for information on the West Butts Street chapel, contact was made with John Spinney, son of the John Spinney who undertook the research into the history of the Hill Street Baptist Church for the commemorative booklet *These 150 Years* (Coffin *et al.* 1954). Following his father's death he had handed over all the research notes to the church. It is unclear how much of the church's small archive, held in two boxes, comprises that formerly held by Spinney, as none of the current congregation was familiar with its contents prior to the current research. There are certainly some of Spinney's typed notes and some of the other documents are annotated by hand, probably by Spinney; it also seems likely that some of the photocopies of older documents may have been made by him. Several of the documents within the archive were relevant to the current research, making reference to, or pertaining to, the West Butts Street chapel and burial ground. These included: photocopies of the 1735 foundation declaration (the original no longer survives and may have been destroyed in a small fire at the church in 1987; frontispiece); a photocopy of the 1806 Hill Street congregation registration certificate (endpiece); a photocopy of the first page of the Hill Street Church book with references to the demise of the West Butts Street congregation and their own formation (endpiece); extracts from the Hill Street Church minute book in 1817 with reference to payments for interments; and a copy of the 1905 'Joint statutory declaration as to the title of the Baptist community at Poole to a piece of land in West Butts Street ...'

Wills were judged to offer the best source of information for named individuals associated with the West Butts chapel as they give names, occupations, addresses, and usually directions for burial. Not everyone, however, left a will, and married women were not permitted to make wills before 1882, their property being deemed to belong to their husbands. Before 1858 the proving of wills was a matter for the ecclesiastical courts, of which there were various types. The determination of where a will was proved was complex, but for Poole's inhabitants the most likely choices were the Canford Magna and Poole peculiar court (a peculiar being a district which fell outside the normal ecclesiastical jurisdiction; see below) or, for larger or more complex estates, the Prerogative Court of Canterbury (PCC; kept at The National Archives). In cases where a person dies without leaving a will Letters of Administration (admons) must be granted (indexes at the Family Record Centre, Myddleton Street, London).

Although Dissenters would not have their children christened in the parish church it was common for a record of the child's birth to be entered in the register in case of any later dispute about parentage or whether s/he was entitled to parish support. As a result of *Hardwicke's Marriage Act* 1753 (see Appendix IV), between 1754 and 1837, everyone except Quakers and Jews had to marry in the parish church. Since marriage was after banns or by licence it is likely that Dissenters would choose to have a licence to avoid having to attend the parish church for the banns to be read. The register of baptisms for Poole St James (Fig. 14), as transcribed in alphabetical order by the local Family History Society, was examined, together with some of

the entries for marriages; as the records are not presented by year a comprehensive search would have been very time consuming and was not undertaken within the bounds of this project.

Substantial parts of the *Militia Ballot Lists* for Dorset, taken over several years in the latter half of the 18th century, survive, the records for Poole covering the years 1759, 1796, 1798, and 1799, with a total of 1057 entries (Medlycott 1999). Male civilians between 18 and 45–50 years were listed, being required, if needed, to find the money in the form of a 'bounty' or fee to pay for a man willing to serve in the county militia or to serve themselves. If an individual was exempt for any reason – and there were several factors which might lead to exemption such as disability, those who already served in one of the voluntary military services or had 'reserved' occupations – they may still appear in the list but be 'crossed-out' (co).

Although the first national population census in England and Wales was taken in 1801, the books in which the enumerators recorded the details of households in their districts do not survive for the years prior to 1841. The originals are part of The National Archives collection (available as microform/electronic format). House numbers are very rarely used in the returns at this time and the West Butts area of Poole is no exception. Unfortunately the microfilm copy that was seen at the Family Records Centre was poor quality (most of the 1841 returns were written in pencil) and the entries hard to decipher. National trade directories which include Poole date from the end of the 18th century but the earlier ones only list traders without any address.

Seventeenth–early 18th century nonconformity

Dorset

Various doctrines and practices of the Established Church had been subject to minor dissent of one form or another almost throughout the history of the Christian Church, reaching a major turning point with the Protestant Reformation of the 16th century. Until the second half of the 19th century the usual term for Protestants who worshipped outside the Established Church was 'Dissenter' (Appendix IV). The term 'Nonconformist' – nonconformity representing a '... refusal to conform to the doctrines, polity, or discipline of any Established Church ...' (Cross and Livingstone 1997, 1159) – was first used for those Puritans who were part of the Church of England, but who declined to conform to certain practices prescribed by the *Prayer Book* of 1559 (*ibid.*; Davies 1975). The practice persisted throughout the 16th and 17th centuries, the latter seeing a major rise in the establishment of Protestant Dissenting communities across Europe including Baptists, Congregationalists, Presbyterians, and Quakers (see Appendix IV). The execution of the 1662 *Act of Uniformity* – reintroducing the *Book of Common Prayer*, mandating its public assent by all ministers and exclusive use thereafter – marked the formal beginnings of Nonconformity in England (Cross and Livingstone 1997, 1159; Davies 1975); '... some 2,000 Presbyterian ministers who refused to conform were ejected from their livings' (Cross and Livingstone 1997, 1658). The *Corporation Act* of 1661, requiring all members of municipal corporations to take an oath abjuring all rebellion against the king and affirming they had received Communion in accordance with the rites of the Church of England within the year preceding their election (Appendix IV), until its repeal in 1828, denied government or corporation office to all dissenters (*ibid.*, 420), which at this time would have included Roman Catholics. The names 'Separatist', 'Dissenter', and 'Nonconformist' were all negative terms, emphasising deviation from the accepted norm and carrying with them the implications of inferiority and second-class citizenship (Watts 1985, 1–3).

The stringent laws against Dissenters, operational for most of the 17th century, including the '*Five Mile Act*' of 1665 and the *Conventicle Act* of 1670 (Davies 1975), meant that Nonconformist churches and ministers were reluctant to keep registers of their members, so it is difficult to estimate how strong the movement was at this time. The ecclesiastical survey of 1676, generally known as the Compton Census, attempted to establish how many communicants, Roman Catholics ('papists') and Protestant Dissenters, there were in each parish (Whiteman 1986, xxiii). The returns, the result of inquiries sent out by Gilbert Sheldon, Archbishop of Canterbury in January 1675/6, unfortunately do not include any detailed information for Dorset and only the summary page survives (*ibid.*, xxiv and 547). This gives the number of inhabitants over the age of 16 years within the county as 59,000, and states that there were 199 papists and 1600 dissenters (*ibid.*, 550).

In 1715 a committee of London ministers asked correspondents throughout England and Wales for '... the location of every Dissenting congregation, the name of its minister, the number and quality of his 'hearers' [members of the congregation], and the number of votes the congregation could command' (Watts 1985, 268). The survey took three years to complete and at least two records of it were compiled. The fuller of the two, by Dr John Evans, a Presbyterian

Table 39. Results for England and the county of Dorset from the 1715 survey of Protestant Dissenting congregations (data from Watts 1985)

	England		*Dorset*		
	Est. nos	*% total population*	*No. congregations*	*No. Hearers (members)*	*% population*
Presbyterians	179,350	3.30	20	5090	5.68
Independents	59,940	1.10	2	880	0.98
Particular Baptists	40,520	0.74	3	660	0.74
General Baptists	18,800	0.35	2	310	0.35
Quakers	39,510	0.73	23	350	0.39
Total	338,120	6.21			8.14

minister, is now in Dr Williams's Library (Gordon Square, London). His list does not include Quakers but their numbers can be estimated from contemporary Quaker records. Using this data Watts estimates the numbers of Dissenters in England and breaks down the figures by county, illustrating the nature and extent of dissent nationally and in Dorset (Table 39: Watts 1985, tables ii and xii).

Information on meeting houses and preachers can be found in records of the licences which were issued and in the evidence of surviving buildings, while details of individuals who fell foul of the law are found in court records. From the 18th century there are also church registers and other records. In Dorset more than 60 Nonconformist ministers resigned their livings in 1662 following the *Act of Uniformity*. By 1672 '... many groups of dissenters were active and numerous licences were issued, particularly for Presbyterian preachers and meeting places ...' (Stell 1991, 103; Davies 1975). In 1684, John Miller, pastor of the General Baptist church at Minterne was fined (Watts 1985, 232, quoting Taylor 1818, 298) – presumably for contravention of the *Conventicle Act* – and in 1685 one of those hanged at Dorchester for supporting the failed rebellion of the Duke of Monmouth was Samuel Lark, the Baptist pastor of Lyme Regis (Davies 1975; Stell 1991, 103).

Congregations were small and persecuted, and meetings in people's homes, a convenient barn or the open air were common. As they gained in strength and the law was eased the first meeting houses were established in converted buildings, eg, in cottages at Charmouth *c.* 1689 and Weymouth *c.* 1703–5 (*ibid.*, 103). The earliest surviving meeting house '... is that built by the Quakers in Sherborne ... about 1693' (*ibid.*).

Dissenters have always been a minority in England, with only about 6% of the total population of England and Wales being in any way associated with a Dissenting meeting house in the early 18th century (Watts 1985, 1–3). The percentage of the population represented by the Dissenters in the 1715 survey was slightly higher for Dorset than in the country as a whole (Table 39; Bettey 1973, 75). The national predominance of Presbyterians and Independents is also reflected in the figures for Dorset, the greater than average figures for the county apparently being accounted for in these two groups. The figures suggest that Presbyterian congregations within the county averaged *c.* 254 members each, and substantial numbers were known to exist at Lyme Regis (Stell 1991, 103). There were few Baptist congregations, though each seems to have averaged *c.* 194 members (Table 39).

There were, again, considerable numbers at Lyme Regis, whose meeting house may date from the 18th century, but the '... only other Baptist building of that century is in Wimborne' (*ibid.*). The number of Quakers recorded was only slightly greater than for the Baptists but the number of congregations was substantially higher, suggesting an average congregation size of 15. This implies a quite different distribution of Quaker and Baptist congregations, perhaps reflecting a different appeal between the two practices.

It is difficult to generalise about the social and economic status of Dissenters as few of the available records have concrete evidence about occupations. What there is suggests that Dissent:

> '... appealed chiefly to the economically independent – to men who were dependent neither on the favour of the King and his ministers for social and political advancement, nor on the parson or squire for their daily bread ...'

and that

> '... within those manufacturing and commercial communities in which Nonconformity thrived, Dissenters were not distinguished by occupation or social status from the population at large ...' (Watts 1985, 346 and 353–4).

Male members of the gentry or aristocracy who had to worry about the political consequences of their actions were unlikely to join a Dissenting congregation but their wives and widows might do so. The same might equally apply to men in the lower echelons who might aspire to some form of government or

municipal office from which they would be barred by the 1661 *Corporation Act* if they declared their membership of a Nonconformist congregation and refused communion with the Church of England. This could, at least in part, account for the predominance of females amongst those named as the founders of various Baptist (and presumably other) congregations (Doel 1890; see below).

Surviving evidence also suggests that '... a much higher proportion of Dissenters than of the population at large were engaged in commerce or manufactures as merchants, tradesmen, or self-employed artisans ...' (Watts 1985, 360–1). This was partly due to the restrictive conditions prevailing at the time which excluded them from polite society and the English universities, and encouraged them to concentrate on scientific, industrial and commercial enterprises (*ibid.*). Although Dissenters had, as a result of the 1689 *Toleration Act*, freedom to meet and set up churches, in many ways they remained second-class citizens because of their faith. Being a Dissenter made continuous demands on the purses of the members of the congregation; not only was there the minister to pay, there was the meeting house to build, and once built, to maintain. Watts states that General Baptists were '... probably the poorest of all the Dissenting denominations ...' (*ibid.* 380) but members of the congregation needed to be reasonably prosperous in order to keep the church going. In the case of the Newport Baptist chapel, work on demolishing the existing meeting house and putting up a new one in 1774–5 cost a total of £495 10s 1d, a very considerable amount of money at the time, of which £300 was promised by just nine subscribers (Isle of Wight Record Office NC/U/33).

The members of each Baptist congregation choose their own minister, who has not necessarily undergone theological training or ordination but is simply the person in pastoral charge for the time being (Breed 1995, 1–3). In the early 18th century the stipends paid to Dissenting ministers were similar to those of the poorer Church of England clergy, but few had any security of tenure or were provided with a house. Those who were not of independent means and whose stipends were insufficient were expected to follow other occupations to raise the necessary income. Writing in 1772 Ebenezer Johnston, minister of the Presbyterian meeting in Lewes, Sussex, observed that the Baptist preachers were '... generally laymen and engaged in secular employments' (Watts 1985, 342–4, 489). The well-being of a chapel, in terms of the size of its congregation, was very much dependent on the personality of its minister. A popular one could attract large numbers and lead to a thriving community, while one who did not find favour could soon cause the chapel to go into a decline, and possibly cause members to leave to found their own 'breakaway' organisation with a pastor more to their liking.

It was common for there to be more women than men in Nonconformist congregations, possibly for the reasons mentioned above. However, only male members could take part in church business, though women might be permitted to attend meetings as observers (Watts 1985, 320). Men and women usually sat apart, with the men's side of the meeting house designated by the row of wooden hat pegs. Probably the most important function of chapel meetings was to decide who could be a member and this had two aspects; who was permitted to join and who should be expelled for unacceptable behaviour. Baptist chapels generally required evidence of religious experience from prospective members, which would have to be examined in the case of those who had not been members of Baptist congregations elsewhere (*ibid.*, 391). For those who had, a letter from the minister of the relevant chapel was usual. Members whose lives were deemed to have brought discredit on the church, for example by drunkenness, bankruptcy, immoral behaviour, or failure to attend church without good reason such as illness, were disciplined (*ibid.*, 331). If their behaviour continued then they could be expelled. Most Particular Baptist chapels and all General Baptist chapels tried to ensure that their members married only within the faith, with the strictest ex-communicating anyone who married outside (*ibid.*, 329–30). This caused particular problems in congregations where women considerably out-numbered men as there were not enough potential partners (see p. 63). The severity of discipline varied from church to church; particularly harsh application for minor transgressions meant that the existing membership was liable to depletion (*ibid.*). If this was coupled with extremely strict entry criteria then new membership would be unlikely to be numerous.

Poole

The parish of St James, Poole:

> '... was for many generations a royal peculiar, and, as such, exempt from the jurisdiction of the Bishop's court, and the appointment of the minister was in the hands of the inhabitants, exercised by them through the Mayor and Corporation ...'. (Densham and Ogle 1899, 181)

Most of Dorset belonged to the Bishopric of Bristol which was among the poorest of the dioceses and tended to be used as a stepping stone to other

positions, with incumbents not remaining there for long (Bettey 1973, 74). Together with the distance between Bristol and Dorset (Fig. 4) this meant that few bishops undertook visitations which allowed Nonconformist practices to continue and flourish. As a thriving port, Poole was exposed to influences from continental Europe and the New World where the Puritan/Protestant movement was vigorous, and its prosperity offered the inhabitants greater freedom to follow their Nonconformist religious inclinations as they were not dependent on the goodwill of 'the establishment' for their livelihood. These various factors, together with Poole having been created a county in its own right in 1568 (Sydenham 1839, 179), gave its inhabitants a degree of freedom from external control unknown in any other part of Dorset and helps to explain the strength of Nonconformity in Poole in the 17th and 18th centuries.

The town's population appear to have been early converts to the opinions of the Reformation, with the Reverend Thomas Hancock, who was appointed rector in 1546 and later had to flee to Geneva to escape persecution during the reign of Queen Mary, describing them as '... the first thatt in thatt parte of England were called Protestants' (Densham and Ogle 1899, 181). Their occupations as merchants, manufacturers and seamen, rather than cultivators of the soil (pp. 97–9; Table 39), encouraged these views. When the Civil War broke out Poole, as might have been expected, took sides with Parliament, and became the headquarters of the Parliamentary party in Dorset (*ibid.*). In 1642, Josiah White, who had 'strong Presbyterian sympathies', became rector. It is probable that at this time Puritan and Nonconformist principles were dominant in Poole (*ibid.*).

Early references to Dissenters in Poole are fragmentary and it is not possible to determine how long the various congregations survived. The earliest reference to Baptists comes in a letter found on John Sims, a shoemaker from Southampton, who was arrested while preaching without permission in Bridgwater, Somerset. The letter, dated 20 April 1646, was sent by Thomas Collier from Gilford (Guildford) 'To the Saints in the order and fellowship of the gospel in Taunton ...', telling them that '... He [the Lord] hath gathered saints in *Pool* by me. *Fourteen* took up the *ordinance* at once; there is like to be a great work ...' (*Baptist Quarterly* 24, 100, 107). Collier came from Luppit (Upottery), in Devonshire; he was a minister of some eminence, who was employed in itinerating through Hampshire and the West of England on behalf of all the churches (Doel 1890, 10).

A decade later, when George Fox, the Quaker, visited Poole at the start of 1656, the meeting is said to have been held at the house of Walter Spurrier, a Baptist. Fox's teaching persuaded the Baptist minister, William Baily or Bayly (a shipmaster), to join the Society of Friends, of which he later became a prominent member (Ivimey 1814, 598; Coffin *et al.* 1954).

When the 1661 *Corporation Act* came into effect the mayor, water bailiff, recorder, and 17 other of the town's municipal office holders were ejected 'Many of them were well-known Nonconformists' (Densham and Ogle 1899, 183). Following the passing of the 1662 *Act of Uniformity*, 50–60 Dorset ministers who felt unable to assent to its requirements lost their livings, '... the Rev. John Wesley, M.A., Vicar of Winterbourne Whitechurch, near Blandford...' being amongst those '... ejected or silenced ...'(*ibid.*). Wesley (1636–1670) was the grandfather of John and Charles Wesley, the founders of Methodism. He had studied at New Inn Hall, Oxford and became the vicar at Winterbourne Whitechurch in about 1657. He had been arrested in 1661 and committed for trial at the Dorchester assizes. The trial ended in adjournment, but before the next hearing he had lost his living due to the *Act of Uniformity*. The family subsequently moved to Preston, near Weymouth from where he went on preaching expeditions and '... Poole became one of his preaching-places, and, as far as we know, the earliest and principal of them' (*ibid.*, 184–5). In about 1663 Wesley was invited by a number of people at Poole to be their pastor. The church at Poole '... was unquestionably a Congregational church ...' and he became its first minister. He held services as privately as possible but was several times arrested and four times imprisoned, once at Poole for six months (*ibid.*).

The Congregational church at which Wesley had been minister may have been the same one which subsequently received grants from the Congregational Fund Board from 1695–1704. The Board held its first meeting on 3 December 1695 at which it granted '... £5 to the people of the congregation in Poole'; it also allowed £10 in 1696 and 1697 (Densham and Ogle 1899, 188). In 1698 it was '... ordered that there be allowed to Poole in Dorsetshire, provided they continue to allow at least £20 beside to their pastor, £10'. This sum continued to be paid up to 1704 (and possibly later but the relevant records are missing). 'The congregation would appear to have been small and poor – poor enough to need assistance in order to pay £30 a year to their minister, and too poor to provide themselves with a suitable place of worship' (*ibid.*). In 1698 the fund managers resolved that Rev. Stephen Lobb of Fetter Lane, London should advise Mr King (a student) to go down to Poole to act as minister.

Records survive of only three licences issued in Poole following the *Declaration of Indulgence* in 1672 permitting public worship by Nonconformists under licence (Davies 1975), figures which seem to underestimate the spread of Nonconformism in the town in the light of other evidence. In 1670 Mr Aire's

malthouse was licensed as an Independent meeting house and two years later Mr Minty gained a licence to be an Independent teacher there (Lyon Turner 1911, 1127–43). In the same year Mr Samuel Ball's request for a licence to preach in Mr John Collins' house in Marden was refused but '... Mr. Edward Tayler's house in Poole ...' was allowed (*ibid.*). These entries were made in the 'Congregational' section, and there are no Poole entries in the Baptist, Presbyterian (the most numerous) or Quaker sections (*ibid.*).

In 1667 Samuel Hardy became rector of St James's Parish Church. He had been brought up as a Nonconformist and for several years he managed to conduct services which were basically Puritan (Densham and Ogle 1899, 185). In 1681 the grand jury of Dorset complained to one of the assize judges that Poole was '... a great hinderance to the execution of the lawes both civill and eclesiastical ...' and that Samuel Hardy:

> '... an hired non-conformist preacher, who, for att least twelve yeares last past, hath made use of the church of y^{e} said towne, as a conventicle, readeing little or none of y^{e} litturgie of y^{e} church of England; to whome multitudes of his maj^{ts} disaffected subjects within this county doe constantly resort, the previledges of the said towne exempting the sd Hardy and them from punishment ...'

and asked the King

> '... in his princely wisdom to think of some expedient for the redresse thereof.' (*ibid.*)

At the same time a complaint was made to the King that Hardy did not conform to the Established Church. As a result, a commission was issued to enquire into the matter and, the allegations being fully proved, Hardy was deprived of his position by royal decree dated 3 August 1682. 'He took great delight at doing good; and, whilst at Poole, collected nearly £500 for the purpose of redeeming captives from slavery' (Sydenham 1839, 306).

During Hardy's incumbency there would have been less need for Dissenters to set up their own meeting houses. Even after he left they appear to have continued to attend the parish church until 1702, when a dispute arose about who had the right of nomination to the rectory, which dragged on for some time and caused ill-feeling; 'This dispute seems to have driven a good many Presbyterians, who had hitherto remained associated with the parish church, to leave and throw in their lot with the Congregationalists ...' (Densham and Ogle 1899, 190). Eventually this group built a meeting house in Hill Street in 1704 (Stell 1991, 123: two storey, brick construction, house style; Fig. 14) which was '... known as the Presbyterian Meeting-house, though it was never Presbyterian in anything but the name' (*ibid.*). The licensing of this, Poole's first purpose-built Dissenting place of worship, which could accommodate 400 people, is recorded in the sessions book of the borough dated 14 January 1705/6 where it is described as 'The meeting-house lately built in the garden of Richard Burkman, situate and being near Hill-street, in the said town and county' (Hutchins 1861, 60). Surviving records of what later became known as 'The Old Meeting' include:

> 'An Acc^{t} of the Admission of members into the Church in Pool under the Care of the Rev^{d} Mr W^{m} Madgwick who was ordained pastor there October 11, 1704 & continued there till his Death which was on [th]e 21 of March 1734/5. N.B. some were members before' (DHC Ref: MIC/R/1056)

– thus confirming the previous existence of a congregation.

The 1661 *Corporation Act* required those wishing to hold municipal office to produce evidence that they took communion at their parish church. This requirement was incompatible with membership of Nonconformist chapels, consequently, a number of those within the Hill Street congregation abstained from becoming members (though continuing to attend) in order to qualify for municipal offices by occasionally receiving the communion in the parish church (Densham and Ogle 1899, 193). Mr Madgwick appears to have condoned this arrangement, but following his death his successor, Mr Towgood, did not. Finally, in 1739, matters came to a head and the minister was locked out of the church; he and his friends started another place of worship, known as the Little Presbyterian meeting, in Carter's Lane (Fig. 14), but this only lasted a short time. Mr Madgwick's death and his replacement by Matthew Towgood, whose ministry '... was the very opposite of that of his late colleague ...' (*ibid.*), may have finally spurred the Baptists to set up their own church.

Bishop Secker's diocesan survey of Dorset in 1735, while recording the presence of specific kinds of Dissenters in various places, says only that the parish of St James is '... now in the Jurisdiction but a donative of the Corporation of Pool where there is a majority of Dissenters. No papists' (Bettey, 1973, 74; Bristol Archives Office EP/A/2/2, 425). There are no references to Poole in a further survey in 1766 by a later Bishop, Thomas Newton (Bettey, 1973, 74).

There does not seem to have been a rigid division between the Nonconformist denominations or

between them and the parish church in the 18th century. The attendance of Dissenters at the parish church during the incumbency of Samuel Hardy has already been referred to above. Later the parishioners of St James for many years attended the evening service at Skinner Street Independent Church, as the parish church only had a morning service (Figs 14 and 47). They brought their choir with them and the parish clerk took his accustomed place. This continued until 1805, when Sir John Lester left a sum of £2500 to the rector who was to supply an evening lecture between the hours of six and eight, and stipulated that this be so, on the penalty of a £1 fine deducted from the rector's salary. Following this bequest the parishioners ceased to worship at Skinner Street and returned to St James (Johnston 1977, 5).

Poole's early Baptists

The progress of the Baptist movement in Poole at this time is hard to define. In his consideration of the development of the General Baptist cause in the southern counties from the Restoration (1660) to the French Revolution (1789) Taylor states that '... the general baptist cause made great progress during this period, principally through ... the labours of Mr. John Miller' (Taylor 1818, 297). John Miller (d. 1694) was chosen as pastor when a church was formed in Minthenton and he also travelled a great deal preaching and spreading the word (*ibid.*). Although there is no specific reference to General Baptists at Poole it seems likely that it was among the places he visited.

There is no reference to Poole in Crosby's account of the 1692 Baptist Assembly in London, but he makes the point that there were numerous 'baptised churches' in England at the time:

> '... tho' but one hundred and seven churches are mentioned, which made up this *general assembly*, it is to be observed, there were many other churches of the same faith and order, that associated together, which never joined in these *assemblies*; besides a great number of *baptized* churches, who hold the doctrine of universal *redemption* ...' (1740, 271)

In 1707 the house of Mrs Susannah Pike '... was licensed for an assembly for religious worship ...' (Sydenham 1839, 346) and was probably used for Baptist meetings. The summary of dissenting places of worship made to the Registrar General in 1852 confirms that a licence was issued on 19 July 1707, but gives no information on the denomination of the meeting house (RG31/8). It is, therefore, not clear on what evidence Sydenham based his claim that it was used by Baptists. His statement contrasts with one made by Short that '... for a long time no separate Baptist church was in existence in this town but many Baptists were, in the meantime, in communion with Mr. Madgwick's [nominally Presbyterian] church in Hill Street ...' (1927, 57). It is possible that there was more than one group of Baptists in Poole at this time and the size of any one group may have been very small. The national survey of Dissenting churches undertaken in 1715–18 shows only one church in Poole with William Madgwick as its Preacher (Dr William's Library 702.C.33). The column in Evans' original survey for the number of hearers was not completed so the size of the congregation there is unknown. It is possible that a small group of individuals, with no formal church building or meeting house and possibly only an occasional visiting minister, may have passed unnoticed within a national survey of this type. In an examination of the information given in Evans' 1715 list (Anon. 1911, 95) it is stated '... It is however important that nearly all the actual correspondents [who supplied Evans with his information] were Paedobaptists, and that the information given as to Baptists is far more meagre than as to others ... Those who are familiar with any county will soon recognize that Evans' correspondents often overlooked small causes'.

Crosby, in *The History of the English Baptists*, includes a reference to Thomas Collier's work at Poole in 1646 (1740, 52) but has nothing about any later place of worship. Since this *History* was, however, basically the material collected between 1711 and 1719 by Benjamin Stinton (minister of the Horsleydown Particular Baptist Church in London) the absence of any reference to West Butts Street cannot be taken as significant (Whitley 1909, lxxi–lxxiv).

WEST BUTTS STREET

The chapel and burial ground

Between 1689 and 1812 Dissenting places of worship had to be certified either to the ecclesiastical authorities or the justices of the peace at general or quarter sessions to avoid persecution under the legislation against Dissenters (see above and Appendix IV). From 1812 registration became compulsory for larger assemblies. When the system changed in 1852, rendering the Registrar General the only licensing authority, a summary of all places certified by quarter sessions was made (Chandler 1985, xii–xiv). The returns for Poole, for 1688 to 29 June 1852, show that a Baptist place of worship was registered on 6

November 1735, but gives no address or description of it, nor any details of the person(s) making the application (RG31/8).

A photocopy of the original covenant drawn-up at the formation of the West Butts Street Church in 1735 is held in the archive of the Hill Street Baptist Church (frontispiece). The photocopy shows that the original document was framed, the heading having been added to the backing sheet probably at the time of framing. It is believed that it was hanging on the wall of the current church and was destroyed during the small fire which occurred there in 1987. It is from this (the original) that the two previously published partial transcriptions of the document were derived (Short 1927, 27; Coffin *et al.* 1954). A full transcription was made from the photocopy by one of the present authors (frontispiece). The document was written in a cramped hand, using some abbreviations and with words occasionally inserted between the lines. By the time it was framed it was slightly damaged round the edges, had acquired several small holes, and appears stained/dirty in places; the right hand side of the copy is faint with some illegible words. Consequently, the transcription also draws on the two published versions to clarify words illegible in the copy (denoted by * in the transcription); there are differences in places, in particular with regard to names.

It is not clear where the document was kept subsequent to the dissolution of the West Butts Street congregation since Sydenham, writing in 1839 (346) claimed that no records relating to the first church existed. It is probable that, as with the records of the church in Wareham discussed earlier in the chapter, it was held by the descendants of a former member of the congregation and its whereabouts were not commonly known (the current Hill Street Church members were also unaware of what records they held).

Probable entries relating to three of the signatories – Winsor (Winzor), Darby (Darbie) and Addis – have been identified in the baptismal records of the 'Old Meeting' (DHC MIC/R/1056; ie, the 1704 Hill Street Presbyterian meeting house; Fig. 14) lending weight to Short's statement that Baptists attended that church. It does not, however, correspond with the statement that members of the new church belonged to '... severall Congregations at great distances ...' (frontispiece); there may have been more of a mix of members than is implied within the statements or more than one group of Baptist worshippers who joined together.

Although the site of the West Butts chapel now lies *c.* 150 m from the sea, following an intermittent but prolonged period of relatively minor land reclamation (17th–19th century), in 1735 the course of the current West Quay Road would have roughly formed the shoreline of the Back Water Channel, ie, the town's West Quay (Figs 6, 7 and 14), the chapel and burial ground lying within *c.* 30–50 m of the shore.

The reason for this choice of location appears to be linked primarily to the owner donating the land to the church, but corroborative evidence as to who that individual was is more difficult to trace. Extracts from the 1805 Hill Street Church Book makes reference to 'the Donor' who gave the land for the chapel and cemetery, but only mentions the donor's heir – Geo: Darby (Derby or Darbie being the name of one of the 1735 signatories) – by name in reference to his selling the property in 1788–9 to Mr George Kemp (endpiece). The next reference to the original landowner is not found until 1905 in the statement of William Mate in the 'Joint Statutory Declaration' relating to the then ownership of the West Butts Street plot (Hill Street Archive). In 1854 Mr Mate had attended a lecture, and retained a copy of the paper, given by James Powell Godwin on the '*History of the Baptist Denomination at Poole*'. Godwin's account of the West Butts Street congregation included the statement that the chapel had been '... erected upon land the property of the said John Bird [the elected pastor] ...' and that following Bird's death '... his nephew one George Derby a seamen laid claim to the said premises ...' which he subsequently sold to George Kemp. There is a strong degree of correlation between this and the earlier account, but it appears somewhat strange that the early Hill Street congregation had not been aware that pastor Bird was the original owner of the land, particularly since the implication within their document is that some of the members of the West Butts congregation may have joined the new one in 1804 (endpiece). Godwin stated that in 1804 '... the greater part of ... the Baptist sect resident in Poole ... had worshipped in the Old Chapel at West Butts ...' ('Joint Statutory Declaration' Hill Street Archive). It may be that some of the latter were quite elderly by this stage and not sufficiently active for their previous connection to be known by others within the new congregation or simply that they were not consulted when the church book entry was made.

The site's proximity to the sea may also have been seen as advantageous, readily facilitating 'total immersion' or submersion of candidates for baptism. Complete immersion rather than 'sprinkling' had been adopted by all Baptist churches in the mid-17th century (Watts 1985, 66). Amongst Spinney's notes (Anon.) in the Hill Street archive was a reference to '... 14 precious soles ...' being '... Baptised in the Backwaters of Poole Harbour ...' in 1646. Thompson's map of 1751 suggests a short walk across West Butts Green would have given the easiest access to water from the chapel avoiding the muddy foreshore, but by 1774 a bathing hut had been erected at the end of a narrow pier leading from the shore directly opposite the chapel (Figs 7 and 14). Although there is no evidence for the West Butts congregation undertaking baptisms in the Back Water channel the means to do so clearly existed. Records pertaining to the Lyme Regis

Baptists describe how '... Immersion or Dipping, took place in the river near the bottom of the present Woodmead Road, and an old print exists of the Dipping House' (Williams' Library ref. 5106 DS 8, 3).

No illustration or contemporary description of the West Butts Street chapel has been found. The only surviving information states that 'The meeting house stood without [outside] the town [though technically it was within it being inside the town's north gate; Fig. 14] with a burying ground attached to it. This was a good building and would contain about 400 people' (Ivimey 1814, 149). The rectangular area described by the outline of the chapel shown on the 1751 and 1774 maps of Poole is *c.* 15 x 10 m (*c.* 49 x 33 ft; Figs 7 and 14). This would render it slightly smaller in size than the 1704 Hill Street meeting house, which was '... fifty feet square ...' (Murch 1835 in Stell 1991, 124) but also described as being able to accommodate 400 people (Hutchins 1861, 60; N.B. the West Butts chapel appears much larger than the Hill Street 'Great Meeting House' as shown on Thompson's 1774 map, so either map or measurements may be suspect; Fig. 14). This suggests that, like the 'Old Meeting', the West Butts chapel was two storeys high and had some form of balcony/gallery, probably extending along three sides given its alleged capacity. The building material was probably brick; the Royal Commission's county volume states that 'Brick was exclusively used from the end of the 17th century...' (RCHM(E) 1970, 191) and the four other 18th century Nonconformist meeting houses/chapels recorded for Poole were each of brick construction with slate or tile roofs (Stell 1991, 123–5). In common with the latter (*ibid.*, plates pp. 123–5: Fig. 47), architecturally the chapel was likely to have been in a plain classical style, with little external ornamentation.

Many typical features of church interiors were considered popish or ostentatious, and therefore were to be avoided:

> 'The Quakers were not, in the early days, alone in their addiction to simplicity. It was almost a hallmark of nonconformist building and even in the most sophisticated of chapels the emphasis was on the restrained use of fine craftsmanship and good materials rather than on elaboration or decoration for its own sake ... In all but Quaker Meeting Houses the pulpit occupied the focal point of the interior layout, and in most cases it was singled out for any elaboration of detail which the builders allowed. Centrally placed, it was usually slightly elevated with steps on one or both sides'. (Lindley 1969, 32–3)

Figure 47 Skinner Street Independent (now United Reformed) Church, erected 1777

It may be pertinent to note that the pulpit was the only item recorded to have been sold/passed-on after the chapel had closed. There is no description of its appearance, and the Congregational chapel in West Street, Wareham to which it passed (Sydenham 1839, 346) was converted to a school in 1858. All but the façade was demolished when the site was redeveloped for housing in 1988 and the subsequent fate of the pulpit is unknown (Stell 1991, 131).

There is no indication of who designed or built the chapel, though one possibility might be the Bastard family of architects and master builders, based at Blandford (*c.* 20 km/13 miles to the north-west), who were active in Dorset throughout the 18th century (Colvin 1978, 96). Documentary evidence suggests that in 1746–9 they built and probably also designed a house in Market Street, Poole, for Sir Peter Thompson (*ibid.*). Poole does not appear to have boasted an architect amongst its citizens (Colvin 1978; *Universal Directory* 1798; *Baily's Directory* 1783) but the *Militia Ballot Lists* for the second half of the 18th century suggest there would have been no shortage of bricklayers, stonemasons and joiners/carpenters who could have been engaged in the building (Table 38; pp. 97–9), together at least one 'builder' (Medlycott 1999).

The provision of a burial ground was particularly important since although Nonconformists could be buried in the parish graveyard (there was usually nowhere else suitable) they would not be allowed to hold a Nonconformist service until 1880 (Herber 1997, 201). A study of Baptist ministers in England in the mid-18th century, based on a manuscript by the Rev. John Collett Ryland in 1753, considers both Particular and General Baptists (Appendix IV) but contains no references to the West Butts chapel (Langley 1919). In 1772–3, a national survey of Dissenting congregations in England and Wales was

undertaken by a retired Baptist minister, Josiah Thompson. Various versions of the list survive in Dr Williams' Library and extracts have been published in the *Transactions of the Congregational History Society* (Anon. 1912). There are two references to churches at Poole but neither are designated as Baptist. In fact, Baptists are only listed at Lyme Regis (one minister and one church; probably that in Silver Street (Stell 1991, 118)) and at La[o]ughwood (Dalwood; Stell 1991, 76–7), a detached part of Dorset near Axminster in Devon (one minister and one church). However, it is known that some churches/chapels were not included in Thompson's list so the absence of any reference to West Butts may be inconsequential (Anon. 1912, 214–5).

The first contemporary account of the West Butts chapel – and that made towards the latter end of the congregation's existence – is disappointingly brief:

> 'Here [in Poole] are several meeting-houses, the dissenters being very numerous; one for the Presbyterians in Hill-street, and another in Leg-Lane, or Lackland-street. One for the Quakers opposite the latter; and another for the Anabaptists at *West Butts* in West-street. There are two burial places for the Quakers and Anabaptists'. (Hutchins 1774, 8; Fig. 14)

In 1788 Hutchins produced a history of Poole based on the information in his earlier publication with additions and corrections. This still says that '... there are several meeting-houses, the dissenters being very numerous ...' and repeats the entry about the two burial places but adds that the West Butts chapel has not been used for many years (Hutchins 1788, 29). By the time the second edition of Hutchins' 1774 *Dorset History* was produced in 1803 the Baptist meeting house is described as '... lately taken down and a well-built meeting house since erected in the West-street ...' (Hutchins 1803, 10). The burial ground is still described in the same words as the first edition indicating it was still in use despite the demise of the chapel and the congregation. The reference to a meeting house in West Street is puzzling; none of the other records which have been consulted mentions it and no such place of worship for Baptists is listed in the return to the Registrar General between 6 November 1735 and 12 October 1804 (RG31/8).

Towards the latter part of the 18th century the West Butts congregation is recorded to have:

> '... declined until the meeting House was deserted by the former Hearers the House was shut up until about the year 1788 or 1789 when Geo: Darby who said he was Heir to the Donor ... sold it to Mr. George Kemp who pulled down the Meeting House ...'. (endpiece; Hill Street church book)

Sydenham's account of the decline of the church seems to be based on this, with the additional information that:

> 'The pulpit, that until that time remained in the meeting house, was then also sold, and is now used in the Independent meeting house, West street, Wareham ...'

and that

> '... the last member of [the West Butts congregation] died at a very advanced age, two or three years prior to the foundation of the present [Hill Street] society ...'. (1839, 346)

This information presumably came from living memory but the latter part is at odds with other accounts, including the implied presence of former West Butts congregation members in the new church in the Hill Street church book and Godwin's 1854 statement that the 1804 Baptist community was largely made up of former West Butts Street worshippers (see above).

Short (1927, 57) records that John Bird, the West Butts pastor:

> '... After a life of worthy activity ... reached a great age, but by reason of his infirmities the Baptist cause began to show a marked decline. So serious did these infirmities become that at length the chapel after passing into the hand of Mr. Kemp was pulled down. The burial ground, however, attached to this building, has ever since remained in the possession of the Bpatists [*sic*] of the town'

The basis for stating that John Bird's infirmities were responsible for the decline of the chapel is not known; this information does not appear in the Hill Street church book entry (see above and endpiece). Records of the General Assembly of General Baptist Churches, however, describe how churches usually choose one of their own members to be an elder and that he often – as at West Butts – held the office until he died, sometimes continuing '... till he was almost past work so that the church decayed. This was a not infrequent cause of the death of churches ...'; it seems the West Butts church went the way of many of its fellows (Whitley 1909, xxxiii). The 1822 Enclosure

Award for Great Canford and Poole confirms that George Kemp owned the ground, when he was allocated land for various properties including plot 625, the chapel site. George Kemp was a Non-conformist, playing an active part in the affairs of the Independent Church in Skinner Street (Beamish *et al.* 1976, 67) and his purchase of the land, rather than being a purely commercial decision, may have been intended to assist fellow dissenters by keeping the burial ground safe. At any event neither he nor his successors (he died in 1845 aged 89; Densham and Ogle 1899, 198) seem to have asserted any right of ownership over the land, which appears to have continued to be used for Baptist burials (Hill Street Joint Statutory Declaration) presumably until its closure – together with all other town burial grounds – in 1855 by government order (TNAZJ1/287/482).

The alleged continued use of this burial ground by the Hill Street Baptists to such a late date is a little confusing, since the new Hill Street Church opened in 1815 had its own burial ground attached to the church. An entry in the Hill Street minute book for October 31st 1817 states the:

> '... payments for interments in our new burial ground should be as follows. for every grown person 9 shillings, for every child 6 shillings, for every vault or walled grave £2.2 shillings ...'

Burials were certainly made to the front and rear of the church though the number involved is unclear. The place of burial may have been dictated more by personal choice than strictly by allegiance to the church attended at the time of death; perhaps those who elected to be buried in the West Butts Street cemetery chose to be placed with or near relatives who were already buried there.

The only other information about the sale of the site offers a different view of who disposed of it:

> 'It [the chapel] was standing till about twenty five years ago; [ie, 1789] when it was sold by Mr. Dearling of Chichester and Mr. Wornell of Downton, heirs to the only surviving trustees, and the money it obtained was divided between the general baptist churches of *Chichester*, *Downton* and *Newport* in the Isle of Wight'. (Ivimey 1814, 149)

This is the only mention of these individuals in association with West Butts. It is the only mention of the existence of 'trustees', and neither name occurs in the lists of those associated with either the West Butts or Hill Street congregations. Through an entry in *The Genealogical Research Directory* (*GRD*) for 2003 contact was made with researchers into the surname Wornell; however, no information about anyone of that name at either Downton or Poole was forthcoming. A similar, unsuccessful, attempt was made with the surname Dearling (not listed in the *GRD*).

Attempts to discover how much the alleged sale raised have proved fruitless. Although there are records at the West Sussex Record Office (NC/GB1) for the Chichester chapel in which James Dearling features regularly, the account books for 1761–1808 are missing. Newport General Baptist Chapel (later Unitarian; Stell 1991, 155) records survive, including lists of members and the cash book for 1743–1814; records for 1770–1808 contain no references to contact with Poole, however, or a sum of money from elsewhere (Isle of Wight Record Office NC/U/12). Downton is presumed, on geographical terms, to be the one in Wiltshire (Stell 1991, 223), a presumption supported by documents relating to the land on which the General Baptist meeting house was located which mention the name Wornell (Wiltshire and Swindon Record Office Ref 476/1). However, no church book relating to the General Baptists was found.

The congregation

The 15 founding members members may seem a very small number, but small congregations were apparently common in the mid-18th to early 19th centuries; 'The Churches at this time, as to the number of members, were small, probably not more than fifty upon an average' (Ivimey 1830, 21). The records of Newport (Isle of Wight) General Baptist Church show that in 1794 it had only 24 members and for a number of years only about a dozen regular subscribers are listed in the cash book (NC/U/12). Doel's (1890) history of Baptist communities in west Wiltshire gives a number of instances where a new chapel was founded by a small group and, as he usually lists their names, it is possible to determine the male/female ratio – women usually considerably outnumbering men. For example, North Bradley was founded in 1775 with ten people (*ibid.*, 186); Chapmanslade chapel – which with internal dimensions 35 x 28 ft (*c.* 10.7 x 8.5 m) was slightly smaller than that projected for West Butts (Stell 1991, 216) – was founded in 1788 with nine members (five females and four males; *ibid.*, 172); Hilperton in 1806 with ten (three females, seven males; Doel 1890, 142); and Penknap in 1810 with 40 people (17 females, 13 males; *ibid.*, 166). In 1812, 49 members (32 females, 17 males) of the Back Street Church in Trowbridge withdrew, 41 of them (27 females, 14 males) forming a new church the following year (*ibid.*, 150).

Efforts to find out more about the members of the West Butts congregation have been hampered by several factors. The only names available for research

were those stated in the covenant: Elisabeth Addis; Mary Belben; Jno. Bird; Sarah Bird; Michael Board; Jane Cock(ran) – previously shown as Cookson (Short 1927, 57; Coffin *et al.* 1954); John Darbie; Mary Hains; Mary – previously shown as May (*ibid.*) – Joyce; Frances Strong; Jone Taylor (previously known as Jane (*ibid.*)); Dorothy Whitroe; Mary Whitroe; a second Mary Whitroe (*ibid.*); and Jacob Winzer (*ibid.*). As the majority of names are female, records such as rate books cannot be used as these list only male householders. Four men are also mentioned as having been of assistance in giving advice – Brothers Drinkwatter, Chalk, Lane, and Miller (frontispiece); only three were named by Short who referred to Bro. Chalk as Clark (1927, 57). It is likely, they being referred to as 'brothers' and acting in such an advisory capacity, that they too were Baptists. A man called Benjamin Miller (d. 1747) was messenger for the church at Downton from 1714 and a Richard Drinkwater (d. 1742/3) acted in the same capacity for the church in Chichester (Whitley 1909, xxxiii). These seem likely candidates to have assisted at Poole. Brother Chalk was possibly the Mr. Richard Chalk of Lymington, ordained pastor *c.* 1705, who died 29 April 1745 (Ivimey 1830, 497). No probable identification for Brother Lane has been found.

No PCC wills relating to the 1735 signatories names could be identified and nothing relating to them was identified in the Letters of Administration (admons). An index to wills and admons proved in the Canford and Poole peculiar court from 1650–1799 gives the name of the testator, date made, date proved and name of person to whom probate was granted. In three of the wills the latter appears to relate to people from the chapel:

Henry Strong, made 23 Mch 1740, proved 01 Jne 1747, probate granted to Frances, relict;
Simon Whitroe, made 10 Apl 1691, proved 16 Nov 1704, probate granted to Mary, relict;
Nathaniel, son Thomas Whitrow, made 04 Jly 1739, proved 27 Jly 1741, probate granted to Mary, relict.

There are also wills and/or admons for people named Bird, Belbin, Clark, Darby, Hanes/Haines, Joyce, Lane, Strong and Winsor but few of these wills were examined (Fry 1900). The will of John Bird (hosier), made 13 March 1733 and proved 26 May 1742, probate to widow Dorothy Bird, makes reference to his son John and his son's wife, Sarah. Dorothy's will, made 19 January 1749, proved 28 May 1759, probate granted to son Thomas, mentions her *late* son John and his son John (Soc. Genealogists microfilm 729).

A series of index cards at Poole Local History Centre contains varying numbers of entries for the different surnames. There are numerous entries for Bird including several relating to John Bird. The most promising of these was one referring to a Deborah Linthorne who married a John Bird, both being dead by 1789. The names were recorded in a document of 1815 in which George Kemp and others transferred property to Robert Miell (Ref: Slum Clearance Deeds; kept by the Democratic Services Department at the Civic Centre. They have not been examined to see if they contain any extra information). Index cards relating to the name Strong also have many references, including two referring to a Frances Strong. The first, dated 29 December 1743, noted that Henry Strong died without settling debts due to Martha Buxton, who had also died. His widow Frances was to appear in the matter of the settlement of the debt with the beneficiaries of Martha Buxton (Court of Record (hereafter CR) 38C). The second, dated 30 August 1744, appears to refer to the same matter: Henry Strong deceased, executrix Frances Strong, v Martha Buxton's executors (Ref: CR41). The items referred to in these references have not been examined.

Allowing for variations in spelling of surnames, which was common until the 19th century, the register of baptisms for Poole St. James included the following entries which may possibly relate to those who signed the covenant in 1735:

Baptisms
Addis, Elizabeth, dau of John & Eliz, 25 Sep 1721
Belben, Mary, dau of John & Mary, 16 Aug 1699
Bird, John, son of Timothy & Dorothy, 02 Jly 1690
Whittrow, John, son of Thomas & Dorathy, 17 Mch 1675
Windore, Jacob, son of John & Elenor, 13 Apl 1680

Marriages
Bird, John & Jennings, Sarah, 20 Mch 1713, Licence
Joyce, Thomas of Fordingbridge & Mary Clarke of Poole, 05 Dec 1717, Licence
Thomas Witerow & Mary Blake, both of Poole, 1721, Licence

Note all the marriages were by licence rather than by reading of banns, the probable preferred option for Nonconformists (see above).

The *Militia Ballot Lists* (Medlycott 1999) include entries for several Poole men with the surnames Belben, Bird, Joyce, Strong, and Taylor, mostly in the listings for the 1790s, by which time the original West Butts congregation would have been too old to be eligible to serve. It is possible that some of these individuals were related to the original signatories but whether they comprised members of the congregation or not is conjecture. The 1759 listings include a John Bird, a hosier and militiaman; several Strongs are listed including Far, a butcher, George, a deaf sailmaker, and

Thomas, a maltster; and there is a John Taylor, a salt duty collector. There are seven entries for Bird in the list, five of them from Poole, two very probably being the same man listed in different years. Listed occupations include grocer, hosier (another) and labourer. PPC wills dated to the 18th and early 19th century survive for five Poole males with the surname Bird, including two called John; John also occurring in the late 17th century and possibly representing a 'family' name. Although none could be directly linked with the Pastor of West Butts, it is probable that some, if not all, were related. Occupations included shopkeeper, mercer, and mariner, indicating that the Birds were generally tradespeople.

A search of the personal names indexes (old and new) at the Dorset History Centre revealed various entries for some surnames but nothing which obviously related to the signatories. There are several volumes listing the Poole Borough Archives, but a thorough search would have been very time consuming with the probability of little return and was not undertaken. However, an entry relating to the forcible entry of property occupied by John and Elizabeth Addis, West Street, Poole, 22–4 Jan 1724 was noted (DC/Pl/CE Sheriff's court papers) and this could represent the address of one of the female signatories.

There is nothing to definitely link any of the items found with the people who signed the West Butts covenant. Few of the entries provide any information about the individuals, their occupations, where they lived, their social or economic status. What little can be gleaned from these records is tantalising and presents several possibilities, but is inconclusive. The existence of wills suggests that individuals owned enough property to warrant writing one, though it does not follow that they were wealthy.

The fact that sufficient funds could be gathered to pay for the land and building of the chapel illustrates that at least some of the congregation's members had a reasonable income. If John Bird did own the land on which the chapel was built, as is indicated by some sources (see above), it suggests he was a man of some means even if this – relatively marginal and possibly fairly cheap – plot of land was the only plot he owned.

One of Spinney's typed notes (*c.* 1950s) held in the Hill Street church archive presents John Bird as '... a well known business-man ...' who '... was held in high respect by the townsfolk ...' and '... served as its [Poole's] mayor on five different occasions.' This is the only reference to Pastor Bird having served as mayor; given the stipulations of the *Corporation Act* requiring anyone wishing to hold such a public office to take communion within the Church of England at least once within the year of their election, one would think the pastor of one of the town's Nonconformist congregation's undertaking the rite several times over a five year period in order to qualify may have been more worthy of note. A John Bird is recorded has having held the office of mayor in the years 1770–4 and 1776–7 (Sydenham 1839, 239); but, as outlined above, there were probably at least three men of this name in the town within this period, at least two of whom could be described as 'businessmen', and it is unclear on what evidence Spinney concluded that Pastor Bird and the mayor John Bird were one and the same person.

The John Bird baptised in 1690 would have been 23 years old in 1713 when Sarah Jennings married a (?the same) John Bird. If these are the Birds of the West Butts chapel covenant (and both names match), John would have been 45 years old at the time the chapel was established. However, the son of Dorothy Bird (will, baptism, and marriage records suggest that this might be the same individual) was dead by 1749, and Pastor John Bird could have been Sarah Bird's son. If so, he would probably have been in his 70s in 1789. Pastor Bird is recorded as having '... reached a great age ...' and to have been infirm for some years prior to his death (Short 1927, 57; see Chapter 4).

It is likely that some, if not all, of the Birds in the *Militia Ballot Lists* were related. There is no conclusive link between any of those listed and the West Butts Street congregation. It is possible that John Bird, hosier and militiaman, named in the 1759 *L ist* was the son of John and Sarah Bird; he may have acted as pastor at West Butts while also holding down a 'day job' as a hosier.

In at least the early half of the 18th century, most '... Baptist ministers earned their living in other employment and could only devote their free time ...' to the congregations they served, and they frequently hailed from the trades rather than the more educated professions (Brown 1986, 29, 37–8, 63–4). Congregations were encouraged to provide financial support for their ministers but many were too poor to be able to do so and most (at least General Baptists) '... ministers were [still] largely without worthy financial support ...' into the latter part of the 18th century (*ibid.*, 63). Various funds were established over time to provide support and pay for the education of would-be ministers (*ibid.*, 35, 63, 83).

It is possible, irrespective of which – if any – of our candidates was the minister, that West Butts slipped this net and that one of the reasons so little is known about Pastor Bird and the congregation is that they remained independent of external assistance and did not attend any of the Baptist Assemblies/ Association meetings (generally held annually in London; *ibid.*, 35, 38, 57, 83, 85). The wording of the 1735 declaration indicates that the congregation chose not to be firmly affiliated to either the General or the Particular Baptists; '... whereas ther may be som difereant Conceptions & opionions amongest us; as perticulerly that of General & perticuler redemption

by Christ…we do mutually agree that none of those things shall make any maner of difference ...' (frontispiece). This may further explain the absence of the West Butts Street chapel from the records of either church. This desire for a lack of distinction between the Baptist principles may indicate a former link with the Western Baptist Association, where until 1733 leaders from both persuasions met together '... for many years ... without any regard for their different principles in other respects' (Brown 1986, 71).

The General Baptist cause underwent a decline towards the mid-18th century when '... Poorly attended churches and declining values caused some members to seek fellowship elsewhere ...', primarily within the 'Evangelical Revival' led by the Methodists (Brown 1986, 66–7). Methodism was not looked on with favour by other Dissenters during its early history, and some Congregational and Baptist churches refused membership to people who attended Methodist meetings (Watts 1985, 451).

The impact that the advent of Methodism had on the Baptist cause in Poole is unknown. In 1772–3 the minister of at least one local church, the Independent chapel at Swanage, was said to be in financial straits, partly through '... the Attachment of his Hearers of late to the Wesleian Methodists' (Thompson's list, Dr. Williams's Library manuscript 38.8), a view which contrasts with Densham and Ogle's statement that '... Wesley came seldom, and did little in Dorset' (1899, xiv).

Although the latter part of the century saw a Baptist revival following the New Connexion, the rise of the evangelical movement and the formation of the Baptist Missionary Society in 1792 (Appendix IV), the West Butts congregation continued to decline and eventually ceased (Brown 1986, 67; Watts 1985, 451; Breed 1995).

Since there is no surviving church book for the West Butts chapel it is impossible to determine whether strict conditions of entry or harsh application of discipline to existing members contributed to its eventual decline (see above). Certainly there was a marked imbalance of females and males amongst its initial congregation; though not all those who attended the chapel would necessarily have signed-up as 'members' (Brown 1986, 11). None of the surnames of signatories to the 1735 covenant occurs in that of the new Baptist congregation formed in 1804 (to become the Hill Street congregation), nor – with one possible exception – do they feature in the register of births of the Hill Street chapel.

Mary Hains was one of the 1735 signatories and four children of George and Maria Haine are listed between 1829–1836 in the Hill Street register; allowing for slight variation in spelling this could be the same family, but the surname is relatively common. It is possible that some of the female members of the original congregation married and produced families who went on to become part of the Hill Street chapel but without extensive study of local records – beyond the scope of this project – this cannot be determined.

Sydenham's lack of detail about the end of the West Butts chapel is disappointing as is his failure to make clear whether there were other Baptist groups in Poole. The extract from the Hill Street church book speaks of the 'decline' of the West Butts church and the desertion of '... the former Hearers ...', suggesting a Baptist interest probably still existed. There are no references to Poole in *The Baptist Register*, produced nationally between 1790 and 1802. Volume 3 (1798–1801) contains a list of Particular Baptist churches in England in 1798 but there are only three entries for Dorset, at Loughwood, Lyme Regis, and Wimborne (Rippon 1802, 10).

Hill Street Chapel: The Baptist Succession

Two entries made in the early years of the 19th century in the church book (1741–1844) for the Independent Church, Skinner Street (now the United Reformed Church), show that several Baptists had previously joined the church where Thomas Durant became pastor in 1801 (Figs 14 and 47). The entries lend support to the comment in Spinney's typed note (Hill Street church archive) that following the closure of the West Butts Street chapel:

> '... the pastor and members of the Independent Church, which still meets in Skinner Street, seeing their plight, suggested that these dear folk might keep their 'Baptist Identity' and worship with themselves until the way was open for them to obtain another place where they could worship as formerly ...'

There is no reference as to where this firm belief that the remnant of the West Butts congregation went to Skinner Street came from, but both the 1805 entry in the Hill Street Church book and Godwin's 1854 review of the Baptist cause in Poole (1905 Statutory Declaration, Hill Street archive) confirm that some of the congregation did remain after the closure of the chapel and that they did not '... form themselves into a distinct society till the year 1804 ...' (endpiece).

An entry in the Skinner Street church book for October 1804 states:

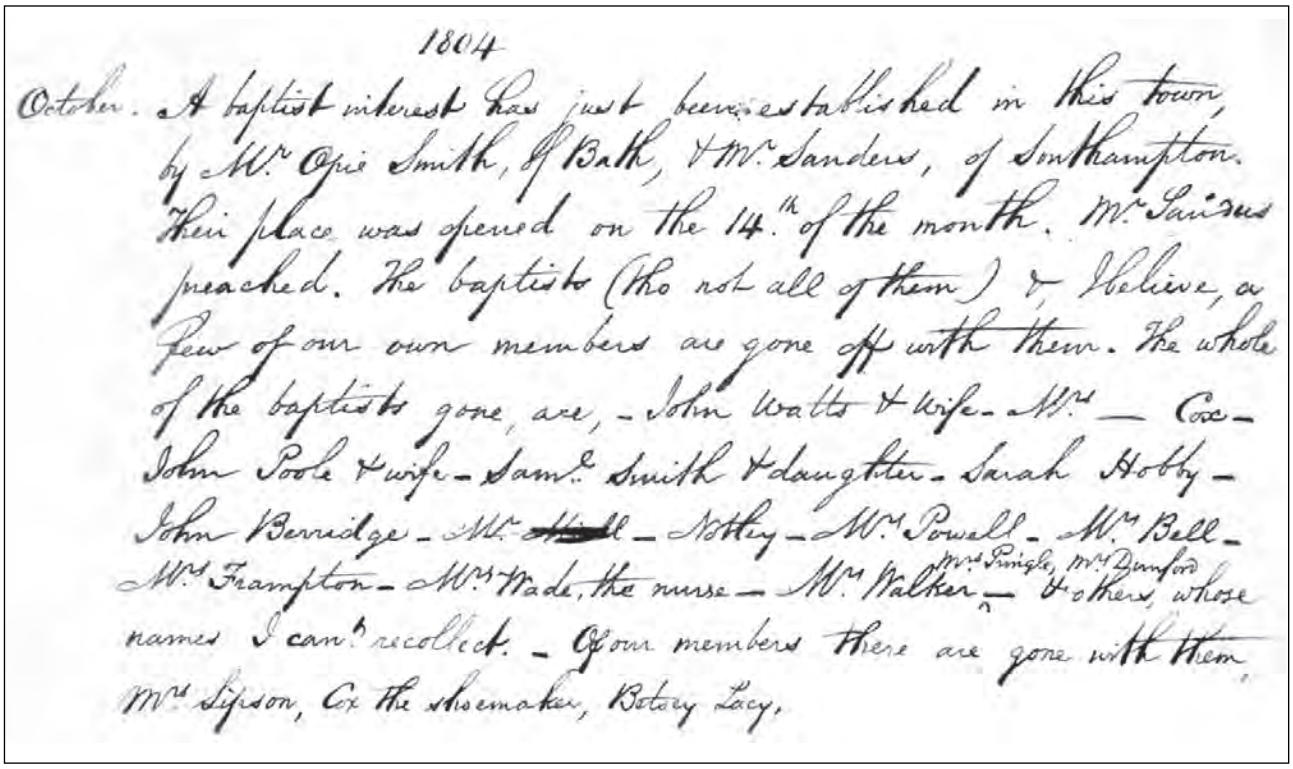

1804
October. A baptist interest has just been established in this town, by Mr. Opie Smith, of Bath, & Mr. Sanders, of Southampton. Their place was opened on the 14th of the month. Mr. Sanders preached. The baptists (tho not all of them) & I believe, a few of our own members are gone off with them. The whole of the baptists gone, are, - John Watts & wife - Mrs — Cox - John Poole & wife - Sam.l Smith & daughter - Sarah Hobby - John Berridge - Mr. [illegible] - Nobby - Mrs Powell - Mrs Bell - Mrs Frampton - Mrs Wade, the nurse — Mrs Walker — Mrs Pringle, Mrs Dunford & others, whose names I can't recollect. - Of our members there are gone with them, Mrs Sipson, Cox the shoemaker, Betsey Lacy,

Figure 48 Skinner Street church book entry for 1804 (Skinner Street Church Archive)

> 'A Baptist interest has just been established in this town by Mr Opie Smith of Bath, & Mr. Sanders of Southampton. Their place was opened on the 14th of the month. Mr. Sanders presided. The baptists (tho not all of them) & I believe, a few of our own members are gone off with them.' (Fig. 48).

The names of 17 'baptists' are given, 13 of which match signatories within the 1805 Hill Street covenant and five of which (males only) match those on the 1806 registration certificate (endpiece). The entry also refers to '... others [Baptists] whose names I can't recollect ...', together with the names of three of 'our members' who also left – two of which match names on the Hill Street covenant. The remaining nine names on the covenant may be the forgotten ones of the 'others' and/or new members from elsewhere. None of these names match any of those of the founding members of the West Butts Street chapel (frontispiece).

The new Baptist Congregation rented '... a Stable and Coach House belonging to Dr. Mitford near the Market Place which was fitted up for a place of Worship and was opened by the said Joseph Saunders on the 14 October 1804 ...' (endpiece). The movement evidently prospered under the care of Joseph Saunders and seven people were baptised before the end of 1804. 'It was then proposed and agreed that those Persons who were lately Baptized, and others who were Members of various Baptist Churches should unite with them into a Church or Society called particular Baptists ...' (*ibid.*). On 20 February 1805 Joseph Saunders and 23 other people signed the covenant for the new church (endpiece).

The congregation continued to grow and eventually moved to a meeting house in Bowling Green Alley which opened on Christmas Day 1806 (Sydenham 1839, 346; Fig. 14). Joseph Saunders was one of the 12 male signatories to the certificate of registration for the foundation of the new church submitted in October 1806 (endpiece) and the last reference to him in the minute book was on 8 December 1806 (Coffin *et al.* 1954). On 7 September 1807, the church unanimously called Mr Samuel Bulgin (who had come from Bath; Hill Street archive) '... to continue with us as our probationary Minister till Lady Day 1808 ...'; Mr Bulgin was ordained full time pastor on 2 June 1808 and remained until his retirement in 1853 (*ibid.*). When efforts were made to re-establish a Baptist chapel in Poole, Thomas Durant, pastor at Skinner Street, was initially not favourable – possibly party due to the loss of more than 20 of his congregation – however, he '... soon got over any prejudice he might have had, and on the settlement of the Rev. S. Bulgin, the first minister, he took a prominent part in his ordination, and the two men became the fastest of friends ...' (Densham and Ogle 1899, 205).

The church prospered and outgrew its premises in Bowling Green Alley, and a new church was built in Hill Street in 1815:

> '... it is a neat structure and affords accommodation for about 500 worshippers; its dimensions are 50 feet by 36 feet; and there is a deep gallery in front. Behind the meeting-house is a vestry, 35 feet by 12 feet; and a small burying-ground surrounds the building. (Sydenham 1839, 346; Fig. 10 and back cover)

The West Butts Street Baptists, to judge from their covenant (frontispiece), did not affiliate themselves solely with either the Particular or the General Baptists. There may have been some significance in the apparent donation of the funds from the eventual sale of the property to General Baptist causes elsewhere, though discrepancies in the surviving documentation may question the validity of this information (see above). Equally, however, it may be pertinent that the West Butts burial ground was retained for the use of Poole Baptists – Particular Baptists – which, despite the existence of their own burial ground attached to the Hill Street chapel, apparently continued to be used by them. As in life, in its demise the West Butts church seems to have served both sides of the Baptist cause.

WEST BUTTS STREET BAPTIST BURIAL GROUND

The site of the West Butts chapel and burial ground is marked on a number of maps, the earliest being Sir Peter Thompson's of 1751 (Fig. 7). The 1774 map produced to accompany the first edition of Hutchins' *History and Antiquities of the County of Dorset* (1774) shows the chapel in a slightly larger plot of land, extended north-west towards the sea, though there is a possibility that this variation may be due to inaccuracies in the drafting of one of the maps (Fig. 14). Although it is not named as such in the 1822 enclosure award map, the plot can be identified as being the same as that on the 1841 town map, where it is indicated as 'Baptists' Burying Ground' (Fig. 10). The map contained in the third edition of Hutchins' *History* (1861) seems to have been copied from the previous one without proper updating and, therefore, cannot be used to give any information about the status of the site in 1861.

The Ordnance Survey maps of 1890 and 1902 show timber yards occupying the northern portion of the previously marked 'Burying Ground', the southern

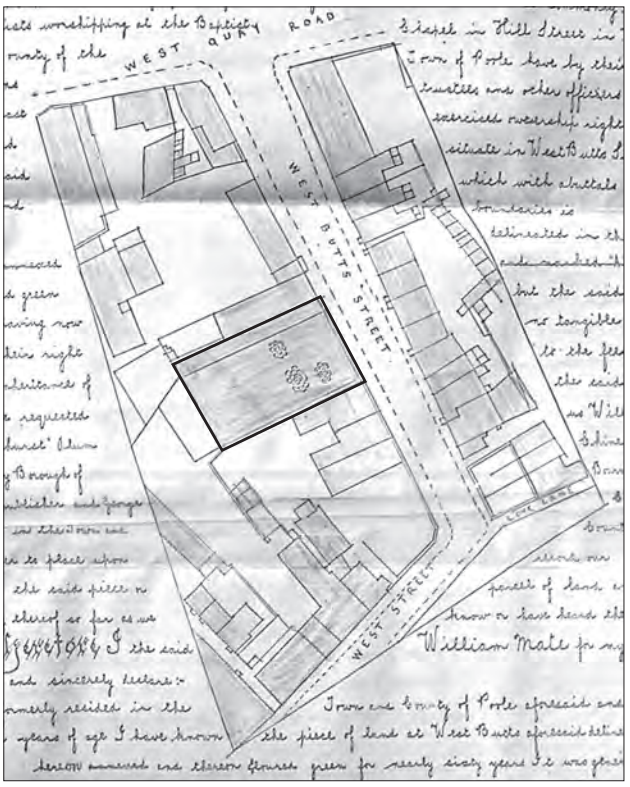


Figure 49 Plan from the 1905 Statutory Declaration of ownership showing location of the West Butts Street burial ground

portion forming gardens or 'undeveloped' land (Figs 11 and 12). In his statement in the 1905 Statutory Declaration (Hill Street archive), George Curtis described how his father's building firm were periodically employed by the Hill Street church to maintain the walls and fences surrounding the old burial ground prior and subsequent to its closure in the 1850s. He himself had inserted the commemorative stone – now set into the south wall of the new RNLI building constructed on the site (back cover) – into the wall in about the 1870s, the same wall being extant at the time of his declaration. The plan forming part of the Statutory Declaration clearly delineates the area of the burial ground, on the south side of which, fronting the road, a row of three terraced cottages had been built in the early 1900s (Fig. 49). It is unlikely, given that the burial ground was walled and maintained by the Hill Street Church, that any of the surrounding structures had impinged on the ground in which burials had been made; in 1905 this remained an open area possibly with a few trees.

The meeting house established in 1805 in Bowling Green Alley is not recorded as having an associated burial ground; it is doubtful, given the relatively built-up area in which in lay, to the north of New Orchard between Hill Street and the High Street (Fig. 14), that there would have been the space. Consequently, it is probable that the West Butts Street burial ground

Figure 50 Eighteenth century grave stone currently standing against the wall of the Hill Street Baptist Church, probably relocated from West Butts Street

would have continued to be used for all Baptist burials in the early years of the 19th century. The 1815 Hill Street church included a small graveyard surrounding the building (Sydenham 1836, 346). It appears that burials had commenced to be made here by 1817 (Hill Street minute book) and presumably continued to be until the cemetery's closure in 1855 (see below). Most of the legible head-stones (the inscriptions on some laid flat have worn away) now residing at the front of the church (back cover) and reported to have originated from the West Butts Street burial ground (Stell 1991, 123), are likely to have been re-sited from the rear of the church during construction of the school-room in 1866 (Coffin *et al.* 1954); though graves are also know to exist to the front of the church (pers. comm. Hill Street congregation).

All except one of these legible stones post-date the church building (date ranges 1818–1850), the one exception being that of 'T Godwin' who died in 1810; as this stone now forms part of the paving the rest of the inscription has worn away. One other stone, currently upstanding against the wall, features 18th century skull and cross-bones motifs and is also likely to have derived from the West Butts cemetery (Fig. 50). The apparent continued use of the West Butts cemetery after 1815 for at least a few burials (see above), suggests that at least some of the other stones may, indeed, have originated from there.

The West Butts burial ground was still recognised – and apparently used – as a graveyard when the decision was made in the mid-19th century, as part of a nationwide initiative, to close town-centre burial grounds for health reasons. The official notice, dated 11 August 1854, published in the *London Gazette*, does not make any mention of the denomination in connection with the site, simply referring to it as '... the old Burial-ground in Westbutt-street' (TNAZJ1/285, 2519). The final closure notice, as reported in the S*alisbury and Winchester Journal*, also omits any denomination:

> 'THE BURIAL GROUNDS belonging to St. James' Church, the Unitarian and Baptist Chapels, Hill-street and also the burial ground at West Butts, are to be finally closed on the 1st of March next'. (24 February 1855, p. 3 col. 5)

The census returns for 1841 (HO107/294) show that at least part of West Butts Street was used for residential purposes. The area was working class with several marine-related occupations such as mariner, boat builder (this entry has shoemaker as sub-household), Navy Pensioner and mariner's wife; there was also a coachman, a charwoman, a joiner, a laundress, a shoebinder and (possibly) a coal carter. Since the census only records persons who were resident on census night it gives no indication of the businesses which may have been carried out there, though Pigot's *National Directory* contains seven entries of businesses in the area including three timber merchants, a wheelwright, a sail cloth manufacturer, a fishing line and net maker and a school (Pigot & Co. 1830, 156–9). There is no indication of which side of the street the entries referred to though judging from the 1841 map it seems likely to be the north-east side (opposite the chapel site; Fig. 10).

The site of the former West Butts burial ground was still identifiable in the early 20th century (Figs 12 and 49). In the late 1920s to early 1930s most of the area survived as a large space defined by an outer wall (presumably that maintained by the Curtises in the 19th century) with a wooden double-gate *c.* 2.44 m high, used as a parking place by a Mr Stone who had a milk-round; local children used to climb over the wall and play football there (Arthur Spinney, pers. comm.). Some grave-stones were apparently still extant though it is unclear if they were still in position. Mr Stone paid the Hill Street church a yearly amount which was kept in a special fund not available for general purposes. The date at which the church sold the land is not known but it appears that at sometime in the 1930s it was owned by *British Powerboats*, who sold it to the *British Drug Houses* (later *Merck*) after the war; *Merck* eventually sold the site to the RNLI in 1973 (Hill Street

archive notes). A very dark photograph taken in 1940 shows the north end of the site as unkempt ground strewn with timber, with the 1900s road-side cottages on the south end of the site and narrow, two-storey, road-side dwellings in the central area. The same terraced cottages may be seen in the southern part of the site on a slightly later photograph, with single storey work units on much of the northern part of the site, and a large yard in the central area (Fig. 20; see Chapter 3).

CHAPTER 6
EPILOGUE

England 1815 ...

1815: the new Baptist Church on Hill Street was opened, together – it appears – with its own burial ground (back cover and Fig. 10). Irrespective of the real degree of continuity between this and the earlier Baptist congregation at West Butts Street (Chapters 4 and 5) – which had essentially ceased to exist 30 years previously – and usage of the West Butts cemetery until its formal closure in 1855, 1815 marked a turning point, the end of an era in the history of the burial ground. The world had changed in the 80 years since the Reverend Bird and his fellow Baptists had '... united & [become] one people or Church ...'; the effects of the discoveries, inventions, philosophies, economic expansion, and domestic and international politics of the 18th century partly outlined in Chapter 1 had subtly – and in some cases brutally – altered English society and the people within it.

June 1815 saw the battle of Waterloo; the final decisive encounter in the Napoleonic Wars, the latest phase of which had commenced in 1812. Bonaparte, unwilling to accept his defeat, had escaped from his banishment in Elba in the spring and returned to France to re-form his army. He finally surrendered to British forces in July at Rochefort and in October was sent to St Helena. This too marked the end of an era – philosophically and physically – which had dominated much of Europe since the commencement of the French Revolution in 1789. Britain's war with France, undertaken across large tracts of Europe and across continents at sea, had lasted almost 25 years; its cessation released men, money, and the – particularly maritime – economy. It has been estimated, for example, that *c.* 1.3–1.6% of the country's population comprised Royal Naval personnel (often unwillingly as a result of pressing) in 1802, a total of 903 vessels being in commission in 1805 (McKee 1974, 235). Despite the growing efficiency of the convoy system, hundreds of merchant vessels had continued to be lost due to enemy action (capture or sinking), to the detriment of international trade in particular (Gardiner 1995, 16–7).

The face of the countryside and the towns had changed. Increased agricultural mechanisation in the latter part of the 18th century required large, enclosed fields to be workable, resulting in the *General Inclosure Act* of 1801. The development of Meikle's threshing machine in 1786, following on from earlier improvements (Chapter 1), brought increased productivity and a less labour-intensive regime. Breeding programmes produced larger, more profitable livestock and led to the adoption of mutton as a favoured meat type. Increased productivity could support population growth in a way not previously possible, but increased mechanisation required a smaller workforce. This resulted in a shift in occupation to the growing manufacturing industries – largely textiles, the demand for which was fuelled by the increased population – and eventually in location as more of the former agricultural community moved to the towns in search of employment in the factories which replaced the early cottage industries.

The seeds of the Industrial Revolution had been sown in the late 17th–early 18th centuries with sporadic early mechanisation improving the efficiency of various parts of the spinning and weaving processes, assisted by the development of steam power. Mutually beneficial improvements occurred in the efficiency and safety of coal mining – such as the introduction of Davy's safety lamp in 1815 – and other extractive industries, with more effective fuelling of machinery and the production of better quality metal parts for use in textile manufacturing. Small factories for the production of goods had been in existence since the early 18th century, but increased demand led to their introduction on an 'industrial' scale, with increased mechanism and assembly-line working practices.

Poole remained dominated by its marine mercantile and fishing industries, but the trade with Newfoundland, still flourishing in 1813, was to start to fall-off following the end of the Napoleonic wars, heralding increased competition from other countries, in part fed by various settlements after the wars (Sydenham 1839, 401–5).

Methods of travel for now remained by horse or wind-power but this was soon to change; steam locomotion was first achieved in 1805, though it was to be another 20 years before the first steam train was to run. By 1820 a national canal network was in existence. Largely used for the transport of goods this means proved both faster and more efficient than transport by road (a horse could pull 12 times the load by barge as the same animal pulling a cart). Langley's 1817 map of Dorset shows an extended network of routes

leading to and from Poole; in addition to those in existence in 1735, there were direct roads to Blandford, and to Dorchester and Weymouth via Wareham. Major and minor routes now extended all around Poole harbour onto the Isle of Purbeck (Beaton 2001, 77).

Despite the various military confrontations, France had continued to be the leader in fashion. Towards the end of the 18th century the classicism which had affected architecture and music began to be felt in the world of fashion; both male and female clothing adopting simpler styles and plainer cuts. Short-waisted, narrow-skirted dresses with simple sleeves puffed at the shoulder replaced the sometimes exaggerated flamboyance of 18th century clothing; the body was no longer confined by corsets or exaggerated by padding – including the bizarre 'stomach pouch' of the late 1700s. The tubular dress shape left no room for pockets, consequently the handbag or reticule was invented and invited much early ridicule. Wraps and shawls became popular and high-heeled shoes were discarded in favour of slippers. Most males had ceased to sport wigs – the final death-knell being the tax imposed on hair-powder in 1795 – and the three-cornered hat had been replaced by high-crowned, narrow brimmed 'beaver' hats. Coats and waistcoats had become shorter and simpler, the cut-away tailcoat comprising the fashionable outer garment.

Musically the second decade of the 19th century lay on the cusp between the Classical and Romantic genres, the former spilling over into the latter long before the 'official' date of its commencement (1830). The Baroque style pre-eminent in 1735 had given way to the more balanced, orderly Classical form in the mid-18th century (*c.* 1750–1830; Kennedy 1996). The style produced works emphasising formal beauty rather than emotional expression, though the latter was far from lacking, as is admirably illustrated by such examples as the emotionally electric 'let there be light' and dawning of the first day in Haydn's *The Creation* (1795), and the unequalled dramatic feeling of Mozart's operas. With the form came the development of symphonies, concertos, and chamber music, fed by Haydn's (1732–1809) 'inexhaustible inventive flare' and Mozart's acknowledged genius (1756–1791; *ibid.*).

J.C. Bach (1735–1782) – 'London Bach' – was the first composer to prefer the pianoforte to the harpsichord. Development of the instrument commenced in the late 17th century, but its use was limited until the late 18th century following refinements in construction, the increased robusticity and addition of the sustaining pedal in the early 19th century leading to its universal adoption. Beethoven (1770–1827) radically transformed every musical form he worked on, his mastery of structure and key relationships revolutionising and expanding several musical forms including the transformation of the minuet into the tempestuous, exultant scherzo (*ibid.*). Although technically a 'Classical' composer, the worship of nature, key to the Romantic movement, is gloriously present in his *Pastoral* symphony of 1808. Ironically, Schubert (1797–1828), though classed as a 'Romantic' composer, wrote most of his works in the two decades prior to the supposed commencement of the style. Possibly most famous for his songs – beloved of musical evenings, also featuring the piano, throughout the 19th century – 144 of which were composed in 1815 together with other works, the fantastic exuberance of his string quartets such as *Death and the Maiden* must have astonished early 19th century audiences as they still have the power to do today.

The novel was now a well-accepted literary form and continued to excite the public imagination, the late 18th century heralding an expansion in the number of female writers and the growth of the 'romantic novel'. Many of those destined to become the great writers of the 19th century were yet unborn or unpublished – Gaskell (b. 1810), Dickens (b. 1812), Trollope (b. 1815), Eliot (Mary Ann Evans; b. 1819), and the Brontë sisters (b. 1816–1820). However, the first of Walter Scott's numerous romantic and historical novels, *Waverley*, had been published in 1814, and that mistress of witty and gentle satirical observation of the middle-classes – including their love of the 'gothick' novel – Jane Austen, saw all six of her best known novels published between 1811 and 1818, including *Emma* in 1815 (Tomalin 1998).

The Romantic movement continued to dominate in poetry. The new interest in old ballads and the ballad style led to the collaborative *Lyrical Ballads* by Wordsworth and Coleridge in 1798, including the latter's best known work *The Rime of the Ancient Mariner* (Wright 1968). The visionary eccentric Blake had been at his most prolific in the latter part of the 18th century but was still writing and producing his striking illustrations into the 1820s (*The Everlasting Gospel* 1818; Kazin 1976). Byron (d. 1824) had published parts i and ii of *Childe Harold* in 1812, but one of his best known works – *Don Juan* – commenced in 1819, was to remain unfinished at his death in 1824 (*ibid.*). Keats' short career began with the publication of his first volume of *Poems* in 1817, *La Belle Dame sans Merci* coming to press in 1820 – the year of his death.

The latter part of the 18th century had seen the rise of that often vicious art form the satirical caricature, arguably the most brilliant exponent of which was James Gillray, who died in 1815. Whilst the Royal family (particularly King George III and his son the Prince Regent) and politicians – whose follies and vices were portrayed with often quite shocking crudity – were ready targets, Gillray also exercised his savage pen expertly on the French Revolution and Napoleon in particular (Godfrey 2001). Lesser mortals were not spared his scathing satirical wit, the superficialities of society and fashion being held-up to ridicule in

illustrative form in the same way as writers such as Pope had done in print in the earlier part of the 18th century.

The world of ceramic art saw the establishment of what was to become the Royal Doulton Company in London in 1815, producing decorative items in stoneware in addition to the less aesthetic, but arguably of greater value to society in general, salt-glazed sewer pipes. The move to the Potteries to join those established there in the preceding century – much of whose clay was supplied from the Isle of Purbeck via Poole (Sydenham 1839, 401) – did not occur until the latter part of the 19th century.

Between 1815 and 1822, John Nash redesigned the Royal Pavilion in Brighton for the Prince Regent. The exotic exterior and interior of the palace, heavily influenced by Chinese and Indian fashion and incorporating Mogul and Islamic architectural elements, represented an example of the alternative to the mainstream Regency architectural style with its more classical form reminiscent of the preceding decades.

The emergence of the concept of a 'seaside-holiday' came with the massive increase in the popularity of sea-bathing in the latter part of the 18th century. Resorts developed on the Dorset coast to either side of Poole at Bournemouth and Weymouth, the king being advised to visit the latter for the good of his health, whilst his son, the Prince Regent – as noted above – preferred the attractions of Brighton further to the east (and, presumably, further from his father).

The 19th century heralded a growth in the notion of 'childhood', leading to changes in the mode of discipline, and the development of educational toys and books. Amongst the growing number of adult novels which were being written, 1815 saw the completion by the Brothers Grimm of *Grimm's Fairy Tales*. The commencement of the Sunday School movement in 1780 led to the provision of 4–5 hours schooling – reading, writing, arithmetic, and catechism – for increasing numbers of working-class children; 200,000 in 1800, 2 million by 1850. The movement, the wisdom of which was questioned by some, provided a potential means of social advancement and also assisted in the education of working-class adults, representing the forerunner of many private and quasi-public church schools. The Sunday school in Poole was established in 1792 to teach the children of '... mariners, labourers, and other poor persons ...' (Sydenham 1839, 412–4). There was to be no national school in the town until 1835 (*ibid.*, 454).

The 'Enlightenment' of the 18th century led to the emergence of the English feminist movement in the

Figure 51 Post-excavation view of the site from the south-west, with the RNLI headquarters building in the background

late 1700s, with individuals such as Mary Wollstonecraft arguing that the new political rights and freedoms should extend to women. The recognised need for other forms of social provision for individuals saw the foundation of Scotland's first Life Assurance Society – the Scottish Widows Fund – in 1815, designed to provide for the female relatives of fund holders who died during or after the Napoleonic wars.

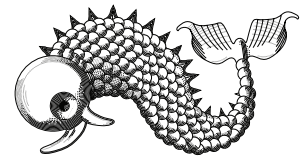
1815 saw the birth of a future major influence in Prussian and, ultimately, international politics with the birth of Otto von Bismarck, destined to become the first Chancellor of a united Germany.

The Royal National Lifeboat Institute

The first lifeboat service – the National Institution for the Preservation of Life from Shipwreck, later to become the Royal National Lifeboat Institute (RNLI) – was set-up in 1824 under the co-ordination of Sir William Hillary. The same year saw the foundation of the Gold Medal for outstanding bravery. Although the first lifeboat station in Poole was not established until 1865, rescues had been undertaken from the town over at least the preceding three decades, with Gold and Silver medals being awarded to crew members of vessels for rescues undertaken in 1824, 1825 and 1853. The first lifeboat house was built at Sandbanks, with subsequent relocations in 1882 to Fishermans Dock and again in 1989 to its current location on the Town Quay adjacent to Poole Bridge in 1989. The current coastal lifeboat station is the busiest in the British Isles.

The land to the immediate north-east of the former West Butts burial ground is occupied by the RNLI headquarters building (Fig. 51). The RNLI transferred its headquarters to the town in 1974. Initially housed in temporary accommodation, construction of the headquarters building was competed in 1975. Work on the RNLI depot site, on the north side of West Quay Road, commenced the same year. The excavation of the former West Butts cemetery was occasioned by the expansion of the headquarters, including the construction of the RNLI college on the north side of West Quay Road, adjacent to the backwater channel and Longfleet or Holes Bay (opened 2006). It is here that lifeboat crews from the UK and the Irish Republic are trained. The burial ground site is now occupied by the new Lifeboat Support Centre and RNLI stores (back cover); the commemorative stone inserted into the cemetery wall in the 1870s by George Curtis (p.116) now being set in the south wall of the new building close to its original location (back cover).

It is fitting that a town, the existence and great prosperity of which over many centuries has been firmly routed in its flourishing maritime economy – both fishing and trade – should be home to an institution dedicated to the preservation of the lives and safety of mariners.



FINIS

1806 REGISTRATION FOUNDATION OF THE HILL

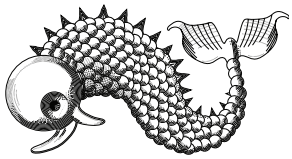
To the worshipful the Mayor
and other Magistrates of the Town and County
of Poole.

We whose Names are underwritten being part of a Congregation of protestant Dissenters of the Baptist Denomination meeting in Poole do certify that we have erected a Chapel for the worship of God adjoining to a House occupied by Susanah Hayward situate between High Street and Hill Street in the said Town and County and beg that the same may be registered in the Records of the said Town and County of Poole and that a Certificate of the same may be granted to us.

Signed this 14th day of October 1806

For Saunders
John Watts
Samuel Smith
John Poole
Stephen Rowe
John Cox
John Hatchard
Joseph Toms
Richard Burradge
Jno Sealey
John Brooks
John Wilks Frampton.

CERTIFICATE FOR THE STREET BAPTIST CONGREGATION



To the worshipful the Mayor
and other Magistrates of the Town and County
of Poole

We whose names are underwritten being part of a Congregation of protestant Dissenters of the Baptist Denomination meeting in Poole do certify that we have erected a Chapel for the worship of God adjoining to a House occupied by Susanah Hayward situate between High Street and Hill Street in the said Town and County and beg that the same may be registered in the Records of the said Town and County of Poole and that a Certificate of the same may be granted to us -

Signed this 14th day of October 1806

Jos Saunders
John Watts
Samuel Smith
John Poole
Stephen Hobby
John Cox
John Hatchard
Joseph Toms
Richard Burradge
Jno Scaley
John Brooks
John Witt Frampton

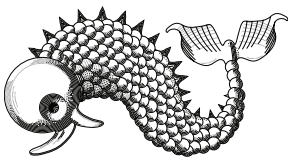
The Baptist Interest in the Town of Poole formerly meeting at the North end of West-Street (called West Butts) having declined until the meeting House was deserted by the former Hearers the House was shut up until about the Year 1788 or 1789 when Geo: Darby who said he was Heir to the Donor (who gave the Land for a Meeting House and Burying Ground for the Baptists in Poole) sold it to Mr. George Kemp who pulled down the Meeting House, in consequence of which the Baptists in this Town had no place to meet in; nor did they attempt to form themselves into a distinct Society till the Year 1804 when Mr. Joseph Saunders came from Southampton and enquired if the Baptists in this Town were desirous of opening a new Baptist Interest which was answered in the affirmative. He then desired that they might be convened together in a convenient place where they might have an opportunity to pray for direction in this matter. Mr. Eyre Smith came to Poole at the same time, united with them and encouraged them much to continue in supplications. It was then agreed to rent a Stable and Coach House belonging to Dr. Pitford near the Market Place which was fitted up for a place of Worship and was opened by the said Joseph Saunders on the 11th October 1804 who continued to preach constantly in consequence of his preaching and a probability of a Baptist Cause being about to be established there were seven Persons Baptized before the end of this Year. It was then proposed and agreed that those Persons who were Lately baptized, and others who were Members of various Baptist Churches should unite with them into a Church or Society called particular Baptists, and for the satisfaction of each other it was agreed that every one would relate their Experience of the Lords work upon their Souls, which was made to the mutual satisfaction of each other. On the twentieth day of February 1805 We the undersigned met together fasting, and after supplications to God for direction and his Blessing gave up ourselves to the Lord and to one another and subscribed our Names to a Covenant which is Written on the other end of this Book. At the same time we unitedly chose our Brethren John Watts & Sam.l Smith to be the Deacons of this Church.

Joseph Saunders
John Watts
Sam.l Smith
John Cox
John Poole
James Dorey
Joseph Toms
Stephen Hobby
Richard Burage

Elizabeth Powell
Susannah Bell
Mary Watts
Elizabeth Poole
Jane Walker
Martha Comins
Sarah Hobby
Ann Cox
Mary Edwards
Anne Lipson
Ann Townsell
Elizabeth Smith

Ann Smith
Elizabeth Baker
Elizabeth Meade

EXTRACT FROM CHURCH BOOK



The Baptist Interest in the Town of Poole formerly meeting at the North end of West Street, called West Butts having declined until the meeting House was deserted by the former Hearers the House was shut up until about the year 1788 or 1789 when Geo: Darby who said he was Heir to the Donor (who gave the Sand for a Meeting House and burying Ground for the Baptists in Poole) sold it to Mr. George Kemp who pulled down the Meeting House in consequence of which the Baptists in this Town had no place to meet in, nor did they attempt to form themselves into a distinct Society till the Year 1804 when Mr. Joseph Saunders came from Southampton and inquired if the Baptists in this Town were desirous of opening a new Baptist Interest which was answered in the affirmative. He then desired that they might be convened together in a convenient place where they might have an opportunity to pray for direction in this matter. Mr. Opie Smith came to Poole at the same time, united with them and encouraged them much to continue in supplications. It was then agreed to rent a Stable and Coach House belonging to Dr. Mitford near the Market Place which was fitted up for a place of Worship and was opened by the said Joseph Saunders on the 14 October 1804 who continued to preach constantly in consequence of his preaching and a probability of a Baptist Cause being about to be established there were seven Persons Baptized before the end of this year.. It was then proposed and agreed that those Persons who were lately baptized, and others who were Members of various Baptist Churches should unite with them into a Church or Society called particular Baptists, and for the satisfaction of each other it was agreed that every one would relate their Experience of the Lords work upon their Souls, which was much to the mutual satisfaction of each other. On the twentieth day of February 1805 We the undersigned met together fasting, and after supplications to God for direction and his Blessing gave up our Selves to the Lord and to one another and subscribed our Names to a Covenant which is Written in the other end of this Book. At the same time we unitedly chose our Brethren John Watts & Saml Smith to be the Deacons of this Church.

Joseph Saunders
John Watts
Sam Smith
John Cox
John Poole
James Dorey
Joseph Toms
Stephen Hobby
Richard Burage

Elizabeth Powell
Susanna Bell
Mary Watts
Elizabeth Poole
Jane Walker
Martha Comins
Sarah Hobby
Ann Cox
Mary Edwards
Ann Sipson
Ann Hounsell
Elizabeth Smith

Ann Smith
Elizabeth Baker
Elizabeth Wade

APPENDIX 1
GRAVE CATALOGUE

(including charnel pits)

Grave 121 (Sk 123; 124)
(Figs 15, 26 & 34)
NW-SE, sub-rectangular cut, wider to N; near vertical sides, flat base; 2.20 m x 0.73 m, 0.22 m deep (base at 0.99 m aOD). Two coffined burials: 123 extended, supine, overlies right shoulder of 124; 124 supine extended, hands to side, slightly to left inside coffin. Single fill: mixed dark blackish-brown, dark brown & reddish-yellow silty sand, occasional sub-angular flint gravel inclusions. Cut 101. Lower limbs of 123 truncated by machine.
Human Bone:
Sk 123: c. 65%; foetus *c.* 7–8 month
Sk 124: c. 99%; adult *c.* 45–50 yr, female
122a (redeposited): 1 tooth, adult *c.* 18-35 yr
122b (redeposited): 1 bone fragment, infant *c.* 1.5–2.5 yr
Coffin Furniture:
With Sk 123
19 iron coffin nails (ONs 4051–2, 4054, 4056, 4085, 4088-90, 4092, 5750)
28 small copper alloy upholstery pins, around feet/legs (ONs 4059–61, 5749)
Five copper alloy pins, two at skull (ONs 4046, 4053, 4057–8, 4394)
With Sk 124
2 iron grips, at head & foot, type A, length 145mm (ONs 4011, 4013; Fig. 28A)
76 iron coffin nails (ONs 4134–9, 4158–74, 4176–81, 4183–9, 5752)
18 small copper alloy upholstery pins, chest area (ON 5751)
In backfill (122)
16 iron nails (ONs 4007, 4010, 4012, 4086, 4133, 4182, 4190)
79 small copper alloy upholstery pins (ONs 4123–31)

Grave 126 (Sk 128)
(Fig. 15)
SE–NW, sub-rectangular cut, wider mid-section; steep sloping sides, flat base; 1.85 x 0.47 m, 0.13 m deep (base at 0.99 m aOD). Extended supine, hands by sides. Single fill: dark reddish-brown silty sand, yellow, orange & black lenses, occasional rounded flint inclusions. Cut 101 although possibly disturbed earlier grave, human bone redeposited in charnel pits 143, 159, 162 (Sk 145). Possible grave-marker (cut 165) at head end.
Human Bone: *c.* 90%; adult *c.* 45–60 yr, female
Coffin Furniture:
97 iron coffin nails (ONs 4063–84, 4091, 4096–7, 4395; 5753, 5754)

Grave 129 (Sk 131)
SW–NE, sub-rectangular cut, wider SW portion; vertical sides, flat base; 1.76 x 0.61 m, 0.64 m deep (base at 1.16 m aOD). Extended supine, hands by sides. Single fill: dark yellowish-brown sandy silt, occasional coarse sub-angular flint gravel inclusions. Cut 101.
Human Bone: *c.* 98%; adult *c.* 45–55 yr, male
Coffin Furniture:
8 iron grips (one each end, three each side), type B, length 155 mm (ONs 4191–8)
79 iron coffin nails (ON 4684; 5756)
Copper alloy pin (ON 5755)
In backfill
Copper alloy square buckle, missing pin (ON 4087)

Grave 146 (Sk 148)
SW–NE, sub-rectangular, wider SW portion; steep sided, flat base, (coffin impression); 1.9 x 0.7 m, 0.6 m deep (base at 0.92 m aOD). Coffined, extended supine, hands over lower pelvis. Single fill: mixed dark greyish-brown & yellowish-brown sandy silty loam, common sandstone fragments, occasional rounded flint gravel inclusions. Disarticulated bone on coffin. Charnel pit 371 cut into base. Cut graves 199 & 358 (disturbing burials).
Human Bone: *c.* 98%; adult *c.* 50-60 yr, ??male
Redeposited in backfill: *c.* 5%; adult *c.* 45-60 yr, female; *c.* 45%, adult *c.* 45–60 yr, female
Coffin Furniture:
7 iron coffin grips (1 each end, 2 left side, 3 right side), type C, lengths 130–5 mm (ONs 4308–4313, 4315) N.B., 8 grips appear on plan, but ON 4314 not seen in post-excavation.
Iron breast plate on coffin lid (ON 5055)
2 further iron plates on top of coffin lid (ONs 4305, 4306) N.B., 3 plates appear on plan, but ON 4307 not seen in post-excavation.
Iron coffin nail (ON 4682)
Copper alloy pin, at base of skull (ON 5052)

In backfill

3 iron coffin grips, type C, lengths 135–45 mm (ONs 4098, 4120, 5225)
Copper alloy pin (ON 5757)
Iron coffin plate fragments (ON 5759)
54 iron nails (ONs 4102, 4122, 4132, 5758, 6013, 6014)

Grave 149 (Sk 151)

SW–NE, Sub-rectangular cut, wider mid-section; vertical sides, flat base; 1.79 x 0.47 m, 0.47 m deep (base at 0.96 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, reddish-yellow sand mottling, sparse sub-angular/sub-rounded flint gravel inclusions. Cut grave 208 (backfill only).

Human Bone: *c.* 97%; adult *c.* 35–45 yr, female

Coffin Furniture:

2 iron coffin grips, head & foot, type C, lengths 125–30 mm (ONs 4202, 4209)
21 iron coffin nails, clustered at foot end (ONs 4107, 4203–6, 4208, 5761)
3 copper alloy pins (ON 5760)

In backfill

4 iron nails (ONs 4101, 4103, 4108)

Grave 152 (Sk 154)

(Fig. 35d)

SW–NE, incomplete, sub-rectangular cut; vertical sides, flat base; 0.42 x 0.43 m, 0.08 m deep (base at 1.23 m aOD). Coffined, supine. Single fill: greyish-brown & dark greyish-brown sandy silt, occasional sub-angular/sub-rounded flint gravel inclusions. Cut 102. Truncated below mandible by modern disturbance.

Human Bone: *c.* 18%; juvenile 6–7 yr, ??male

Coffin Furniture:

2 iron coffin grips, both at head end, type C, lengths 85–90 mm (ONs 4140, 4141)
30 iron coffin nails (ONs 4142–7; 4149–51; 5762)
10 small iron upholstery pins (ONs 4152–7; 4683)

Grave 167 (Sk 169)

(Fig. 34)

SW–NE, sub-rectangular cut; vertical sides, flat base; 1.02 x 0.54 m, 0.14 m deep (base at 1.19 m aOD). Coffined, extended supine, hands on respective proximal femur. Single fill: dark greyish-brown silty sand, occasional rounded flint gravel inclusions. Cut 101. Lower limbs truncated by machine.

Human Bone : *c.* 60%; adult *c.* 35–50 yr, male

Coffin Furniture:

2 iron coffin grips, at sides of head, type C, length 120 mm (ONs 4199, 4200)
Copper alloy pin (ON 5764)
16 iron coffin nails (ON 5765)

Grave 173 (Sk 175)

(Figs 15, 35a, 36c)

SE–NW, sub-rectangular cut; vertical sides, flat base; 2.08 x 0.42 m, 0.72 m deep (base at 0.79 m aOD). Coffined, extended supine, hands together below pelvis. Single fill: dark brownish-black, reddish-yellow mottled silty sand, occasional sub-rounded flint gravel. Disarticulated human bone (Sk 174). Cut grave 196 (disturbing burial).

Human Bone:

Sk 173: *c.* 99%; adult *c.* 30–40 yr, male
Sk 174 (redeposited): *c.* 12%; adult *c.* 35–50 yr, male

Coffin Furniture:

6 iron coffin grips (one each end, two each side), type C, lengths 105–10 mm, with grip plate fragments, possible stamped/incised floral decoration (ONs 4228, 4231, 4232, 4235–7)
64 iron coffin nails (ONs 4229–30, 4233–4, 4257, 4261–71, 5047, 5219, 5766, 5768)
10 copper alloy tacks (ON 5767)
Copper alloy button (ON 4248)

Grave 176 (Sk 178)

(Fig. 36d)

SW–NE, sub-rectangular cut; steep sides, flat base; 1.9 x 0.5 m, 0.93 m deep (base at 0.78 m aOD). Coffined, extended supine, hands lateral of respective proximal femur, movement of head & lower vertebrae to right. Single fill: yellow, yellowish-brown, & dark greyish brown sand & silt, occasional sub-angular/sub-rounded flint gravel inclusions. Disarticulated, redeposited human remains (Sk 188, 189, 177a, 177b). Cut graves 179 & 281 (disturbing burials); cut grave 284 (backfill only).

Human Bone:

Sk 178: *c.* 99%; adult *c.* 19–23 yr, female
Sk 188: *c.* 15%; adult *c.* 35–50 yr, ?male; = Sk 181
c. 12%; adult >25 yr, ??male; ?= Sk 189
Sk 189: 11 bones; adult *c.* 25–40 yr, ? male
177a (redeposited in backfill): *c.* 3%; adult *c.* 30–45 yr, ??male; = Sk 181
177b (redeposited in backfill): *c.* 20%; infant *c.* 9–12 months

Coffin Furniture:

6 iron coffin grips (1 each end, 2 each side), type C, length 125 mm (ONs 4281–6)
2 iron coffin grips, both at left hand, type C, lengths 90–110 mm (ONs 4290, 4351)
41 iron coffin nails (ONs 4287–9, 4317–50)

In grave backfill:

Iron coffin grip, type C (ON 5967); possibly from Gr 179
2 copper alloy pins (ON 4201, 4222)
Copper alloy strip, uncertain function (ON 4223)
Copper alloy merchant's token, 17th century obverse illegible, reverse –RICH—OVTH*** (ON 5046)
82 iron nails (ONs 5770, 5968)
Iron horseshoe fragment (ON 5744)

Grave 179 (Sk 181)
SW–NE, sub-rectangular cut; vertical sides, flat base; 2.0 x 0.6 m, 0.62 m deep (base at 0.97 m aOD). Coffined, extended supine, hands lateral of respective proximal femur. Single fill: dark greyish-brown, dark yellowish-brown & yellow silt & sand, rare limestone & occasional sub-rounded/sub-angular flint gravel inclusions. Cut grave 284 (backfill only). Upper body truncated by grave 176.
Human Bone: *c.* 50%; adult *c.* 35–50 yr, male
Coffin Furniture:
2 iron coffin grips (1 at side, 1 at foot end), type C, length 115–30 mm (ONs 4399, 4400)
45 iron coffin nails (ONs 4401–3, 4435–63, 5772)
Copper alloy tack (ON 5771)
In backfill
2 iron coffin grips, type D, lengths 130–40 mm, with grip plates (200 x 68 mm; 220 x 68 mm) (ONs 4296, 5713) possibly from Gr 284
24 iron nails (ONs 5617, 5622)

Grave 182 (Sk 184)
SW–NE, sub-rectangular cut, wider section in western portion; steep sided, flat based; 1.87 x 0.46 m, 0.66 m deep (base at 0.98 m aOD). Coffined, extended supine, hands lateral of respective proximal femur. Single fill: dark yellowish-brown silty sand, occasional flint gravel inclusions. Cut grave 382 (backfill only).
Human Bone: *c.* 96%; adult *c.* 45–60 yr, male
Coffin Furniture:
2 iron coffin grips (1 *in situ* at foot end), type C, length 130–40 mm (ONs 4258, 4297)
136 small copper alloy upholstery pins, spelling biographical details (ONs 4210–13, 5049, 5773)
21 iron coffin nails (ONs 4259–60, 4298–4303, 4259–60, 5774)
Copper alloy pin (ON 5769)

Grave 185 (Sk 187)
(Fig. 41d)
SW–NE, sub-rectangular cut; vertical sides, flat base; 1.7 x 0.54 m, 0.19 m deep (base at 1.29 m aOD). Coffined, extended supine, hands lateral of/under proximal femur. Single fill: dark greyish-brown silty sand, occasional rounded & sub-angular flint gravel inclusions. Disarticulated bone in charnel pit 211, cut into base of grave 185 under Sk 187. Cut grave 193 (disturbing burial). Feet truncated by machine
Human Bone: *c.* 80%; adult *c.* 35–50 yr, female
Coffin Furniture:
Iron coffin grip, by left knee, type C (ON 4256)
45 iron coffin nails (ONs 4238–47, 4249–55, 5775)

Grave 190 (Sk 192)
SW–NE, sub-rectangular cut; steep sides, flat base; 1.53 x 0.57 m, 0.20 m deep (base at 1.26 m aOD). Coffined, extended supine. Single fill: dark greyish-brown sandy silt, sub-angular/sub-rounded flint gravel inclusions. Disarticulated human bones. Cut grave 213 (disturbing burial); cut (backfill only) 216 & 240. Disturbed thorax & lower legs.
Human Bone:
Sk 192: *c.* 45%; adult *c.* 40–50 yr, female
191a (redeposited): *c.* 17%; adult *c.* 30–50 yr, male
191b (redeposited): 4 bone fragments; adult > 20yr, ? female; = sk 192
191/124(redeposited): 8 bone fragments; adult *c.* 30–45 yr ?male; most = sk 215
Coffin Furniture:
Iron coffin grip, head end, type C (ON 4273)
Iron loop-shaped fitting, in coffin (ON 5681)
7 iron coffin nails (ONs 4274–80)
5 small copper alloy upholstery pins (ON 5776)
Iron coffin plate fragments (ON 5777)
2 copper alloy pins, with skull (ONs 4272, 4685)
In backfill
15 iron nails (ONs 4214–16, 4218–21, 4224–7, 5050)

Grave 193 (Sk 195)
(Fig. 15)
SW–NE, sub-rectangular cut, wider midsection; vertical sides, flat base; 1.85 x 0.57 m, 0.14 m deep (base at 1.14 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown silty sand, occasional sub-angular/rounded flint gravel inclusions. Cut 101. Lower left leg removed by grave 185 (see pit 211).
Human Bone: *c.* 98%; adult *c.* 35–45 yr, female
Coffin Furniture:
Iron coffin grip, head end, type D, length 125 mm (ON 4398)
10 iron coffin nails (ONs 4404–4413)
93 large copper alloy studs used decoratively around edge & across lid of coffin (ONs 4368–72)
106 small copper alloy upholstery pins used in decorative lozenge pattern on coffin lid (ONs 4373–79, 5778–9)

Grave 196 (Sk 198; 205; 207)
(Figs 15, 16 & 24)
SW–NE, sub-rectangular cut; steep sides, flat base; 2.1 x 0.54 m, 0.28 m deep (base at 1.16 m aOD). Three coffined burials: two immature individuals (205, 207) overlying adult (198). All supine, 198 & 205 extended. 198 hands by sides. Single fill: dark blackish-brown & reddish-yellow silty sand, occasional sub-angular flint gravel inclusions. Cut grave 258 (backfill only). Sk 198: lower legs removed by grave 173. Sk 205: above legs removed by modern truncation. Sk 207: lower limbs removed by grave 173.
Human Bone:
Sk 198: *c.* 65%; adult *c.* 35–55 yr, male
Sk 205: *c.* 20%; infant *c.* 3–5 yr
Sk 207: *c.* 5%; juvenile *c.* 5–6 yr
197 (redeposited): 1 bone, infant *c.* 2–5 yr; = 205
Coffin Furniture:
With Sk 205
Iron coffin grip, at feet, type D, length 120 mm, with grip plate (140 x 25 mm) (ON 4415)
24 iron coffin nails (ONs 4291–5; 4304; 4419–25, 5992, 5979)

23 small copper alloy upholstery pins, spelling biographical details (ONs 4416–18)

With Sk 198

Iron coffin grip, at head, type C, length 140 mm, with grip plate (210 x 60 mm) (ON 4414)

Iron coffin grip, at feet, type C, length 125 mm, with grip plate (220 x 75 mm) (ON 4353)

31iron coffin nails (ONs 4474–83; 4500, 5781, 5881)

122 small copper alloy upholstery pins spelling biographical details (ONs 4484–93; 4498–9; 5780)

16 copper alloy pins (ON 5880, 5937)

With Sk 207

Iron coffin grip, at head, type D, length 120 mm, with grip plate (140 x 35 mm) (ON 4352)

48 small copper alloy upholstery pins, spelling biographical details (ONs 4354, 4361, 4363–4, 4366, 5885)

21 iron coffin nails (ONs 4355–60, 4362, 4365, 4367, 5972–3)

Grave 199 (Sk 201)

(Fig. 39d)

SW–NE, sub-rectangular cut wider at W end; vertical sides, flat base; 1.9 x .35 m, 0.6 m deep (base at 0.93 m aOD). Coffined, extended supine, hand by side. Single fill: dark brown & yellowish-brown sandy silt, occasional sub-rounded/sub-angular flint gravel & grit inclusions. Cut 101. Thorax, left limbs removed by grave 146.

Human Bone: *c.* 55%; adult >50 yr, female

Coffin Furniture:

4 iron coffin grips (1 each end, 2 right side), type C, lengths 140–50 mm (ONs 4464–7)

151 iron coffin nails (ONs 4470–3, 5222, 5783, 5883)

3 copper alloy pins (ONs 5223, 5782, 5882)

Grave 202 (Sk 204)

(Fig. 42a)

SW–NE, sub-rectangular cut; moderately sloping sides, irregular base; 0.98 x 0.32 m, 0.29 m deep (base at 1.01 m aOD). Coffined, extended, supine burial, tilting down to right. Single fill: yellowish-brown sandy silt, sparse flint & quartz pebble inclusions. Cut grave 208 (backfill only).

Human Bone: *c.* 80%; infant 1.5–2.5 yr

Coffin Furniture:

65 iron studs, 5 with skull (ONs 5053, 5784)

Grave 208 (Sk 210)

(Figs 40a & 22)

SW–NE, sub-rectangular cut, bows slightly to S; steep sides, flat base; 1.85 x 0.58 m, 0.21 m deep (base at 0.76 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, sparse sub-rounded gravel inclusions. Cut grave 331 and charnel pit 365 (backfill only). Cut by graves 149 & 202 (undisturbed).

Human Bone:

Sk 210: *c.* 99%; adult >50 yr, female

Sk 210b: (redeposited) 3 bone fragments, adult >18 yr

Coffin Furniture:

2 iron coffin grips (one each end), type F, length 140 mm (ONs 4396, 4397)

25 iron coffin nails (ONs 5048, 5786, 5886)

Copper alloy pin, with skull (ON 5054)

Grave 213 (Sk 215)

(Fig. 25)

SW–NE, sub-rectangular cut widening to NE; steep sides, flat base; 0.80 x 0.58 m, 0.22 m deep (base at 1.01 m aOD). Coffined, extended supine. Single fill: dark greyish-brown sandy silt, sparse sub-rounded/sub-angular gravel inclusions. Cut grave 216 (disturbing burial). Thorax, most of legs, lower arms removed by grave 190.

Human Bone:

Sk 215: *c.* 30%; adult >45 yr, male

Sk 243 (redeposited): *c.* 17%; adult *c.* 35–45 yr, ??female; = Sk 218

Coffin Furniture:

Iron coffin grip, head end, type A, length 135 mm (ON 4380)

107 small copper alloy upholstery pins, spelling biographical details (ONs 4426–32; 4434; 4533; 5636, 5673; 5787; 5887)

Iron coffin plate fragments, position unknown (ON 5664)

In backfill

Iron coffin grip, type D, length 150 mm, with grip plate (215 x 65 mm) (ON 4381) possibly from grave 216

14 iron nails (ONs 4382–90, 4392–3)

Grave 216 (Sk 218)

(Figs 16 & 38)

SW–NE, sub-rectangular cut wider at W end; steep sides, flat base; 1.55 x 0.51 m, 0.38 m deep (base at 0.80 m aOD). Coffined, extended supine, hands between mid-femora. Single fill: dark reddish-brown sandy silt, sparse course gravel inclusions. Skull removed by grave 213, and apparently replaced at distal end of grave, possibly in a pit though no cut evident (see grave 213)

Human Bone: *c.* 74%; adult *c.* 35–45 yr, female

Coffin Furniture:

9 iron coffin nails (ONs 5217; 5788)

In backfill

5 iron nails (ONs 4494–7, 5724)

Grave 219 (Sk 221)

SW–NE, sub-rectangular cut, wider midsection; vertical sides, flat base; 1.95 x 0.65 m, 0.19 m deep (base 1.11 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown silty sand, moderate medium sub-angular/rounded flint inclusions. Cut grave 250 (backfill only).

Human Bone:

Sk 221: *c.* 85%; adult *c.* 55–70 yr, ??male

220 (redeposited): 1 fragment; adult > 18 yr; = Sk 221

Coffin Furniture:

Iron coffin grip, head end, type C, length 135 mm (ON 4501)

Iron coffin grip, foot end, type F, length 130 mm (ON 4502)

56 iron coffin nails, clustered at head/shoulders & feet (ONs 4503–11, 4735, 5889, 5998–9)

34 iron upholstery pins (ON 5789) N.B. size unknown [not X-rayed; not seen in post-excavation]

In backfill

Iron nail (ON 5665)

Grave 222 (Sk 224)

(Fig. 40b)

NE–SW, sub-rectangular cut, slightly narrower W portion; steep sides, flat base; 1.87 x 0.44 m, 0.31 m (base at 1.16 m aOD). Coffined, extended, supine, hands by sides. Single fill: dark greyish-brown sandy silt, sparse sub-rounded/sub-angular gravel inclusions. Cut 101.

Human Bone: *c.* 97%; adult, *c.* 50–65 yr, ?female

Coffin Furniture:

6 iron coffin grips (2 each side & 1 at each end), type C, length 120 mm (ONs 4646, 4648–9, 4651, 4655, 4660)

Iron fitting, small square plate with perforation (ON 4514)

172 iron coffin nails (ONs 4515–19, 4641–45, 4647, 4650, 4652–4, 4656–9, 4686–96, 5642, 5652, 5790, 5890)

Grave 225 (Sk 227)

(Figs 16 & 24)

SW–NE, sub-rectangular cut, wider W portion; steep sides, flat base; 2.3 x 0.8 m, 0.3 m deep (base at 1.19 m aOD). Coffined, extended supine, hands by sides. Single fill: dark brown sandy silt, occasional sub-rounded/sub-angular flint gravel & soft sandstone inclusions. Cut grave 331 (backfill only).

Human Bone:

Sk 227: *c.* 70%; adult *c.* 35–50 yr, female

Sk 226a (redeposited): 10 bones; adult *c.* 20–45 yr, ??male; ?= Sk 367a

Sk 226b (redeposited): *c.* 25%; juvenile *c.* 7–8 yr

Coffin Furniture:

Iron coffin grip, head end, type F, length 120 mm (ON 4621)

2 iron coffin grip, on right shoulder & pelvis, type D, length 122–5 mm, with grip plates (180 x 65 mm) (ON 4622–3)

32 iron coffin nails (ONs 4624–6, 4631, 5661, 5663, 5791, 6017–8)

88 small copper alloy upholstery pins, spelling biographical details (ONs 4627–30, 4633–4, 5648, 5792)

3 copper alloy pins, one with skull & traces of hair attached (ONs 4520, 5662)

In backfill

Iron coffin grip, type A, length 125 mm (ON 5628)

Iron nail (ON 5653)

Copper alloy pin (ON 5650)

Grave 228 (Sk 230)

(Fig. 16)

SW–NE, rectangular cut slightly wider at W end; vertical sides, flat base; 1.8 x 0.55 m, 0.40 m deep (base at 1.13 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown, yellowish-brown, white & yellow silts & sands, occasional sub-rounded/sub-angular flint gravel & rare limestone inclusions. Cut 101.

Human Bone: *c.* 90%; adult *c.* 45–60 yr, female

Coffin Furniture:

6 iron coffin grips (one each end, two each side), type C (ONs 4521–5, 4527)

128 iron coffin nails (ONs 4526, 4536–38, 4540–2, 4546–66, 4568–78, 5639, 5735, 5794, 5956)

7 copper alloy tacks (ONs 4528–30, 5955, 5957)

4 copper alloy pins (ONs 5793)

Grave 234 (Sk 236)

(Fig. 41a)

SW–NE, sub-rectangular cut, slightly wider midsection; vertical sides, flat base; 2.2 x 0.63 m, 0.49 m deep (base at 0.99 m aOD). Coffined, extended supine, hands over/lateral of respective femur. Single fill: dark greyish-brown sandy silt, sparse sub-angular flint gravel inclusions. Cut 101.

Human Bone: *c.* 99%; adult *c.* 30-45 yr, male

Coffin Furniture:

6 iron coffin grips (2 each side & one at each end), type C, lengths 120–35 mm (ONs 4585–90)

80 iron coffin nails (ONs 4591–4606, 4617–20, 5651, 5654, 5736, 5796, 5879, 6020)

Unidentified iron object (ON 5646)

Copper alloy tack (ON 5795)

Copper alloy pin, with skull (ON 5666)

Grave 237 (Sk 239)

(Figs 16 & 28.4)

SW–NE, sub-rectangular cut, wider W portion; vertical sides, flat base; 1.96 x 0.57 m, 0.26 m deep (base at 1.17 m aOD). Coffined, extended supine, hands over respective proximal femora. Single fill: dark greyish-brown silty sand, occasional rounded/sub-angular flint gravel inclusions. Cut graves 272, 312, 328 (backfill only).

Human Bone : *c.* 98%; *c.* 35–50 yr, male

Coffin Furniture:

3 iron coffin grips (at sides at pelvis, & at head), type C, length 130 mm (ONs 4579–81)

Iron coffin grip, foot end, type D, length 120 mm (ON 4582)

30 iron coffin nails (ONs 4607–15; 5798, 6015–6)

2 copper alloy pins (ON 5220, 5797)

In backfill

Iron coffin grip length 167 mm, with grip plate (220 x 50 mm) (ON 4584; Fig. 28D)

Grave 240 (Sk 242)

SW–NE, sub-rectangular cut, slightly wider W portion; steep sides, flat base; 1.83 x 0.61 m, 0.68 m deep (base at 0.78 m aOD). Coffined, extended supine, hands by sides. Single fill; mid-yellowish-brown sandy silt, coarse sub-angular flint gravel inclusions. Cut 101. Cut by graves 190, 213 & 216 (undisturbed).

Human Bone:

Sk 240: *c.* 98%; adult *c.* 30–40 yr, female

Coffin Furniture:

Iron nail (ON 5221)

In backfill

Iron nail (ON 5799)

Grave 244 (Sk 246)

(Figs 16, 40c, 41e & 42)

SW–NE, sub-rectangular cut; vertical sides, flat base; 2.2 x 0.75 m, 0.56 m deep (base at 0.91 m aOD). Coffined, extended supine, right hand in pelvic cavity, left over left proximal femur. Single fill: dark greyish-brown, yellowish-brown, yellow silts & sands, common sub-angular/sub-rounded flint gravel, sparse ironstone inclusions. Cut graves 281, 284, & 289 (disturbing burial); cut grave 287 (backfill only).

Human Bone:

Sk 246: *c.* 95%; adult >50 yr, female

Sk 245 & 245a–d (redeposited): 300+ bones & fragments. Parts of five individuals.

adult *c.* 45–60 yr, female; ?= Sk 356 or Sk 286a

c. 60%; adult *c.* 29–35 yr, female

c. 45%; adult *c.* 35–50 yr, female

c. 60%; adult *c.* 45–60 yr, male

c. 65%; adult *c.* 45–60 yr, male

Coffin Furniture:

Iron coffin grip, at foot, type F (ON 4808)

Iron coffin grip, by foot, type D, length 135 mm, with grip plate (200 x 60 mm) (ON 4809)

127 iron coffin nails (ONs 4789–90, 4807, 4869, 5634–5, 5645, 5656, 5670, 5802, 5941–2)

97 large iron upholstery pins, clustered around feet (ONs 4794–4806, 4810, 5660, 5669)

4 large copper alloy upholstery pins (ONs 4811, 5674, 5801)

Iron tack (ON 5938)

4 copper alloy pins, with fabric & hair from skull (ONs 4868, 5675, 5680, 5939)

In backfill

3 iron coffin grips, type F (ONs 4791–3)

Iron coffin grip, type D (ON 5671)

5 iron coffin grips, two type C, one type D, two type F (ONs 5940, 5943–4, 5949, 5951)

Iron coffin grip plate, with incomplete grip of unknown type (ON 5945)

31 large iron upholstery pins (ON 5947)

Iron bar (ON 5946)

Iron sheet fragment (ON 5948)

Unidentified iron object/fragments (ON 5742, 5950)

Bone handle (ON 4583)

Slate pencil (ON 4616)

Grave 247 (Sk 249)

(Fig. 17)

SE–NW, sub-rectangular cut; vertical sides, flat base; 2.05 x 0.62 m, 0.22 m deep (base at 0.98 m aOD). Coffined, extended supine, hands by sides. Right leg turned out. Single fill: dark brownish-grey, reddish yellow patches silty sand, moderate sub-angular gravel inclusions. Cut 101.

Human Bone: *c.* 99%; adult *c.* 45–60 yr, female

Coffin Furniture:

6 iron coffin grips (1 each end, 2 each side), type C, lengths 120–30 mm (ONs 4635–40)

31 iron coffin nails (ONs 4661–74, 5804, 5993)

7 copper alloy tacks (ON 5980)

Copper alloy pin (ON 5803)

In backfill (248)

12 small copper alloy upholstery pins (ON 4632)

Grave 250 (Sk 252)

SW–NE, sub-rectangular cut; vertical sides, flat base; 1.9 x 0.54 m, 0.17 m deep (base at 1.18 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown silty sand, occasional rounded/sub-angular flint gravel inclu-sions. Cut graves 328 & 423 (backfill only). Cut by grave 219 (undisturbed).

Human Bone: *c.* 90%; adult *c.* 45–55 yr, ?male

Coffin Furniture:

2 iron coffin grips (head & foot), type C, lengths 110–20 mm (ONs 4699, 4700)

10 iron coffin nails (ONs 5806, 5997)

Iron stud, by left hand (ON 5657)

2 copper alloy pins (ON 5805)

Grave 253 (Sk 255)

SW–NE, rectangular cut; vertical sides, flat base; 1.61 x 0.40 m, 0.18 m deep (base at 1.12 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown silty sand, occasional gravel inclusions. Cut grave 379 (backfill only).

Human Bone : *c.* 95%; infant *c.* 4–5 yr, ??male

Coffin Furniture:

4 iron coffin grips (head end, one at each side of head, one by left arm), type C, length 100–20 mm (ONs 4675–8)

7 iron coffin nails (ONs 4680–1, 5807)

Grave 256 (Sk 257)

SW–NE, sub-rectangular cut wider at midsection; vertical sides, flat base; 1.78 x 0.62 m, 0.75 m deep (base at 0.78 m aOD). Disarticulated, redeposited human bone. Single fill: dark greyish-brown silty sand. Cut 101.

Human Bone : 2 bones; adult *c.* 23–40 yr

Grave 258 (Sk 260)
(Figs 17 & 28.5)
SW–NE, sub-rectangular cut bowing out to NW; steep sides, flat base; 1.36 x 0.52 m, 0.14 m deep (base at 1.29 m aOD). Coffined, extended, supine, right arm by side. Single fill: dark brownish-grey silty sand, occasional gravel inclusions, moderate roots activity. Cut grave 291 (backfill only). Cut by grave 196 (undisturbed).
Human Bone: *c.* 90%; infant *c.* 3–4 yr, ??female
Coffin Furniture:
2 iron coffin grips (head & foot), type E, length 60 mm, with grip plates (120 x 25 mm) (ONs 4702–3; Fig. 28E)
46 iron coffin nails (ONs 4708–24, 5649, 5808, 5069–70)
3 copper alloy pins, at skull (ON 4701)
In backfill
Silver coin, half groat of Edward III, minted 1351–2 (ON 4698)

Grave 261 (Sk 263)
(Figs 17, 24 & 39b)
SW–NE, sub-rectangular cut wider W portion; vertical sides, flat base; 2.06 x 0.58 m, 0.45 m deep (base at 0.91 m aOD). Coffined, extended supine, hands by sides. Single fill: dark yellowish-grey silty sand, occasional gravel inclusions. Cut 101.
Human Bone : *c.* 97%; adult *c.* 45–50 yr, male
Coffin Furniture:
5 iron coffin grips (2 each side & 1 at head), type F, length 140 mm (ONs 4905–8, 4923)
11 iron coffin nails (ON 5632)
364 copper alloy upholstery pins (21 large, 343 small), spelling biographical details (ONs 4892–4904, 5672, 5679, 5809)
Iron sheet fragments, with ribs (ON 5633)
Thread (ON 5846)

Grave 269 (Sk 271)
SW–NE, sub-rectangular cut; vertical sides, flat base; 1.35 x 0.35 m, 0.10 m deep (base at 1.35 m aOD). Coffined, extended supine. Single fill: dark greyish-brown mottled, yellowish-brown sandy silt, sparse sub-angular/sub-rounded flint gravel inclusions. Cut grave 315 (backfill only).
Human Bone : *c.* 45%; infant *c.* 3.5–4.5 yr
Coffin Furniture:
Iron coffin grip (head end), type C (ON 4725)
Iron coffin grip (beside head), type C (ON 4739)
46 iron coffin nails (ONs 4726–31, 4736–7, 4740–4, 4746–67, 5812, 5934)
16 copper alloy tacks (ONs 4738, 5811)
3 iron tacks (ON 4745)
Iron ?fitting, with grip 4725 (ON 5935)
Thread (ON 5745)

Grave 272 (Sk 274)
(Fig. 17)
SW–NE, sub-rectangular cut; vertical sides, flat base; 1.28 x 0.46 m, 0.16 m deep (base at 1.16 m aOD). Coffined, extended supine, hands lateral of respective proximal femora. Single fill: dark greyish-brown silty sand, occasional sub-angular/rounded flint gravel inclusions. Cut grave 312 (backfill only). Skull removed by grave 278 (see 279A & C). Cut by grave 237 (undisturbed).
Human Bone: *c.* 55%; juvenile *c.* 6–7 yr, ??female
Coffin Furniture:
20 iron coffin nails (ONs 4867, 5813)

Grave 275 (Sk 277)
(Fig. 17)
SW–NE, sub-rectangular wider at W end; steep sides, flat base; 1.2 x 0.45 m, 0.20 m deep (base at 1.19 m aOD). Coffined, extended supine. Single fill: dark greyish-brown sandy silt, occasional sub-rounded/sub-angular flint gravel inclusions. Cut 101.
Human Bone: *c.* 60%; infant *c.* 1–2 yr
Coffin Furniture:
Iron coffin grip, position unknown, type C, length 85 mm (ON 4734)
52 iron coffin nails (ONs 4768–86, 5814)

Grave 278 (Sk 280)
(Figs 17, 28.3 & 36a)
SW–NE, sub-rectangular cut wider W end; vertical sides, flat base; 1.80 x 0.65 m, 0.16 m deep (base at 1.19 m aOD). Coffined, extended supine, right hand lateral to proximal femur, left hand over proximal femur, right knee bent under left; body shifted to left in coffin. Single fill; dark greyish-brown silty sand, occasional sub-rounded/sub-angular flint gravel inclusions. Redeposited human bone. Cut graves 272, 303, 312, 325 (disturbing burial).
Human Bone:
Sk 280: *c.* 98%; adult *c.* 45–55 yr, female
Sk 279a (redeposited): *c.* 30%; adult > 55 yr, female; parts = Sk 327
Sk 279b (redeposited): *c.* 12%; adult > 45 yr, ??male
Sk 279c (redeposited): *c.* 2%; juvenile/subadult *c.* 7–20 yr; ?= parts Sk 274
Coffin Furniture:
4 iron coffin grips (2 each side), type C, length 125 mm (ONs 4861–2, 4924–5; Fig. 28C)
45 iron coffin nails (ONs 4863–6, 4926–4936, 5815, 5817)
5 copper alloy tacks (ON 5816)

Grave 281 (Sk 282/3)
(Fig. 16)
SSW–NNE, incomplete but probably sub-rectangular cut; steep sides, flat base; 1.2 x 0.6 m, 0.25 m deep (base at 1.18 m aOD). Single fill: dark greyish-brown sandy silt,

occasional sub-angular/sub-rounded flint gravel inclusions. Disarticulated, redeposited human bone. Cut by graves 176, 244, 284. Cut probable earlier grave.

Human Bone: 11 bone fragments

1) adult *c.* 45–60 yr, male; = part of 245c

2) adult *c.* 45–65 yr, female; ?= part 245 &/or 286a

Coffin Furniture:

With Sk 283

86 coffin nails (ONs 4816–7, 4819–39, 4841–3, 5637, 5644, 5658, 5819)

42 small copper alloy upholstery pins, spelling biographical details (ONs 4812–15, 5818)

In backfill

3 iron coffin grips, type D, lengths 120–45 mm, with grip plates (200–30 x 56–74 mm) (ONs 4840, 4844–5)

Grave 284 (Sk 286)

(Fig. 16)

SSW–NNE, incomplete but probably sub-rectangular cut; flat base; 0.9 x 0.5 m, 0.25 m deep (base at 1.18 m aOD). Coffined, extended supine. Redeposited human remains (286B & 285) from earlier, now unidentifiable, grave/graves). Single fill: dark greyish-brown sandy silt, occasional ironstone & sub-rounded/sub-angular flint gravel inclusions. Cut by graves 179, 244 & 281.

Human Bone:

Sk 286a: *c.* 20%; adult >25 yr

Sk 286b (redeposited): 8 bone fragments; adult >45 yr, male; most = 245c

285 (redeposited): 3 bone fragments; adult >45 yr

Coffin Furniture:

Iron coffin grip, type D, length 130 mm, with grip plate (200 x 65 mm) (ON 4909)

52 iron coffin nails (ONs 4870–84, 4886–91, 5641, 5659, 5820)

Large iron upholstery pin (ON 4885)

In backfill (285)

2 iron nails (ONs 5721, 5728)

Grave 287 (Sk 321)

(Figs 16 & 46)

SW–NE, sub-rectangular cut; vertical sides, flat base; 2.35 x 0.7 m, 0.69 m deep (base at 0.86 m aOD). Coffined, extended supine, hands lateral/overlying respective proximal femora. Single fill: dark greyish-brown, yellowish-brown, yellow silts & sands, occasional sub-rounded/sub-angular flint gravel & ironstone inclusions. Cut grave 322 (disturbing burial). Cut by grave 244 (undisturbed).

Human Bone:

Sk 321: *c.* 98%; adult *c.* 50–65 yr, male

288a (redeposited): *c.* 60%; subadult *c.* 14–18 yr, ??male; = 324

288b (redeposited): 11 bone fragments

1) adult *c.* 20–60 yr, ?male

?2) adult *c.* 20–60 yr, female

288c (redeposited): *c.* 25%; infant *c.* 6–9 months

Coffin Furniture:

4 iron coffin grips (left shoulder, left & right leg, foot), type C, length 140–50 mm (ONs 5069–72)

89 iron coffin nails (ONs 5068, 5079, 5089, 5137–40, 5143–76, 5655, 5638, 5640, 5729, 5821, 5837)

6 iron plate letters, from coffin lid, spelling biographical details (ONs 5073–8, 5643)

15 copper alloy tacks (ONs 5643, 5894, 5898, 5981–4)

6 copper alloy pins (ONs 5092, 5216, 5895–7)

In backfill (288)

At least 4 iron coffin grips, type C (ONs 5629, 5985)

17 iron nails (ON 5640)

Iron U-staple (ON 5647)

Bone comb fragment, double-sided (ON 4922)

Grave 289 (no human remains)

SW–NE, heavily truncated, incomplete cut; steep sides, flat base; 0.1 x 0.45 m, 0.2 m deep (base at 0.86 m aOD). Single fill: dark greyish-brown sandy silt, sparse flint inclusions. Cut by 244 (disturbed).

Coffin Furniture:

Iron coffin grip, type D, length 150 mm, with grip plate (220 x 65 mm) (ON 5631)

2 iron nails (ONs 4787–8)

Grave 291 (Sk 293)

(Figs 39c & 41f)

SW–NE, sub-rectangular cut wider toward SW end; vertical sides, flat base; 1.82 x 0.74 m, 0.18 m (base at 1.24 m aOD). Coffined, extended supine, right hand on right proximal femur, left hand on right pelvis. Single fill: dark brownish-grey silty sand, moderate coarse sub-angular flint gravel inclusions. Cut 101. Cut by grave 258 (undisturbed).

Human Bone: *c.* 96%; adult *c.* 35–45 yr, female

Coffin Furniture

30 iron coffin nails (ONs 4846–60, 5823)

3 copper alloy pins (ON 5822)

Grave 294 (Sk 296)

(Fig. 17 & 24)

SW–NE, sub-rectangular cut wider at midsection; vertical sides, flat base; 0.94 x 0.33 m, 0.09 m deep (base at 1.34 m aOD). Coffined, supine. Single fill: dark brownish-grey silty sand, moderate sub-angular gravel inclusions. Cut grave 309 (backfill only).

Human Bone:

Sk 296: *c.* 1%; infant *c.* 1–2 yr

Sk 296b: 3 bone fragments; adult *c.* 30–55 yr; ? = Sk 308

Coffin Furniture:

Iron coffin grip, head end, type D, with grip plate (ON 4910)

26 iron coffin nails (ONs 4911–17, 5824)
36 small copper alloy upholstery pins, from coffin lid, spelling biographical details (ONs 4918–20)
3 copper alloy pins, at head (ONs 4921, 5676)

Grave 297 (Sk 299)
SW–NE, sub-rectangular cut, steep sided, flat base; 1.0 x 0.38 m, 0.20 m deep (base at 1.26 m aOD). Coffined, extended supine, left hand next to pelvis, right hand on right pelvis. Single fill: greyish-brown sandy silt, rare flint gravel & sandstone inclusions. Cut 101.
Human Bone: c. 95%, infant *c.* 9–18 months
Coffin Furniture:
Iron coffin grip, at foot, type C (ON 4937)
54 iron coffin nails (ONs 4539, 4543–5, 4567, 4938–57, 5825)

Grave 300 (Sk 302)
SW–NE, sub-rectangular cut, slightly wider mid-section; vertical sides, flat base; 1.65 x 0.4 m, 0.14 m deep (base at 1.12 m OD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, sparse sub-rounded/angular flint gravel inclusions. Cut grave 335 & pit 338 (backfill only).
Human Bone: *c.* 95%; adult *c.* 40–60 yr, ?female
Coffin Furniture:
7 iron coffin grips (3 each side & 1 at head), type C, lengths 120–30 mm (ONs 4960–6)
Iron breastplate fragments, over chest & pelvis (ON 4958)
67 iron coffin nails (ONs 4967–4973, 5668, 5684, 5706, 5827)
Iron square fitting with central perforation (ON 4959)
Unidentified iron object (ON 5707)
5 copper alloy pins (ON 5826)

Grave 303 (no human remains)
WSW–ENE, incomplete cut; vertical sides, flat base; 1.0 x 0.38 m, 0.09 m deep (base at 1.23 m aOD). *In situ* coffin nails. Single fill: dark greyish-brown silty sand, occasional sub-rounded/angular flint gravel inclusions. Cut by graves 278, 312 (disturbed).
Coffin Furniture:
5 iron coffin nails (ONs 4998–5000)
Unidentified iron object (ON 4997)

Grave 306 (Sk 308; 314)
(Fig. 18)
SW–NE, sub-rectangular cut, vertical sides, flat base, 2.0 x 0.63 m, 0.45 m deep (base at 1.04 m aOD). Two in coffins, both extended supine. Both had hands by sides, 308: right pelvis disturbed and repositioned over left thorax. Single dark greyish-brown & mid-yellowish-brown silty sand fill, moderate coarse gravel & occasional large stone inclusions. Cut grave 309 (backfill only). Movement of pelvic bone suggests Sk 308 disturbed by insertion of Sk 314.
Human Bone:
Sk 308: *c.* 90%; adult *c.* 45–55 yr, female
Sk 314: *c.* 98%; infant *c.* 1–1.5 yr
307 (redeposited): 2 bone fragments; adult >30 yr; = Sk 308
308/311 (redeposited): 3 bone fragments; neonate 0–6 months; some found in grave 309.
Coffin Furniture:
with Sk 308
2 iron coffin grips (head & foot), type C (ONs 5044–5)
42 iron coffin nails (ON 5094–5106, 5978, 5829)
with Sk 314
6 iron coffin grips (1 each end, 2 each side), type C, lengths 65–70 mm (ONs 5004–9)
27 iron coffin nails (ON 5010–1; 5037–43; 5689, 5705, 5833, 5974–7)
5 copper alloy pins, 3 at skull (ONs 5001–3, 5832)
In backfill
Iron coffin grip, type C (ON 5737)
3 iron nails (ONs 5141–2)

Grave 309 (Sk 311)
(Figs 18, 24, 35e & 41b)
SW–NE, sub-rectangular cut; steep sides, flat base; 2.07 x 0.65 m, 0.16 m deep (base at 1.30 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown silty sand, moderate sub-angular gravel inclusions. Disarticulated bone. Cut by 306, 296 (disturbed). Cut 340 (disturbing burial)
Human Bone:
Sk 311: *c.* 97%; subadult *c.* 18 yr, female
308/311 (redeposited): 3 bone fragments; neonate 0–6 months; some found in grave 306.
Coffin Furniture:
Iron coffin grip, at foot, type D, length 130 mm, with grip plate (190 x 60 mm) (ON 5214)
55 iron coffin nails (ONs 5193–6, 5215, 5227–33, 5240–3, 5831, 5987)
196 small copper alloy studs, from coffin lid, spelling biographical details (ONs 5197–5207, 5226, 5830)
5 unidentified fragments, with grip 5214 (ON 5933)
In backfill
Iron coffin grip, type D, length 90 mm, with grip plate (120 x 30 mm) (ON 5698)
Copper alloy strap end & buckle (ON 5107)
Two iron screws (ON 5696)
Small iron hook (ON 5986)

Grave 312 (Sk 305)
SW–NE, sub-rectangular cut wider section in W portion, vertical sides, flat base; 1.87 m x 0.54 m, 0.11 m deep (base at 1.11 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown silty sand, occasional sub-angular/rounded flint gravel inclusions. Cut grave 303 (disturbing burial). Skull removed by grave 278. Cut by grave 272, 237 (undisturbed).

Human Bone: *c.* 60%; adult *c.* 35–50 yr, ??female
Coffin Furniture:
6 iron coffin nails (ONs 4992–6, 5828)

Grave 315 (Sk 317)
(Figs 35f & 42b)
SW–NE, rectangular cut; vertical sides, flat base; 2.06 x 0.71 m, 0.26 m deep (base at 1.1 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown, mottled yellowish-brown sandy silt. Cut by grave 269. Cut 101.
Human Bone: *c.* 80%; adult *c.* 40–55 yr, female
Coffin Furniture:
Iron coffin grip, head end, type B, length 155 mm (ON 5034)
48 iron coffin nails (ONs 5012–30, 5032–3, 5035–6, 5738, 5835, 6019)
17 copper alloy tacks (ONs 4978–86, 5031, 5834)
Unidentified iron object (ON 5683)
Copper alloy pin (ON 5891)
Thread (ON 5747)

Grave 318 (Sk 320)
SW–NE, sub-rectangular cut; steep sides, flat base; 0.75 x 0.3 m, 0.07 m deep (base at 1.29 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, rare sandstone flecks & sub-rounded/sub-angular flint gravel inclusions. Cut 101.
Human Bone: *c.* 90%; foetus 36–8 weeks
Coffin Furniture:
31 iron coffin nails (ONs 4976–7, 5059, 5060–7, 5836)
Copper alloy strip ?fitting (ON 4975)
8 copper alloy pins (ONs 5056–8, 5892–3)

Grave 322 (Sk 324)
(Fig. 17)
SW–NE, sub-rectangular cut, vertical sides, flat base; 2.05 x 0.5 m, 0.45 m deep (base at 1.0 m aOD). Coffined, extended supine, arm by side. Single fill: mixed dark greyish-brown, with yellowish red and pale grey mottled sandy silt & sand. Rare ironstone & limestone, occasional flint gravel inclusions. Cut by grave 287, cut 101.
Human Bone: *c.* 5%; subadult *c.* 13–15 yr
Coffin Furniture:
15 iron coffin nails (ONs 5080–88, 5704)

Grave 325 (Sk 327)
SW–NE, sub-rectangular cut; vertical sides, flat base; 1.87 x 0.40 m, 0.13 m deep (base at 1.06 m aOD). Coffined, extended supine, right hand by side. Single fill: dark greyish-brown silty sand, occasional sub-angular/rounded flint gravel inclusions. Cut by grave 278 (disturbed). Cut grave 328 (disturbed burial) & grave 423 (backfill only).
Human Bone: *c.* 50%; adult > 50 yr female
Coffin Furniture:
Iron coffin grip, by right leg, type F (ON 5118)
33 iron coffin nails (ONs 5108–5117, 5119–36, 5682, 5838)

Grave 328 (Sk 330)
SW–NE, sub-rectangular cut, rounded ends; vertical sides, flat base; 1.91 x 0.43 m, 0.11 m deep (base at 1.02 m aOD). Coffined, extended supine, right hand by side. Single fill: dark greyish-brown silty sand, occasional sub-angular/rounded flint gravel inclusions. Cut by grave 325 (disturbed); Cut by graves 250, 237 (undisturbed); cut grave 423 (backfill only).
Human Bone: *c.* 55%; adult > 45 yr, ??male
Coffin Furniture:
17 iron coffin nails (ONs 5177–87, 5690, 5693, 5839)
Copper alloy pin (ON 5899)

Grave 331 (Sk 333)
(Figs 18 & 22)
SW–NE, sub-rectangular cut; steep sided, flat base; 2.30 x 0.88 m, 0.22 m deep (base at 1.01 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown silty sand, occasional sub-angular/rounded flint gravel inclusions. Redeposited, disarticulated human bone in charnel pit 365 cut into base. Cut by graves 208 & 225 (undisturbed). Cut earlier graves now lost.
Human Bone: *c.* 85%; adult *c.* 50–60 yr, female
Coffin Furniture:
6 iron coffin grips (1 at head, 3 right side, 2 left side), type A, length 140 mm (ONs 5292–7)
153 iron upholstery pins (120 large, 33 small) used decoratively around edge of coffin lid (ONs 5283–5, 5287–91, 5840, 6009)
10 small iron upholstery pins, from coffin lid, forming triangle at foot (ON 5298)
4 small iron upholstery pins, with grip 5297 (ON 6011)
119 iron coffin nails (ONs 5703, 5841, 5900, 6000–8, 6010)
Copper alloy tack (ON 6012)

Grave 335 (Sk 337)
(Fig. 18)
SW–NE, sub-rectangular cut; steep sides, flat base; 1.95 x 0.56 m, 0.15 m deep (base at 0.98 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, sparse angular/sub-rounded flint gravel inclusions. Charnel pit 338 exterior to foot end of cut: right innominate from 337 (compare to grave 306). Cut by 300. Cut 101.
Human Bone: *c.* 98%; adult *c.* 30–35 yr, male
Coffin Furniture:
3 iron coffin grips (one at head, one each side of head), type C, length 140–5 mm (ONs 5189–91)

Unidentified iron objects (ON 5192, 5902)
Iron nail (ON 5842)
3 copper alloy pins (ONs 5901, 5903)
In backfill
10 iron nails (ON 5739)

Grave 340 (Sk 342 inc. redep. 310)
SW–NE, incomplete cut, steep sides, flat base; 1.15 x 0.25 m, 0.14 m deep (base at 1.32 m aOD). Coffined, ?extended supine. Single fill: dark greyish-brown silty sand, occasional sub-angular gravel inclusions, heavy root disturbance. Cut by grave 309.
Human Bone: *c.* 20%; infant *c.* 2–3 yr
Coffin Furniture:
22 iron coffin nails (ONs 5208–13, 5234–39, 5843)
Iron coffin plate fragments, foot end (ON 5244)

Grave 346 (Sk 348)
SW–NE, sub-rectangular wider SW of mid-section; vertical sides, flat base; 1.85 x 0.48 m, 0.39 m deep (base at 0.81 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, sparse angular/sub-angular gravel inclusions. Cut 101.
Human Bone: *c.* 65%; subadult *c.* 14–16 yr
Coffin Furniture:
5 iron coffin grips (head & foot, 2 left side, 1 right side), type C, length 130 mm (ONs 5257–60, 5262)
44 iron coffin nails (ONs 5264–82, 5740, 5844)
Unidentified item of coffin furniture (ONs 5261) possible grip

Grave 349 (Sk 351)
(Fig. 42f)
SW–NE, sub-rectangular, N edge curving out; steep sides, flat base; 1.95 x 0.55 m, 0.15 m deep (base at 1.08 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish brown sandy silt, rare sandstone flecks, rare sub-angular/sub-rounded flint gravel inclusions. Cut 101. Cut by grave 382 & pit 355 (undisturbed).
Human Bone: *c.* 95%; adult > 50 yr, female
Coffin Furniture:
Iron coffin plate fragments, head end (ON 5246)
13 iron coffin nails (ONs 5247–56, 5687, 5845)
3 copper alloy pins (ONs 5678, 5904–5)

Grave 352 (Sk 354)
(Figs 18, 21 & 28.2)
SW–NE, sub-rectangular cut wider at midsection, vertical sides, flat base; 1.85 x 0.68 m, 0.17 m deep (base at 1.02 m aOD). Coffined, extended supine, hands over respective innominates (under metal plate). Single fill: dark greyish-brown & reddish yellow sandy silt & sand. Cut 101.
Human Bone: *c.* 98%; adult *c.* 55–65 yr, female
Coffin Furniture:
Iron coffin grip, by left pelvis, type B, length 160 mm (ON 5299)
7 iron coffin grips, position unknown, six type B, lengths 160–70 mm (ONs 5357–60, 5362–3; Fig. 28.2), one type C, length 130 mm (ON 5361)
Iron coffin breast plate, over lower thorax & pelvis, very fragmentary (ON 5301)
Iron coffin plate, on thorax, very fragmentary (ON 5300)
122 iron coffin nails (ONs 5302–56, 5364–9, 5381, 5741, 5847)
Unidentified iron object (ON 5906)
3 copper alloy pins (ONs 5846, 5907)

Grave 358 (Sk 360)
(Fig. 19)
WSW–ENE, sub-rectangular cut; steep sides, flat base (coffin imprint); 2.14 x 0.67 m, 0.32 m deep (base at 0.95 m aOD). Coffined, extended supine, hands lateral of respective proximal femora. Single fill: dark greyish brown silty sand, occasional sub-angular gravel inclusions, moderate root activity. Cut 101. Skull removed by grave 146 (in charnel pit 371).
Human Bone: *c.* 80%; adult *c.* 45–60 yr, female
Coffin Furniture:
Iron coffin grip, at foot, type C, length 140 mm (ON 5376)
21 iron coffin nails (ONs 5370–75, 5377–80, 5382–3, 5395, 5691)
10 copper alloy tacks (ONs 5848, 5908)

Grave 362 (Sk 364)
SW–NE, sub-rectangular cut narrower at E end; vertical sides, flat base; 2.01 x 0.59 m, 0.48 m deep (base at 0.83m aOD). Coffined, extended supine, hands by sides. Single dark brownish-grey silty sand fill, common gravel inclusions. Cut 101.
Human Bone: *c.* 97%; adult *c.* 35–50 yr, ?male
Coffin Furniture:
Copper alloy pin, by right foot (ON 5909)
8 coffin iron nails (missing in post-excavation)

Grave 368 (Sk 370)
(Figs 19, 36e, 37, 42d & e)
WSW–ENE, sub-rectangular cut; vertical sides, flat base; 1.72 x 0.52 m, 0.36 m deep (base at 0.83 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, angular/sub-angular gravel inclusions. Cut 101.
Human Bone: *c.* 96%; adult *c.* 35–55 yr, female
Coffin Furniture:
5 iron coffin grips (head & foot, 2 left side, 1 right side), type F, length 120–30 mm (ONs 5385–9)
7 iron coffin nails (ONs 5390–3, 5694, 5708, 5850)
Iron fitting, small square plate with perforation (ON 5699)
4 copper alloy tacks (ONs 5910–2)

Grave 373 (Sk 375)
(Figs 19 & 25)
SW–NE, sub-rectangular wider near midsection, vertical sides, flat base; 2.05 x 0.62 m, 0.13 m deep (base at 1.18 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown silty sand, occasional sub-angular gravel inclusions. Cut 101.
Human Bone: *c.* 55%; adult >50 yr, female
Coffin Furniture:
Iron coffin grip, at foot, type C (ON 5433)
11 iron plates, from coffin lid, spelling biographical details (ONs 5424–32, 5436–7)
49 iron coffin nails (ONs 5407–23, 5438, 5853, 5688)
6 iron tacks (ON 5952)
Copper alloy tack (ON 5913)
6 copper alloy pins, 1 at skull, 1 at pelvis (ONs 5434–5, 5852, 5914)

Grave 376 (Sk 378 inc. redep. 377)
(Fig. 42c)
SW–NE, sub-rectangular wider in SW portion; vertical sides, flat base; 2.02 x 0.61 m, 0.13 m deep (base at 1.08 m aOD). Coffined, extended supine, hands crossing in pelvis. Single fill: dark greyish-brown sandy silt, rare ironstone, limestone; occasional sub-rounded/sub-angular flint gravel inclusions. Cut 101. Cut by grave 379 (disturbed).
Human Bone: *c.* 95%; adult *c.* 50–65 yr, female
Coffin Furniture:
Iron coffin grip, at head, type D, length 130 mm, with grip plate (180 x 40 mm) (ON 5440)
43 iron coffin nails (ONs 5439, 5441–67, 5697, 5702, 5954)
Copper alloy pin (ON 5854)

Grave 379 (Sk 381)
(Figs 19, 25, 41c & 45)
SW–NE, sub-rectangular cut wider at SW extent, vertical sides, flat base; 1.05 x 0.30 m, 0.05 m deep (base at 1.06 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, rare ironstone, occasional sub-rounded/sub-angular flint gravel inclusions. Cut by grave 253 (undisturbed); cut grave 376 (disturbed burial).
Human Bone: *c.* 85%; infant *c.* 3.5–4.5 yr, ??female
Coffin Furniture:
28 iron coffin nails (ONs 5468–9, 5470–80, 5855)
Tinned iron breast plate with black painted lettering, over chest (ON 5406)
Copper alloy wire, possible from small eyelet (dress) fitting (ON 5384)
3 copper alloy pins (ON 5915)
Unidentified copper alloy object (ON 5916)
In backfill
At least 3 iron coffin grips, type C (ON 5701)
Iron nail (ON 5953)

Grave 382 (Sk 384)
SW–NE, sub-rectangular cut central portion widest; NE narrowest, steep sides, flat base; 2.06 x 0.56 m, 0.12 m deep (base at 1.07 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, rare sandstone flecks, rare sub-angular/sub-rounded flint gravel inclusions. Cut by grave 182 (undisturbed); cut graves 349 & 388 (backfill only).
Human Bone: *c.* 98%; adult *c.* 45–55 yr, male
Coffin Furniture:
Iron coffin grip, at head, type D, length 130 mm, with grip plate (200 x 60 mm) (ON 5394)
12 iron coffin nails (ONs 5389–8, 5400–3, 5405, 5695, 5857)
2 copper alloy pins (ONs 5856, 5917)

Grave 388 (Sk 390)
SW–NE, sub-rectangular cut, round NE extent; steep sides, flat base, 1.86 x 0.60 m, 0.10 m deep (base at 1.08 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown sandy silt, rare flecks sandstone, rare sub-angular/sub-rounded flint gravel inclusions. Cut 101; cut by grave 382 (undisturbed).
Human Bone: *c.* 75%; adult *c.* 40–50 yr, female
Coffin Furniture:
28 iron coffin nails (ONs 5511–29, 5858)

Grave 391 (Sk 393; 400)
(Figs 19 & 36f)
SW–NE, sub-rectangular cut, wider central portion; vertical sides, flat base; 2.19 x 0.69 m, 0.20 m deep (base at 1.03 m aOD). Coffined (two individuals in same coffin), both extended supine, 400 overlay right shoulder & arm of 393. Hands by sides. Single fill: dark greyish-brown silty sand, occasional rounded/sub-angular flint gravel inclusions. Cut 101.
Human Bone:
Sk 393: *c.* 99%; adult *c.* 35–45 yr, female
Sk 400: *c.* 99%; neonate 0–3 months
Coffin Furniture:
42 iron coffin nails (ONs 5860, 5864)
4 copper alloy pins (ONs 5859, 5918, 5919, 5925)
Copper alloy tack (ON 5971)

Grave 394 (Sk 396)
(Fig. 35c)
SW–NE, sub-rectangular cut, wider central portion; vertical sides, flat base, 2.06 x 0.60 m, 0.23 m deep (base at 0.96 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown silty sand, occasional sub-angular/rounded flint gravel inclusions. Cut 101.
Human Bone: *c.* 98%; adult > 55 yr, female
Coffin Furniture:
2 iron coffin grips, head & foot, type D, lengths 165 & 140 mm respectively, with grip plates (205 x 40 mm & 175 x 30 mm respectively) (ONs 5600, 5601)

8 iron coffin nails (ON 5862)
2 small copper alloy upholstery pins, near pelvis (ON 5861)

Grave 397 (Sk 399)
(Fig. 20)
SW–NE, rectangular cut; vertical sides, flat base, 1.95 x 0.48 m, 0.42 m deep (base at 0.90 m aOD). Coffined, extended supine, hands by sides. Single dark greyish-brown sandy silt fill, common sub-angular/angular flint gravel inclusions. Cut grave 411 (disturbing burial).
Human Bone:
Sk 399: *c.* 99%; adult *c.* 18–20 yr, female
Sk 398 (redeposited): 5 bone fragments; adult >18 yr; = 413
Coffin Furniture:
5 iron coffin grips (head end, & 2 each side), type C, length 120–40 mm (ONs 5481–5)
45 iron coffin nails (ONs 5486–5509, 5723, 5863)
3 copper alloy pins (ONs 5920, 5922)
In backfill:
Small blue glass bead (ON 5921)

Grave 401 (Sk 403)
(Figs 19 & 30)
SW–NE, sub-rectangular cut, rounded ends; vertical sides, flat base, 1.28 x 0.46 m, 0.38 m deep (base at 1.22 m aOD). Extended supine, hands on respective innominates. Single fill: dark brownish-grey silty clay, flint gravel inclusions. Cut 414 (backfill only).
Human Bone:
Sk 403: *c.* 98%; infant *c.* 4–5 yr
In backfill:
Copper alloy wire ring, diameter 11 mm (ON 5865)

Grave 404 (Sk 406)
SW–NE, rectangular cut; vertical sides, flat base, 2.0 x 0.50 m, 0.36 m deep (base at 1.02 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown/yellowish-brown silty sand, rare limestone, occasional sub-angular/sub-rounded flint gravel inclusions. Cut grave 420 (disturbing burial).
Human Bone:
Sk 406: *c.* 98%; adult *c.* 30–40 yr, ??female
405a (redeposited): 4 bone fragments; neonate
405b (redeposited): *c.* 10%; adult >30 yr, female; = Sk 422
Coffin Furniture:
65 iron coffin nails (ONs 5559–97, 5716–17, 5725, 5867)
2 copper alloy pins (ONs 5727, 5923)
Copper alloy tack (ON 5924)
In backfill
Iron coffin grip, type D, length 130 mm, with grip plate (ON 5711)
4 iron coffin grips (ONs 5958, 5960, 5962–3)
28 iron nails (ONs 5959, 5961, 5966)
29 iron studs (ON 5964)
10 miscellaneous iron fragments, probably from grips and/or nails (ON 5965)
8 copper alloy pins (ON 5677)

Grave 407 (Sk 409)
(Figs 19 & 36b)
SW–NE, incomplete cut, rounded SE extent; vertical sides, flat base, 1.32 x 0.39 m, 0.04 m deep (base at 1.14 m aOD). Coffined, extended supine, right hand by side. Single fill: dark greyish-brown silty sand, occasional sub-angular/sub-rounded flint gravel inclusions. Cut 101. Left side, lower right leg removed by grave 417; skull removed ?in machining
Human Bone:
Sk 407: *c.* 40%; adult *c.* 35–50 yr, female
408 (redeposited): 11 bone fragments; adult *c.* 20–35 yr, ??female
Coffin Furniture:
2 iron nails (ONs 5722, 5868)

Grave 411 (Sk 410/3)
SW–NE, sub-rectangular cut, wider mid-section; vertical sides, flat base, 1.38 x 0.57 m, 0.26 m deep (base at 1.05 m aOD). Coffined, extended supine, left hand on left innominate, right hand by side. Single dark greyish-brown sandy silt fill, common angular/sub-angular gravel inclusions. Cut 101. Cut by grave 397 (disturbed).
Human Bone:
Sk 410/3: *c.* 70%; adult *c.* 45–60 yr, female
412 (redeposited): 5 bone fragments; adult >45 yr, ?female
Coffin Furniture:
7 iron nails (ONs 5709, 5870)
Copper alloy tack (ON 5869)

Grave 414 (Sk 416)
SW–NE, sub-rectangular cut; vertical sides, flat base, 1.93 x 0.59 m, 0.59 m deep (base at 1.17 m aOD). Coffined, extended supine, hands on respective innominate. Single fill; dark brownish-grey silty sand, flint gravel inclusions. Cut by 401 (undisturbed).
Human Bone:
Sk 416: *c.* 98%; adult *c.* 45–60 yr, ??female
415? (redeposited): 9 bone fragments; adult >40 yr, ?female
Coffin Furniture:
3 iron coffin grips (sides), 2 type C, length 130 mm (ONs 5530–1); one type D, length 130 mm, with grip plate (ON 5532)
Iron nail (ON 5720)
Copper alloy tack (ON 5926)

Grave 417 (Sk 419)
(Fig. 19)
SW–NE, sub-rectangular cut wider to W; vertical sides, flat base, 1.94 x 0.48 m, 0.24 m deep (base at 0.94 m aOD). Coffined, extended supine, hands by sides. Single fill: dark

greyish-brown silty sand, occasional sub-angular/rounded flint gravel inclusions. Cut grave 407 (disturbing burial).
Human Bone:
Sk 419: *c.* 98%; adult *c.* 40–50 yr, ?female
418 (redeposited): *c.* 35%; adult *c.* 35–45 yr, female
Coffin Furniture:
6 iron coffin grips (1 each end, 2 each side), type C, lengths 125–40 mm (ONs 5533–8)
39 iron coffin nails (ONs 5718–9, 5873–4)
Copper alloy stud, from skull, hair attached (ON 5872)
3 copper alloy pins (ON 5927, 5929, 5930)
2 copper alloy tacks (ON 5928, 5931)

Grave 420 (Sk 422)
WSW–ENE, sub-rectangular cut, wider midsection; vertical sides, flat base, 1.40 x 0.60 m, 0.29 m deep (base at 1.09 m aOD). Coffined, extended supine, hands by sides. Single fill: dark greyish-brown/yellowish-brown silty sand, rare flecks ironstone, limestone; occasional sub-angular/sub-rounded flint gravel inclusions. Cut 101. Cut by grave 404.
Human Bone: *c.* 50%; adult *c.* 35–45 yr, female
Coffin Furniture:
Iron coffin grip, position unknown (from grave backfill?), type D, length 140 mm, with grip plate (200 x 65mm) (ON 5710)
39 iron coffin nails (ONs 5539–5558, 5875, 5936)

Grave 423 (Sk 425)
(Fig 19 & 35b)
SW–NE, sub-rectangular cut widest SW of midsection; narrowest to NE, steep sides, flat base, 1.80 x 0.62 m, 0.18 m deep (base at 1.08 m aOD). Coffined, extended supine, wrists crossed over pelvis. Single fill: dark greyish-brown sandy silt, rare flecks sandstone, rare sub-angular/rounded flint gravel inclusions. Cut 101. Cut by graves 325, 328 & 250 (undisturbed).
Human Bone: *c.* 94%; adult *c.* 35–55 yr, male
Coffin Furniture:
14 iron coffin nails, mostly at head end (ONs 5603–8, 5876)
Copper alloy pin (ON 5609)

Grave 426 (Sk 428)
SW–NE, sub-rectangular cut, wider W end; vertical sides, flat base, 1.83 x 0.65 m, 0.54 m deep (base at 0.94 m aOD). Coffined, extended supine, left hand centre pelvis, right hand by side. Single fill: mid-greyish-brown sandy silt, sub-angular flint gravel inclusions. Cut 101.
Human Bone: *c.* 95%; adult >50 yr, ?male
Coffin Furniture:
2 iron coffin grips (head & foot), type D, length 130 mm, with grip plates (ONs 5598, 5599)

Grave 429 (Sk 431)
SW–NE, sub-rectangular cut, vertical sides, flat base, 1.05 x 0.53 m, 0.35 m deep (base at 1.02 m aOD). Coffined, extended supine, hands by sides. Single mid-greyish-brown silty sand fill, sub-angular flint gravel inclusions. Cut 101.
Human Bone: *c.* 50%; adult *c.* 40–55 yr, female
Coffin Furniture:
Iron nail (ON 5726)
Iron nail (ON 5685)

Charnel pits

Charnel pit 143 (Sk 145) see also 159 & 162
(Fig. 15)
NNW–SSE, rectangular pit; steep concave sides, irregular base; 0.43 x 0.22 m, 013 m deep (base at 0.96 m aOD). Redeposited, disarticulated human remains. Single fill: dark reddish-brown silty sand, occasional rounded flint gravel inclusions. Cut base grave 126, under Sk 128.
Human Bone: (includes Sk 161 & Sk 164): *c.* 45%; infant *c.* 4–5 yr
Coffin Furniture:
2 iron coffin grips, type C, one complete, length 80 mm (ONs 4113, 4114)

Charnel pit 159 (Sk161) see also 143 & 162
(Figs 15 & 39)
SW–NE, sub-square pit; steep concave sides, irregular base; 0.47 x 0.30 m, 0.08 m deep (base at 1.02 m aOD). Re-deposited, disarticulated human remains. Single fill: dark reddish-brown silty sand, occasional rounded flint gravel inclusions. Cut base grave 126, under Sk 128.
Human Bone: see charnel pit 143

Charnel pit 162 (Sk 164) see also 143 & 159
(Fig. 15)
NNW–SSE, rectangular pit; steep concave sides, irregular base; 0.46 x 0.29 m, 0.14 m deep (base at 0.98 m aOD). Redeposited, disarticulated human remains. Single fill: dark reddish-brown silty sand, occasional rounded flint gravel inclusions. Cut base grave 126, under Sk 128.
Human Bone: see charnel pit 143
Coffin Furniture:
2 iron coffin grips, type C, lengths 85 mm (ONs 4115, 4116)

Charnel pit 211 (Sk 212)
(Fig. 15)
SW–NE, sub-square pit; moderate concave sides, concave base; 0.28 x 0.24 m, 0.09 m deep (base at 1.1 m aOD). Redeposited, disarticulated human remains. Single fill: dark greyish-brown silty sand, occasional rounded flint gravel inclusions. Cut base of grave 185, under burial 187.
Human Bone: left leg; = Sk 195

Charnel pit 338 (Sk 339)
(Fig. 18)
SW–NE, sub-rectangular pit; moderate-steep sides, irregular base; 0.30 x 0.24 m, 0.20 m deep (base at 1.10 m aOD).

Redeposited, disarticulated human remains. Single mixed fill of dark greyish-brown sandy silt, sparse angular/sub-angular gravel inclusions. Cut grave 101 at foot of grave 335.
Human Bone: 2 skeletal elements = Sk 337
Coffin Furniture:
Iron coffin grip, type C, length 130 mm (ON 5700)

Charnel pit 355 (Sk 356)
SW–NE, sub-rectangular pit; steep concave sides, flat-irregular base; 1.40 x 0.80 m, 0.30 m deep (base at 1.11 m aOD). Redeposited, disarticulated human remains. Single fill: mottled grey-brown & yellowish brown sandy silt, occasional rounded flint gravel inclusions and decayed sandstone. Cut graves 349 and 282 (disturbing burials).
Human Bone: *c.* 8%; adult *c.* 18–45 yr, ?female

Charnel pit 365 (Sk 367)
(Fig. 37)
WSW–ENE, sub-rectangular pit; moderate concave sides, concave base; 0.84 x 0.30 m, 0.09 m deep (base at 0.93 m aOD). Redeposited, disarticulated human remains (MNI 2). Single fill: dark greyish-brown silty sand, occasional sub-angular/rounded flint gravel inclusions. Cut base of grave 331, under burial 333. Cut by grave ?208.
Human Bone:
367a: *c.* 50%; adult *c.* 30–40 yr, ?male.
367b: *c.* 18%; infant *c.* 1–1.5 yr
Coffin Furniture:
Iron coffin handle (ON 5263)
Iron coffin grip, type C, length 220 mm (ON 8888)

Charnel pit 371 (Sk 372)
SW–NE, sub-square pit; steep, stepped sides, irregular base; 0.38 x 0.36 m, 0.22 m deep (base at 0.62 m aOD). Redeposited, disarticulated human remains. Single fill: dark grey & reddish-yellow silty sand/sand, moderate rounded flint gravel inclusions. Cut base grave 146, under Sk 148.
Human Bone: *c.* 15%; adult >50 yr, female; = Sk 360

APPENDIX II
SUMMARY OF RESULTS FROM ANALYSIS OF HUMAN REMAINS

KEY: R = redeposited; R* redeposited but not = any *in situ* deposit; s. – skull; a. – axial skeleton; u. – upper limb; l. – lower limb; p.c. – post-cranial; ddd – degenerative disc disease; op – osteophytes; mv – morphological variation (those not in main list only); sbc – solitary bone cyst; ap – articular process; tp – transverse process; bsm – body surface margins; MtC/T – metacarpal/tarsal

Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
101a		R = 381	*c.* 18% s.a.	juvenile *c.* 5–6 yr	*cribra orbitalia* (bi-); hypoplasia; periosteal new bone – anterior maxilla, infratemporal, inferior concha; pitting & new bone – antrum; cranial autopsy
		R ??=205 or 207	2 frags u.	infant *c.* 3–5 yr	periosteal new bone – humerus shaft
101b		R = ??	9 bones/frags a.u.l.	adult > 30 yr female	ddd – 1T; Schmorl's node – 1T; pitting – T ap; op – left rib
101: ONs 4033–36		R = ??	11 frags s.	infant *c.* 1–4 yr	
101: ON 4074		R ?=?274	*c.* 4% s.	juvenile/subadult *c.* 7–14 yr	*cribra orbitalia* (left)
111	110	R = ??	5 frags a.u.	1) infant/juvenile *c.* 2–7 yr 2) adult *c.* 30–40 yr ??female 3) adult >18 yr	osteoarthritis – left rib
122a	124	R = ??	1 tooth	adult *c.* 18–35 yr	caries
122b	124	R *	1 frag. s.	infant *c.* 1.5–2.5 yr	
123	121	*in situ*	*c.* 65%	foetus *c.* 7–8 mth	
124	121	*in situ*	*c.* 99%	adult *c.* 40–50 yr female	caries; abscesses; hypoplasia; calculus; periodontal disease; periosteal new bone – ilia (slight); op – T7 bsm, right acetabulum, right knee, sacro-iliac (bi-), right 10th rib; pitting – left 12th rib; exostoses – left greater trochanter, calcanea; calcified cartilage – rib; mv – 5th distal IP joints fused (foot), pronounced overbite, crowding teeth, retention right deciduous canine & non-eruption of permanent
128	126	*in situ*	*c.* 90%	adult *c.* 45–60 yr female	*ante mortem* tooth loss; periosteal new bone – left mandible, left calcaneum; osteoarthritis – C2–4, L2, L4–5, S1, 4 right carpals, right & left hip, left sacro-iliac, 3 right ribs; ddd – C3–6, L4–5; op – C1, C7, T1–12 bsm, L1 & S1 bsm, right & left shoulders, right & left elbows & wrists, 2 left carpals, right knee; rickets – fibulae; pitting – temporo-mandibular, acromio-clavicular & sterno-clavicular, right sacro-iliac, rib facet; exostoses – iliac crests, patellae, calcanea
131	129	*in situ*	*c.* 98%	adult *c.* 45–55 yr male	*ante mortem* tooth loss; caries; calculus; hypoplasia; osteoarthritis – L5, S1; ddd – T7–11, L3–4; eburnation – right & left glenoid; Schmorl's node – T5–12, L1–2; op – T4 –6 & T12 bsm, L1–2, L4–5, right & left elbows, right hip, knees, sacro-iliac, 5 right & 7 left ribs; pitting – sterno-clavicular, left acromio-clavicular; anterior collapse vertebral bodies – T7–11; osteoid osteoma – right femur; exostoses – right radial tuberosity, prox. femurs, patellae, calcaneum; mv – ossicles @ lambda & lambdoid

Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
133		?R ?? = 330	1 frag. u.	adult *c.* 30–45 yr ??male	
145/161/164	143/159/162	re-buried	*c.* 45%	infant *c.* 4–5 yr	fracture – left tibia
147	146	R: s = 360	*c.* 5% s.	adult *c.* 45–60 yr female	*ante mortem* tooth loss; caries; abscess; hypoplasia
		p.c. = 201	*c.* 45% a.u.l.	adult *c.* 45–60 yr female	fracture – left clavicle; trauma – left distal tibia & fibula; periosteal new bone – left distal tibia & fibula; new bone – L5; osteoarthritis – T11–12, 1 other T, 9–10 costo-vertebral, left temporo-mandibular; ddd – L3–S1; op – 9T bsm, T8 transverse process, L1–2 bsm, L4–5 articular processes, right temporo-mandibular, acetabulae, left knee, 3 right & 2 left ribs, left ankle; pitting – L5, right sterno-clavicular; exostoses – iliac crests, left distal humerus, left proximal tibia
148	146	*in situ*	*c.* 98%	adult *c.* 50–60 yr ??male	*ante mortem* tooth loss; ankylosis – C4–5; vertebral body collapse – C6–7, mid–lower T; osteoarthritis – C1–6, T2, costo-vertebral (1, 9, 11 & 12), L1–S1, left & right knees, shoulders, hips; DISH? – T5–12; ddd – C3–7, T10–12, L2–S1; Schmorl's node – T7–10, T12; op – left prox. humerus, left distal radius, 2 left & 2 right tarsals, left distal IP (foot), 10 right & 6 left ribs; pitting – right acromio-clavicular, both sterno-clavicular, left humerus, left C-MtC joint, 3 right & 1 left rib; exostoses – radial tuberosities, femur shafts, patellae, calcanea; cyst – left capitate; mv – metopic suture, ossicles in lambdoid
151	149	*in situ*	*c.* 97%	adult *c.* 35–45 yr female	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; periodontal disease; osteoarthritis – right hip, 1 left rib, left navicular, right calcaneum; pitting – 2T ap, right calcaneum; exostoses – distal fibulae, patellae, calcanea
154	152	*in situ*	*c.* 18% s.a.u.	juvenile 6–7 yr ??male	caries; abscess; hypoplasia; mv – ossicle @ lambda, lambdoid suture
169	167	*in situ*	*c.* 60%	adult *c.* 35–50 yr male	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; periodontal disease; *cribra orbitalia*; periosteal new bone – 2 left & 2 right ribs, humerus shafts, radius & ulnae shafts (related to lung infection); Schmorl's node – T6–9; ddd – T12, L4–5; op – T1–L1 & L3–S1 bsm, prox. ulnae, left prox. radius, right 2nd CM, right prox. femur; pitting – glenoid fossae, right acetabulum; exostoses – right ilium; mv – ?enamel pearl, ossicle @ lambda
172		R = ?	1 bone l.	infant *c.* 4–4.5 yr	
174	173	R *	*c.* 12% s.a.u.	adult *c.* 35–50 yr male	*ante mortem* tooth loss; caries; calculus; osteoarthritis – left shoulder, 1 left rib; Schmorl's node – 1T; op – 3T tp, left acetabulum; exostoses – left iliac crest; pitting – 3T transverse processes
175	173	*in situ*	*c.* 99%	adult *c.* 30–40 yr male	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; periodontal disease; pitting & new bone – right auricular surface; exostoses – prox. humeri; mv – lambdoid ossicles, non-fusion C7 right tp, non-fusion sternal segments, S6, *os acromialie* (left)
177a	176	R = 181	*c.* 3% s.a.u.	adult *c.* 30–45 yr ??male	calculus; hypoplasia; op – right 11th rib, 2 left ribs; pitting – left rib
177b	176	R*	*c.* 20%	infant *c.* 9–12 mth	

Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
178	176	*in situ*	*c.* 99%	adult *c.* 19–23 yr female	*ante mortem* tooth loss; caries; abscess; calculus; periodontal disease; periosteal new bone – right mandible, 2nd–8th right rib shafts, tibiae & fibulae shafts (?TB); pitting – left acromio-clavicular; mv – crowding teeth, retention both left m2, tooth rotation, incomplete fusion T1 left tp & T2 left spinal process
181	179	*in situ*	*c.* 50% a.u.l.	adult *c.* 35–50 yr male	osteoarthritis – L3–4; op – left navicular; calcified cartilage – rib; exostoses – patellae, calcanea
184	182	*in situ*	*c.* 96%	adult *c.* 45–60 yr male	*ante mortem* tooth loss; caries; osteoarthritis – hips, shoulders; ?osteitis – right distal fibula; ddd – T11, L3–4; Schmorl's node T8–10; op – T8–11, L5, right prox. ulna, right 1st MtC-P, right knee, right talus; pitting – tempo-mandibular (bi-), left acromio-clavicular; cysts – left medial cuneiform; exostoses – patellae, calcanea
187	185	*in situ*	*c.* 80%	adult *c.* 40–50 yr female	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; ?aneurysmal erosions – T2 , T11–12; dorsal ligament ossification – T4–5; periosteal new bone – ventral ilium, sacrum, L3–5; osteoarthritis – right hip; ddd – C5; op – C1–2, C4–7, T3–7, T10–12, L3–S1 (all bsm), left hip, knees; pitting – right sterno-clavicular; exostoses – manubrium, left ischium, left iliac crest ; mv – tooth rotation
188	176	R = 181	*c.* 15% s.	adult *c.* 35–50 yr ?male	*cribra orbitalia*
		R ? = 189	*c.* 12% u.l.	adult >25 yr ??male	osteoid osteoma – right distal tibia; exostoses – left calcaneum
189	176	R*?	11 bones a.u.	adult *c.* 25–40 yr ?male	Schmorl's node – T8/9; op – right rib, left transverse process
191a	190	R = 215	*c.* 17% a.u.l.	adult *c.* 30–50 yr male	pitting – left acetabulum; ?seronegative arthropathy – left auricular surface; trauma – left distal tibia & fibula; exostoses – femora shafts, left calcaneum
191b	190	R = 192	4 frags u.l.	adult >20 yr ?female	
191/124		R = 215 (mostly)	8 frags a.u.l.	adult *c.* 30–45 yr ?male	op – left 1st MtC-P; mv – non-fusion S1 spinal process
192	190	*in situ*	*c.* 45%	adult *c.* 40–50 yr female	caries; abscess; hypoplasia; calculus; *cribra orbitalia*; osteoarthritis – S1; ddd – S1; op – acetabulae; rickets – femora; ankylosis – sacrum (= 191a/215?); mv – occipital bunning
195 (+ pit 211)	193	*in situ*	*c.* 98%	adult *c.* 35–45 yr female	*ante mortem* tooth loss; caries; abscesses; hypoplasia; calculus; *osteochondritis dessicans*; destructive lesion – distal tibiae; osteoarthritis – 1 right & 2 left costo-vertebral, T12, L1; op – 8 right & 3 left costo-vertebral, T7 bsm; pitting – 6th rib , L2; mv – tooth rotation
197	196	R = 205	1 bone l.	infant *c.* 2–5 yr	
198	196	*in situ*	*c.* 65%	adult *c.* 35–55 yr male	caries; calculus; hypoplasia; pd; *cribra orbitalia*; periosteal new bone – left femur neck; osteoarthritis – right hip; ddd – L5; op – C1–2, 1T, shoulders, left acetabulum; pitting – right humerus tuberosity; exostoses – right rib tubercles
201	199	*in situ*	*c.* 55%	adult >50 female	*ante mortem* tooth loss; caries; abscess; hypoplasia; osteoarthritis – 2 left tarsals; fracture – left navicular (fatigue?); ?TB – C3–4; destructive lesion – proximal humerus (tubercles); op – C4 bsm, C1 ant. facet, C3 ap, right acromio-clavicular, right shoulder, right prox. ulna, 4 right carpals, 2 rigth prox. IP (hand), right knee, all left tarsals, left 4th T-Mt, right 1st Mt-P; exostoses – right distal humerus, right prox. ulna & radius, patella, right proximal tibia, calcanea, left navicular, left 5th metatarsal; plastic modification – right tibia lateral condyle (ass. with fractures?); calcified cartilage – thyroid, rib
204	202	*in situ*	*c.* 80%	infant 1.5–2.5yr	bowing (rickets) – femora, tibiae, fibulae; periosteal new bone – femora, tibiae, fibulae

Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
205	196	*in situ*	*c.* 20% l.	infant *c.* 3–5 yr	bowing (?rickets) – femora
207	196	*in situ*	*c.* 5% s.u.	juvenile *c.* 5–6 yr	
210	208	*in situ*	*c.* 99%	adult >50 yr female	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; osteoarthritis – right elbow, 4 right & 2 left carpals, right 4–5th & left 1st & 3–5th, left 1st MP (hand), left 1st prox. IP (hand), right 4/5th distal IP (hand), left 2–5th distal IP (hand), right hip, left 1st costo-vertebral; tumour – right jugular foramen; ankylosis – sternum & manubrium; ddd – C3, T10, L4–5; op – C1, C5–T1 bsm, T3–12 bsm, left elbow, left acetabulum; pitting – T1 & 12 costo-vertebral, acromio-clavicular (bi-); destructive lesion – naviculars; calcified cartilage – rib; exostoses – iliac crests; mv – tooth rotation
210b	208	R *?	3 frags s.	adult >18 yr	
215	213	*in situ*	*c.* 30%	adult >45 yr male	endosteal new bone – sphenoid; vertebral body collapse – T9–11; ?seronegative arthropathy – T10–11; ddd – T7–8, T12; osteoarthritis – L4, right distal humerus; Schmorl's node – T5–6, ?T10–12, L1–2; op – T8–L2 bsm, right glenoid; pitting – T4 ap, T10 rib facet, right acromio-clavicular
218	216	*in situ*	*c.* 74% see 243 for s.	adult 35–45 yr female	fusion – T2–T10 (scoliosis), 6–7th left ribs; osteoarthritis – left T6–7 costo-vertebral; op – left & right lateral knee, 8 left rib facets; pitting – 4 left rib heads
220	219	R = 221	1 frag. l.	adult >18 yr	
221	219	*in situ*	*c.* 85%	adult *c.* 55–70 yr ??male	*ante mortem* tooth loss; periosteal new bone – mandible, both scapulae, right calcaneum; fusion – T4–8 (scoliosis); osteoarthritis – left temporo-mandibular, right elbow, left C-MtC, both hips, 5 left & 3 right costo-vertebral; op – T4–11 & 1L bsm, T9–10 rib facets, T10 tp, costo-vertebral (4, 11 & 12), shoulders , 2nd left prox. IP (hand), tali; pitting – rib facets (1, 4, 6–11); exostoses – patellae
224	222	*in situ*	*c.* 97%	adult *c.* 50–65yr ?female	*ante mortem* tooth loss; osteoarthritis – T1 costo-vertebral, T5, T10, T12, temporo-mandibular (bi-), right 1st C-MtC, left 1st prox. IP (hand), 1st ribs; pyogenic arthritis – 4 left & 1 right IP (hand); ddd – C5–7, L4; op – C1–4 bsm, T1–12 bsm, L1–3 & L5 bsm, S1 bsm, both shoulders , left carpal, 2 right prox. IP (hand), both acetabulae, both knees, left distal IP (foot), 5 right & 2 left ribs; pitting – acromio-clavicular (bi-), left sterno-clavicular , 5 ribs, left humerus greater tubercle; destructive lesion – T9, L2–5; aneurysmal erosions – L2–3; new bone – T1; calcified cartilage – thyroid, rib; exostoses – femoral shafts , patellae, tibial tuberosities; mv – metopic suture
226a	225	R ?=367a	10 bones a.l.	adult *c.* 20–45 yr ??male	
226b	225	R*	*c.* 25% s.u.l.	juvenile *c.* 7–8 yr	
227	225	*in situ*	*c.* 70%	adult *c.* 35–50 yr female	caries; hypoplasia; calculus; endosteal new bone – frontal, parietals, occipital; *?osteochondritis dessicans* – left distal humerus; osteoarthritis – temporo-mandibular (bi-); op – 1T, both knees, right distal tibia ; exostoses – femur shafts, calcanea
230	228	*in situ*	*c.* 90%	adult *c.* 45–60 yr female	*ante mortem* tooth loss; caries; abscess; periosteal new bone – distal femur shafts; osteoarthritis – L4, elbows, 2 right carpals, 3 left costo-vertebral; ddd – C5, T4–5, L5; op – C1, C5–7 bsm, T7 & S1 bsm, left temporo-mandibular, right glenoid, left knee, 1 left rib; pitting – both acetabulae; exostoses – patellae; calcified cartilage – rib ; mv – tooth rotation

Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
236	234	*in situ*	99%	adult *c.* 30–45 yr male	caries; hypoplasia; calculus; *cribra orbitalia* (bi-); ?trauma – right distal femur (soft tissue); destructive lesion – 1st prox. foot phalanges; osteoarthritis – 3 right ribs; Schmorl's node – T5–L5; ddd – L1 & 5, S1; op – T10 rib facet, left knee, left prox. IP (foot), left talus, 2 right ribs & 1 left; vertebral body collapse – T9, L5 (?TB); exostoses – right olecranon; cyst – right scaphoid (sbc); mv – tooth rotation
239	237	*in situ*	*c.* 98%	adult *c.* 35–50 yr male	*ante mortem* tooth loss; caries; abscesses; hypoplasia; calculus; periodontal disease; periosteal new bone – right tibia (lamellar); remodelling – right tibia; destructive lesion – 1st prox. phalanges (foot); osteoarthritis – T7; eburnation – T6 bsm; op – C7 & T11–12 bsm, T8 & T12 rib facets, L1–S1 bsm, right prox. humerus, left elbow, both wrists, left prox. IP (hand), acetabulae, distal femora, 2 left & 2 right ribs; pitting – T3 & T12 rib facets, acromio-clavicular (bi-); calcified cartilage – rib; exostoses – left iliac crest; mv – tooth rotation, max. I2 pegged
242	240	*in situ*	*c.* 98%	adult *c.* 30–40 yr female	*ante mortem* tooth loss; caries; hypoplasia; calculus; periodontal disease; *cribra orbitalia* (left); sinusitis; new bone T11 ap facet; osteoarthritis – T11, 3T, L1 ; ddd – T4, T6–7; op – T2–3 & S1 bsm; pitting – T5 rib facets; calcified cartilage – thyroid; mv – tooth rotation, lumbarised T12 , palatine tori, non-ossification C1 left posterior arch, S5 absent
243	240	R =218	*c.* 17% s.	adult *c.* 35–45 yr ??female	*ante mortem* tooth loss; caries; abscess; hypoplasia; periosteal new bone – mandible; new bone – mandibular canal; mv – tooth rotation
245	244	R ?=356, ?286A, ? (parts)	322 bones/frags a.u.l.	parts several inc. 245A–D + one other adult *c.* 45–60 yr female	periosteal new bone – min. 1 left & min. 3 right ribs , right fibula shafts; ddd – T; osteoarthritis – 1T, 2L, 2 right carpals, 2 left patellae, both 1st Mt-P, 8 right & left costo-vertebral (min. 2 individuals); Schmorl's node – 2T; op – 4C, 11T bsm, 2T ap, 1 rib facet, 2L, left 1st MtC-P, prox. IP (hand), left acetabulum, left & right calcanea & tali; pitting – 4T; exostoses – sternum, left iliac crest, calcanea
245A	244	R*	*c.* 60% (vertebrae, ribs, hand & foot = 245)	adult *c.* 29–35 yr female	*ante mortem* tooth loss; caries; hypoplasia; calculus; periodontal disease; periosteal new bone – right clavicle; op – C1, glenoid fossae; exostoses – left olecranon; mv – tooth rotation, *os acromialie*, metopic suture
245B	244	R*	*c.* 45% (vertebrae, ribs, hand & foot = 245)	adult *c.* 35–50 yr female	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; osteoarthritis – L5, left glenoid; op – C1 ; pitting – left sterno-clavicular
245C	244	R*	*c.* 60% (maj. vertebrae, ribs, hand & foot = 245)	adult *c.* 45–60 yr male	*ante mortem* tooth loss; abscess; hypoplasia; calculus; fracture – left tibia/fibula (fusion); remodelling – rigth lateral clavicle, right acromion, right prox. humerus (?soft tissue trauma); osteoarthritis – L5, left hip, both knees; ddd – L5–S1; op – C1, shoulders, right distal humerus, left proximal ulna, right prox. femur; pitting – sterno-clavicular, left acromio-clavicular; exostoses – distal humeri, left olecranon , femoral shafts, right femur prox. notch, right distal tibia; mv – tooth rotation

Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
245D	244	R*	*c.* 65% (maj. vertebrae, ribs, hand & foot = 245)	adult *c.* 45–60 yr male	*ante mortem* tooth loss; caries; abscess; hypoplasia; calculus; periodontal disease; remodelling – right tibia distal shaft (lamellar new bone); osteoarthritis – shoulders, elbows, hips, left acromio-clavicular, left knee; op – C1, L5–S1 bsm, S1 ap, right distal femur; pitting – left sterno-clavicular; exostoses – ilia, left olecranon, proximal femur shaft; mv – max. I2s pegged, tooth rotation
246	244	*in situ*	*c.* 95%	adult >50 yr ??female	*ante mortem* tooth loss; sinusitis – (bi-, esp. left); periosteal new bone – left tibia & fibula; calcified tissue – gall/kidney stones, hydatid cysts; osteoarthritis – C1–2, L5–S1, 1T, T9 & T11–12 rib facets, right acetabulum; fusion – C2–4; ddd – C4–T6, S1; op – C3 bsm, L4 bsm, right shoulder, right prox. ulna, 5th right MtC-P, 1 right & 4 left prox. IP (hand), left acetabulum, right distal femur; pitting – C4–5 aps, 1T ap; exostoses – femoral proximal notches; mv – bi-lateral fusion 5th distal IP (foot)
249	247	*in situ*	99%	adult *c.* 45–60 yr female	*ante mortem* tooth loss; caries; abscesses; hypoplasia; calculus; periodontal disease; periosteal new bone – maxilla; osteoarthritis – right & left hip; Schmorl's node – T8 & 11, L1; pitting – 1 right rib, right sterno-clavicular; op – C3–5 bsm, T4–S1bsm, shoulders, left prox. ulna, 2 right & 2 left carpals, both intermediate cuneiforms, 1st left T-MtT, 1 left rib; exostoses – iliac crests, right ilium, patellae, calcanea; calcified cartilage – thyroid, rib; mv – bi-lateral fusion 5th distal IP (foot), 13th rib
252	250	*in situ*	*c.* 90%	adult *c.* 45–55 yr ?male	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; osteoarthritis – T1, left 1st C-MtC, right 2nd MtC –P, right 1st prox. IP (hand), right 1st MtT-P, left 1st costo-vertebral, left hip, left shoulder; ddd – C6–7, T5, L5; op – C2 ap, T1–10 bsm, T2 ap, right shoulder, left distal humerus, right carpal, all prox. IP (hand), 3 right distal IP (hand), right hip, knees, ankles, 4 right & 2 left right tarsals, 4th left T–MtT, 1 left rib; ?DISH – T4–10; pitting – T2 & 5 rib facets, left acromio-clavicular, right sterno-clavicular; exostoses – hyoid, ilia, patellae, right navicular; cysts & new bone – left 3–4th metatarsal articular surfaces; calcified cartilage – thyroid; mv – metopic suture
255	253	*in situ*	*c.* 95%	infant *c.* 4–5 yr ??male	caries; calculus
257	256	R ?=	2 bones	adult *c.* 23–40 yr	
260	258	*in situ*	*c.* 90%	infant *c.* 3–4 yr ??female	*cribra orbitalia*; mv – tooth rotation
263	261	*in situ*	*c.* 97%	adult *c.* 45–50 yr male	*ante mortem* tooth loss; caries; abscesses; hypoplasia; calculus; periodontal disease; fracture – ?nasal bone, left rib; secondary sinusitis; osteoarthritis – temporo-mandibular (bi-); Schmorl's node – 6T, L2–4; op – C1, C3–4 & L5 bsm, 1T ap, left glenoid; pitting – right acromio-clavicular, right acetabulum, 1 right & 1 left rib; exostoses – tibial tuberosities; mv – tooth rotation & displacement
271	269	*in situ*	*c.* 45%	infant *c.* 3.5–4.5 yr	*cribra orbitalia*; mv – tooth rotation
274	272	*in situ*	*c.* 55%	juvenile *c.* 6–7 yr ??female	mv – 5th distal IP fused (Foot)
277	275	*in situ*	*c.* 60%	infant *c.* 1–2 yr	
279A	278	R maj. = 327	*c.* 30%	adult >55 yr female	*ante mortem* tooth loss; abscess; osteoarthritis – costo-vertebral, left elbow, left hip; op – left distal femur; Schmorl's node – 1T; exostoses – left distal humerus, left iliac crest
279B	278	R ?*	*c.* 12% s.	adult >45 yr ??male	

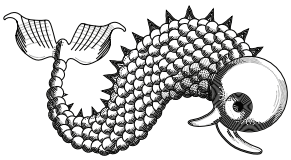
Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
279C	278	R = ?274	*c.* 2% s.	juvenile/subadult *c.* 7–20 yr	
280	278	*in situ*	*c.* 98%	adult *c.* 45–55 yr female	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; periosteal new bone – 5–11th left visceral rib shafts; osteoarthritis – C1, T2–6, T9–11 rib facets, right temporo-mandibular, right acromio-clavicular , distal ulnae, right acetabulum; ddd – C4–6, L1–2; pitting – left acromio-clavicular, left acetabulum. 2 right tarsals, 4 right & 2 left rib facets; op – L3 & 5, T3–12, S1, glenoid fossae, right prox. radius, knees, right tarsal, 4 right & 2 left ribs; trauma – right shoulder; mv – tooth rotation & crowding, non-fusion C7 lamina
282/3	281	R = 1. 245C 2. ?245 &/ or ?286A	11 frags s.a.u.l.	1. adult *c.* 45–60 yr male 2. adult *c.* 45–65 yr female	1. osteoarthritis – left hip 2. op – right acetabulum
285	284	R =?	3 frags a.l.	adult >45 yr	ddd – 1C; op – left patella
286A	284	*in situ*	*c.* 20% l.	adult >25yr	bowing – tibia shafts (rickets); op – right tarsal, right 1st MtT–P; exostoses – calcanea; destructive lesion – right 1st prox. metatarsal
286B	284	R maj. = 245C	8 frags s.a.u.	adult >45 yr male	fusion – L2–3 (ligament ossification left side); osteoarthritis – L4–5; ddd – L3; op – L1–2 & L4 bsm, L4 ap, right acetabulum; pitting – L2 ap; exostoses – right iliac crest, right ilium & ischium
288A	287	R = 324	*c.* 60%	subadult *c.* 14–18 yr ??male	caries; abscess; hypoplasia; *cribra orbitalia*; endosteal new bone – frontal; coalition – occipito-atlas; periosteal new bone – scapulae, proximal femora; op – occipital condyles; mv – tooth rotation, facet atlas/foramen magnum
288B	287	R = ?	11 frags s.u.l.	1. adult *c.* 20–60 yr ?male ?2. adult *c.* 20–60 yr female	1. op – distal IP (hand); pitting – left 1st MtT–P 2. pitting – left humerus greater tubercle
288C	287	R*	*c.* 25% s.a.l.	infant *c.* 6–9 mth	
293	291	*in situ*	*c.* 96%	adult *c.* 35–45 yr female	*ante mortem* tooth loss; caries; abscess; hypoplasia; calculus; periodontal disease; fracture – right radius ; osteoarthritis – 12th right costo-vertebral, left temporo-mandibular, right elbow, left carpal, right knee; op – C1, 6T bsm, left 5th C–MtC; pitting – right temporo-mandibular, acetabulae; cysts – left carpals (sbc); exostoses – left hamate; calcified tissue – hydatid cyst; mv – tooth rotation & crowding
296	294	*in situ*	*c.* 1% s.	infant *c.* 1–2 yr	
296B	294	R ?=308	3 frags s.	adult *c.* 30–55yr	caries; hypoplasia
299	297	*in situ*	*c.* 95%	infant *c.* 9–18 mth	periosteal new bone – skull; mv – wormian bone
302	300	*in situ*	*c.* 95%	adult *c.* 40–60 yr ?female	*ante mortem* tooth loss; caries; hypoplasia; calculus; fractures – 2 right rib shafts; periosteal new bone – right rib; osteoarthritis – T1, T3–4, L4–5, tempo-mandibular (bi-), hips, 1 left & 1 right costo-vertebral; ddd – C3–7, T5–6, L5; op – C1–2, T2–4 & T7–L4 bsm, S1 bsm, shoulders, 2 right carpals, both 1st C–MtC, right 1st MtT–P, distal IP (foot), 2 right & 2 left ribs; pitting – T10 & T12 rib facets, right acromio-clavicular; exostoses – hyoid, iliac crest, patellae, calcanea; calcified cartilage – thyroid, rib; cyst – left lunate (sbc); mv – tooth rotation, metopic suture, T1 non-fusion laminae
305	312	*in situ*	*c.* 60%	adult *c.* 35–50 yr ??female	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; bowing – tibia (healed rickets); ddd – S1; mv – tooth rotation
307	306	R = 3–8	2 frags a.	adult >30 yr	osteoarthritis – left 11th costo-vertebral

Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
308	306	*in situ*	*c.* 90%	adult *c.* 45–55 yr female	*ante mortem* tooth loss; abscess; calculus; *cribra orbitalia* (left); osteoarthritis – 1T, L5, right hip, left acetabulum, right knee, left temporo-mandibular; ddd – L1; Schmorl's node – L1–2; pitting – left sterno-clavicular; op – right shoulder, 2 right carpals, left knee; exostoses – right tibia; mv – tooth rotation
308/311	306/9	R*	3 frags s. l.	neonate 0–6 mth	
311	309	*in situ*	*c.* 97%	subadult *c.* 18 yr female	caries; abscess; calculus; hypoplasia; spondylolysis – L6; periosteal new bone – mandible, left prox. femur; *osteochondritis dessicans* – left distal femur; mv – tooth rotation & displacement, L6
314	306	*in situ*	*c.* 98%	infant *c.* 1–1.5yr	endosteal new bone – left temporal
317	315	*in situ*	*c.* 80%	adult *c.* 40–55 yr female	*ante mortem* tooth loss; caries; abscess; hypoplasia; calculus; periosteal new bone – left tibia; osteoarthritis – hips, 3 costo-vertebral; bowing (rickets) – femora, tibia; ddd – 2C, L4–5, S1; pitting – 2T rib facets, 5T ap
320	318	*in situ*	*c.* 90%	foetal 36–38 weeks	
321	287	*in situ*	*c.* 98%	adult *c.* 50–65 yr male	*ante mortem* tooth loss; caries; calculus; vertebral body collapse – T7–9 (slight); new bone/ankylosis – left auricular surface ; osteoarthritis – C3, right elbow, hips, 5 right & 1 left costo-vertebral; ddd – C6–7, T5–6, T8–9, T11–12, L2–3; Schmorl's node – T6–11; pitting – T10–11 rib facets, left temporo-mandibular, acromio-clavicular, left distal ulna; op – C1–5, T1 & 1T tp, T4, T7 & T10 bsm, L1 & L4–5 bsm, shoulders, 1 right carpal, 3rd & 4th right C–MtC, 1 right & 1 left distal IP (hand); calcified cartilage – rib; exostoses – iliac crests, calcanea; mv – tooth rotation, capitate double prox. facets
324	322	*in situ*	*c.* 5% u.	subadult *c.* 13–15 yr	
327	325	*in situ*	*c.* 50% a.u.l.	adult >50 yr female	osteoarthritis – right elbow, right hip; op – L5 ap, all right prox. IP (hand), right knee; exostoses – calcanea; mv – pseudo-facets calcanea/naviculars, right 1st metatarsal head
330	328	*in situ*	*c.* 55%	adult >45 yr ??male	osteoarthritis – S1, L5; ?fracture – fusion right fibula head to tibia; op – L4–5 ap, L4 bsm, right glenoid, right patella; exostoses – right ilium, right prox. femur
333	331	*in situ*	*c.* 85%	adult *c.* 50–60 yr female	*ante mortem* tooth loss; osteoarthritis – T5 &8, temporo-mandibular (bi-), left lunate, right 1st C–MtC, left knee, right 4–5th T–MtT; Schmorl's node – T9; op – T5–12 bsm, , T12 rib facet, L1–5 bsm, right MtC–P, 4 right & 1 left prox. IP (hand), right distal IP (hand), acetabulae, right knee, right calcaneum, left rib
337 + R 339	335	*in situ*	*c.* 98%	adult *c.* 30–35 yr male	caries; hypoplasia; calculus; osteoarthritis – right sterno-clavicular; Schmorl's node – T8 & 11; op – T12 rib facets, left sterno-clavicular, left patella; exostoses – ischia, iliac crest; calcified tissue – rib ; mv – tooth rotation, displacement & impaction, shovelled maxillary incisors, metopic suture, grooves in scaphoid surfaces
342 +R 310	340	*in situ*	*c.* 20%	infant *c.* 2–3 yr	caries
348	346	*in situ*	*c.* 65%	subadult *c.* 14–16 yr	caries; calculus; periosteal new bone (?TB) – min. 5 left ribs, humerus shafts, proximal ulnae, left tibia; mv – shovelled Max. I2

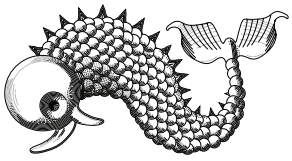
Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
351	349	*in situ*	*c.* 95%	adult >50 yr female	*ante mortem* tooth loss; caries; abscesses; osteoarthritis – T4–5, T8–9, T12; remodelling – diminutive left T ap facets, bodies skewed & angled to right, T6–9 transverse processes angled superiorly, left 5–10th ribs, 8 right ; vertebral body collapse – T7 & T8–12 (all to left); fusion – T9–11 with anglulation to left ; destructive lesion – left prox. tibia, naviculars, prox. 1st metatarsals; op – C2, left 1st T–MtT, 1 right & 3 left ribs; mv – ?non-fusion atlas posterior arch, cuboid grooves, right 2–3rd metatarsal pseudo-facets
354	352	*in situ*	*c.* 98%	adult *c.* 55–65 yr female	*ante mortem* tooth loss; osteoarthritis – T3–6, 9–11th costo-vertebral, L4, acetabulae; Schmorl's node – T6–11; ddd – C5–7; op – T2 & T12 ap, T4–11 bsm, T8 tp, L2–5 bsm & articular processes, S1 articular process, right acromio-clavicular, glenoid fossae, right 5th distal IP (hand), 7 right & 9 ribs; calcified tissue – rib cartilage ; cyst – left scaphoid (sbc); exostoses – left greater trochanter, patellae
356	355	R *	*c.* 8% a.u.l.	adult *c.* 18–45 yr ?female	exostoses – right calcaneum
360	358	*in situ*	*c.* 80% a.u.l.	adult *c.* 45–60 yr female	periosteal new bone – right ilium, tibia shafts; osteoarthritis – 1st & 11th + 2 other costo-vertebral, right distal ulna, left carpal, 2nd–3rd MtC, right hip; ddd – C6–7, T4, T10–11, L2–5; vertebral body collapse – C6; bowing – tibia shafts (?healed rickets); remodelling – T7–8 bodies skewed to right; op – C6–7 bsm, glenoid fossae, rigth lunate, 4 left carpals, right 1st C–MtC, left acetabulum, right knee; pitting – T3–10 rib facets, T12–S1 ap, right acromio-clavicular, left distal ulna; exostoses – iliac crests, femur shafts, calcanea
364	362	*in situ*	*c.* 97%	adult *c.* 35–50 yr ?male	*ante mortem* tooth loss; caries; abscess; calculus; *cribra orbitalia* (left); *osteochondritis dessicans* – right distal humerus; osteoarthritis – right prox. ulna; Schmorl's node – T6–12; pitting – T5 rib facets, right sterno-clavicular, right prox. radius; op – L5 bsm; mv – tooth rotation
367a	365	R*	*c.* 50% s.u.l.	adult *c.* 30–40 yr ?male	caries; hypoplasia; calculus; periodontal disease; *cribra orbitalia* (left); modification – anterior teeth (?pipe); mv – tooth rotation & overcrowding
367b	365	R*	*c.* 18% s.a.u.	infant *c.* 1–1.5 yr	hypoplasia
370	368	*in situ*	*c.* 96%	adult *c.* 35–55yr female	*ante mortem* tooth loss; caries; abscess; hypoplasia; calculus; modification – right mandibular & maxillary canines (?activity related); rickets – femora, tibiae, T3–4, T8–12, ribs; osteoarthritis – T2–L1, L3–5, T1 & T4–7 & T11 costo-vertebral (bi-), left shoulder; ddd – T7, S1; op – C7–T1 & T4–6 & T8–12 bsm, L2 ap, S1 ap, left acromio-clavicular, right shoulder, right prox. ulna, 3 right carpals, right 1st MtC–P, acetabulae, knees, both 1st MtT–P, left 1st prox. IP (foot); calcified cartilage – rib; exostoses – iliac crests, distal humeri, patellae, calcanea; mv – tooth rotation, impacted unerupted maxillary canine (left), 5th middle phalanges shortened (hand), pseudo-facets calcanea/navicular
372	371	R = 360	*c.* 15% s.	adult >50 yr female	*ante mortem* tooth loss; abscess; osteoarthritis – temporo-mandibular (bi-)
375	373	*in situ*	*c.* 55%	adult >50 yr female	*ante mortem* tooth loss; abscess; hypoplasia; calculus; ivory/button osteoma; op – L5–S1 bsm, knees; exostoses – left iliac crest , right olecranon , patellae , calcanea; mv – tooth rotation & crowding

Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
378 +R 377	376	*in situ*	*c.* 95%	adult *c.* 50–65 yr female	*ante mortem* tooth loss: caries; calculus; hypoplasia; rickets – femora, tibiae, fibula; ddd – L1; osteoporosis; op – C1, T11–12 & 1other T bsm, L1–3 bsm, L5 ap, right prox. humerus, right prox. ulna & radius, left prox. ulna, right 1st MtC–P, right distal IP (hand), right prox. femur, left acetabulum, left patella; pitting – T3–5 ap, left temporo-mandibular; exostoses – iliac crests, patella; mv – tooth rotation, impaction maxillary right canine
381	379	*in situ*	*c.* 85%	infant *c.* 3.5–4.5 yr ??female	mv – L6?
384	382	*in situ*	*c.* 98%	adult *c.* 45–55 yr male	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; osteoarthritis – left acetabulum, 11–12th costo-vertebral (bi-); Schmorl's node – T8–9, T11–12, L3–4; ivory osteoma; pitting – T7 ap, temporo-mandibular (bi-), acromio-clavicular, sterno-clavicular; op – C1–2, C3 & 6 ap, T4–12 bsm, L3–5 bsm, L3–4 ap, shoulders, right pisiform, right acetabulum, right talus; exostoses – patellae
390	388	*in situ*	*c.* 75%	adult *c.* 40–50 yr female	caries; hypoplasia; osteoarthritis – right 1st prox. IP (hand); op – T11–S1 bsm, right glenoid, right 2–3rd MtC–P, 2 right distal IP (hand), left tarsal, acetabulae; calcified tissue – rib; exostoses – iliac crest
393	391	*in situ*	*c.* 99%	adult *c.* 35–45 yr female	caries; abscess; calculus; hypoplasia; ?fracture – left rib shaft; periosteal new bone – tibia shafts (lamellar); osteoarthritis – left 10–11th & 3 right costo-vertebral; op – C1, T1 & T4 rib facets, T6–7 & L5–S1 bsm, knees, hips, right tarsal, 2nd right MtT, left distal ulna, 2 left & 1 right carpals, 2 left prox. IP (hand), 1 left distal IP (hand); pitting – T6 ap; exostoses – calcanea; mv – impaction & non-eruption maxillary canines with retention right deciduous, tooth rotation & displacement, 5th distal IP fused (foot), maxillary incisors shovelled
396	394	*in situ*	*c.* 98%	adult >55 yr ?female	*ante mortem* tooth loss; calculus; osteoarthritis – C2–4, T2–7, T8, acromio-clavicular (bi-), right acetabulum, 2 right & 2 left costo-vertebral; Schmorl's node T9; ddd – C4–T1; op – C5 ap, T1 ap, T11–12 right rib facets, L4–5 bsm, L5–S1 ap, left glenoid, left distal humerus, left prox. IP (hand), right prox. humerus, left acetabulum; pitting – right sterno-clavicular; exostoses – prox. femora, calcanea; mv – 5th distal IP fused (foot)
398	397	R = 413	5 frags l.	adult >18 yr	
399	397	*in situ*	*c.* 99%	adult *c.* 18–20 yr female	calculus; hypoplasia; pitting – T3 ap; destructive lesion – right 1st MtT–P; mv – tooth rotation, malformed max. M3/supernumeries, ossicle @ lambda
400	391	*in situ*	*c.* 99%	neonate 0–3 mth	
403	401	*in situ*	*c.* 98%	infant *c.* 4–5 yr	caries; hypoplasia
405a	404	R*	4 frags s.l.	neonate	
405b	404	R = 422	*c.* 10% s.a.u.	adult >30 yr female	hypoplasia; vertebral body collapse – T
406	404	*in situ*	*c.* 98%	adult *c.* 30–40 yr ??female	caries; calculus; sinusitis; vertebral body collapse – T3 (slight); osteoarthritis – 2 right costo-vertebral; op – T2–7 ap, left rib; mv – maxillary I2 pegged, anomaly in tooth spacing
408	407	R = 409	11 frags a.u.	adult *c.* 20–35 yr ??female	op – left rib; mv – T1 pseudo transverse foramen
409	407	*in situ*	*c.* 40%	adult *c.* 35–50 yr female	osteoarthritis – 11–12th costo-vertebral (bi-); hypervascularity/porosity – right parietal; Schmorl's node – T6 & T8–9; op – T8 tp; pitting – T5 ap, T13 costo-vertebral; mv – T13 with non-fusion neural arch, L5 sacralised with non-fusion neural arch
412	411	*R part ?= 413 rest ?*	*5 frags a.u.l.*	adult >45 yr ?female	

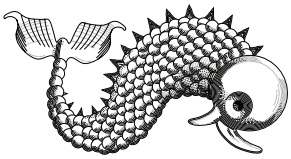
Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
410/413	411	*in situ*	*c.* 70%	adult *c.* 45–60yr female	*ante mortem* tooth loss; abscess; calculus; periosteal new bone – maxilla, mandible; *osteochondritis dessicans* – right distal femur; osteoarthritis – 2 T ap, right elbow, distal radius, hips; ddd – C5–6, L5; Schmorl's node T9, T11–12, 3T, , L3 & 5; op – T10 bsm, L3–5 bsm, knees, 2 right distal IP (hand) , right prox. humerus, 2 right carpals, 2nd right MtC–P, 2 right ribs; pitting – left distal humerus, right rib; exostoses – right distal humerus, prox. femora, patellae
415 ?	414	R?	9 frags l.	adult >40 yr ?female	osteoarthritis – left patella, rigth prox. femur
416	414	*in situ*	*c.* 98%	adult *c.* 45–60 yr ??female	*ante mortem* tooth loss; ivory osteoma; osteoarthritis – C2–3, C5, left temporo-mandibular, left 3rd T–MtT, right 3rd T–MtT, acromio-clavicular (bi-); fusion – T1–2, T5–6, T8–9 (partial); vertebral body collapse – T3–4 (left), T (left), T7–8 (left), T9, T11; remodelling – sacrum; ddd – C5–6, T7–12, L5; Schmorl's node – T6–L5; op – C1, C4 & 7 bsm, C4–5 ap, T3–4 ap, T5–6 bsm, L1–5 bsm, left tarsal, left shoulder , left radius/scaphoid, 3 left prox. IP, right prox. humerus, 2 right carpals, 5 right prox. IP (hand), 1 left & 2 right ribs, acetabulae; pitting – T7–9 rib facets, left tarsal; calcified cartilage – rib; exostoses – patellae, calcanea; mv – 6C
418	417	R = 409	*c.* 35%	adult *c.* 35–45 yr female	*ante mortem* tooth loss; abscess; caries; hypoplasia; calculus; periodontal disease; osteoarthritis – left 11th costo-vertebral; op – left knee
419	417	*in situ*	*c.* 98%	adult *c.* 40–50 yr ?female	*ante mortem* tooth loss; caries; hypoplasia; calculus; periodontal disease; op – C1–2, C3 bsm, T4–12 bsm, L4 bsm, S1 bsm, left temporo-mandibular, left distal femur, left 2/3rd prox. IP (hand), 4 right distal IP (hand), 3 right & 3 left ribs; pitting – right rib; T1 – pitting & new bone (?infection); cyst – right trapezium (sbc); destructive lesion – right 2/3rd middle phalanx shaft (hand); vertebral body collapse – T6–7 (left), T8–9 (right); calcified cartilage – rib; exostoses – iliac crests, patellae; mv – tooth rotation
422	420	*in situ*	*c.* 50%	adult *c.* 35–45 yr female	
425	423	*in situ*	*c.* 94%	adult *c.* 35–55 yr male	*ante mortem* tooth loss; caries; abscess; calculus; hypoplasia; periodontal disease; fractures – 1 left & 2 right ribs; new bone – left prox. tibia (soft tissue trauma); callusing – left prox. fibula (?soft tissue trauma); osteoarthritis – T5, T7 rib facet, right acetabulum, left temporo-mandibular; ddd – C5; Schmorl's node – T7; op – C1–2, C2–4 bsm, T4–5tp, T6 bsm, T8–10 bsm, L5 ap, S1 bsm, right temporo-mandibular, left distal femur, shoulders, left distal ulna, left 1st prox. IP (hand), 2 right & 2 left ribs; pitting – T6 ap, T10 rib facets, left acetabulum; cortical defect – juxta-articular left acetabulum; exostoses – T9 tp; mv – ossicle @ lambda
428	426	*in situ*	*c.* 95%	adult >50 yr ?male	*ante mortem* tooth loss; calculus; *cribra orbitalia* (left); fusion – T4–6 (with slight anterior body collapse); osteoarthritis – T2, T10 tp, L5, S1, right temporo-mandibular, left distal IP (hand), right prox. radius, right hip, 5 left & 4 right costo-vertebral; ddd – C5–7 (with slight body collapse) , T6–11; Schmorl's node – T6–11; op – C1, C4–5, T2–5 tp, T3 & T12 bsm, L1–4 bsm, S1 bsm, right distal femur, left shoulder, left carpal, left 1st C–MtC, right glenoid, right 1st C–MtC, right prox. IP (hand), left acetabulum; pitting – T1 tp, T4 ap, T12 rib facet, L4 ap, left & right 3rd T–MtT, left 1st MtT–P, both acromio-clavicular & sterno-clavicular, left distal humerus, right 4/5th distal IP (hand); exostoses – right distal humerus, femoral shafts; cysts – scaphoids (sbc), capitates (sbc); mv – tooth rotation
431	429	*in situ*	*c.* 50%	adult *c.* 40–55 yr female	Schmorl's node – T10–L5; op – right 1st C–MtC, left patella; pitting – left acetabulum
U/S		R ?=122, ?296	2 frags s.l.	infant *c.* 1–2.5yr	mv – wormian



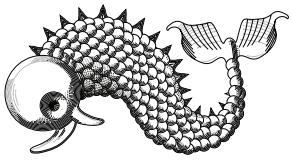
APPENDIX III GLOSSARY OF OSTEOLOGICAL TERMINOLOGY



aetiology – cause of disease (study of)
alveolus – area of mandible or maxilla in which tooth sockets are situated; generally area nearest the neck of the tooth
ankylosis – abnormal bony fusion of a joint/between two or more bones
anterior – to the front
antrum – maxillary sinus cavity
aproximal – juxtaposed area of teeth
buccal – towards the cheek (in the mouth)
carpals – eight bones within the wrist/hand
calcaneum/ea – largest of the tarsals, forming the heel of the foot
cervical – neck
distal – furthest from centre
dorsal – the back
external occipital protuberance/nuchal crest – area at the back of the skull, towards the base of the occipital bone, where the major neck muscles attach
hyoid – a small U-shaped bone formed of three parts which sits below the tongue
kyphosis – angular deformity of the spine with dorsal or dorsal-lateral convexity
iliac crest – dorso-lateral rim of the innominates/pelvic bones
ilium – main body of the innominates/pelvic bones
inferior concha – bones situated to either side of outer wall of nasal fossa
innominate(s) – bones of the hip/pelvis
labial – towards the lips (in the mouth)
lambda – junction between the lambdoid and sagittal sutures (occipital and parietal cranial bones)
lesions – changes in the bone tissue resulting from disease or trauma
lateral – to the sides
mandible – lower part of the jaw
mastoid processes – processes for the attachment of muscles in the lower part of the temporal bones of the skull (behind the external orifices of the ears)
maxilla – upper part of the jaw
medial/mesial – towards the midline
metal protuberance – anterior part of the mandible (chin)
navicular – tarsal bone, in the central row above the arch of the foot
necrosis – localised tissue death resulting from a failure in blood supply in response to disease or trauma
occipital – large triangular bone forming back/base of cranial vault
occlusal – biting surface of the teeth
ossicle – a small bone
parietal – cranial bones lying to either side of sagittal suture
planter – sole of foot
posterior – back
proximal – nearest centre
sagittal – mid-line across top of skull
sphenoid – wedge shaped or 'winged' bone situated in anterior of skull base and articulating with all other cranial bones binding them together
sutures – junction between two bony surfaces (generally in the skull)
tarsals – seven bones of the ankle/foot
ventral – front
visceral – facing into the main body cavity (a surface, generally of the ribs)



APPENDIX IV GLOSSARY OF TERMINOLOGY APPLIED TO VARIOUS RELIGIOUS GROUPS AND RELATED ACTS OF PARLIAMENT



Unless otherwise stated, all references derived from Cross and Livingstone (1997), hereafter *C&L*.

Act of Uniformity 1662
(Fourth of this name, earlier *Acts* 1548, 1551 and 1558). Required all ministers to publicly assent to the exclusive use of the *Book of Common Prayer*.

Anabaptists
'Re-baptizers' (from Greek). Comprehensive designation (ie, a nickname) of various closely related 16th century Continental groups (originally in Switzerland and south-west Germany) who refused baptism of their children and reinstituted the baptism of believers. In 17th and 18th century England Baptists were often described as Anabaptists but by then the name had '... become one of abuse with evil associations and was largely repudiated.' (*C&L*, 55)

Baptists
First Baptist Church in England established 1612 in London by followers of John Smyth, who in 1609, as a separatist exile in Amsterdam, reinstituted the Baptism of committed believers as the basis of fellowship of a gathered Church. (*C&L,* 154). *See also* General and Particular Baptists.

The Baptist denomination is not a 'church' in the same sense as the Methodist Church or the Church of England, which are centrally organised, each local church being accountable to a denominational headquarters which can provide a systemised record of their ministers and the local churches. Each local Baptist church is a separate, autonomous body, self-governed by the 'church meeting'. Although there have been/are various Associations and Assemblies and, since the early 19th century, a Union of Baptist churches, individual churches decide whether to join or remain independent. The members of an individual church choose their own minister and the title 'Baptist minister' does not automatically carry any guarantee of theological training, doctrinal orthodoxy, ordination or accreditation, but denotes one who is or has been in pastoral charge (Breed 1995, 1–3).

Chapel
'Roman Catholic and dissenting places of worship, in distinction from the English parish churches. Before the 19th century the word 'church' was rarely applied to such buildings.' (*C&L*, 319(2))

Congregationalists
Form of Church polity resting on the independence and autonomy of each local church; follows from a fundamental belief in Christ as the sole head of His Church. (*C&L*, 399). Groups in existence in England from 16th century; essentials of congregationalism laid down by Browne (16th–17th century Puritan separatist); doctrine set forth by Barrow in 1589.

Corporation Act 1661
Requiring all members of municipal corporations to take an oath abjuring all rebellion against the king, declaring the *Solemn League and Covenant null and unlawful, and affirming they had recovered the Communion in accordance with the rites of the Church of England within the year preceding their election. Repealed 1828 (*C&L*, 420). Formulated in response to the considerable distrust of Non-conformists after the English Civil War, with many in Parliament believing that they were potential rebels and regicides, intensified by an uprising of Fifth Monarchists in 1661 (Watts 1895, 222)

*1643 agreement between Scots and English Parliament aimed at '... the maintenance of the Presbyterian Church of Scotland, the reformation of the Church of England and the uniformity of Churches of the British Isles, the extirpation of Popery and prelacy ... preservation of the rights of Parliaments and the liberties of the kingdoms, the defence of the King's just power and suppression of

the malignants who sought to divide him from his people.' (*C&L*, 1515).

Conventicles Acts 1664 and 1670
Declared illegal all meeting of more than five persons in private houses (excluding the normal household) or elsewhere for worship other than as prescribed by the *Book of Common Prayer*. The later *Act* mitigated the penalties of the original but extended the powers of those engaged in suppressing conventicles.

Dissenters
'Those who separated themselves from the communion of the Established Church.' (*C&L*, 490). In the 18th century this would have included Roman Catholics.

Fifth Monarchists
Seventeenth century fanatical sect whose aim was to establish '... the 'Fifth Monarchy' (*Dan*. 2: 44) which should succeed the four empires of Assyria, Persia, Greece and Rome ...' where '... Christ was to reign with His saints for a thousand years (*Rev*. 20: 4)'. One time supporters of Cromwell and the Commonwealth, they turned against him once they realised their beliefs would not be accepted (*C&L*, 610).

Five Mile Act (Nonconformists Act) 1665
Part of the Clarendon Code, passed to secure the position of the established church after the Restoration. Prohibited Nonconformist ministers from coming within five miles of a parish/town/city in which they had formerly officiated unless they had taken the 'non-resistance oath' stating that they would not 'at any time endeavour any alteration of Government either in Church or State'. As most Dissenting congregations were at this time centred in the towns this act indirectly '... contributed to the spread of Nonconformity in the countryside.'

General Baptists
Baptists whose theology was Arminian (after Jacobus Arminius, 1610 rejected the Calvinistic doctrine of predestination; *C&L*, 107) and whose polity allied with the Presbyterians (*C&L*, 660). The earliest English Baptists, first congregation founded in 1612 in London, belonged to this group. After many General Baptists Churches had moved towards Unitarianism, a New Connexion was formed in 1770 which united with the Particular Baptists in 1891.

Hardwicke's Marriage Act 1753
The *Act* '... required a marriage to be performed in the parish church of one of the spouses (or in certain designated chapels) by an Anglican clergyman, in the presence of at least two witnesses, and only after the publication of banns or by the authority of a valid marriage licence ...' The object was to '... prevent irregular, clandestine or runaway marriages. Until l754 marriage ceremonies that did not comply with church rules (such as those relating to banns, licences and the spouses' residence) were irregular but nevertheless legally valid. Many marriages did not take place in the parish church of either the groom or the spouse, and sometimes not even in a parish church ... It was not even essential for a ceremony to take place (since the exchange of vows by the couple was sufficient under English law) ... Clandestine weddings often involved minors (people under the age or 21) or heiresses whose parents opposed the marriage (or were not even aware of it.)' (Herber 1997, 103)

Independents
Upholders of the independence/autonomy of each local congregation. Another name for Congregationalists in general use in Britain until the end of the 18th century. (*C&L*, 826)

Paedobaptists
Those who support the baptism of infants and children.

Particular Baptists
Baptists whose theology was essentially Calvinistic (characteristic emphasis on predestination, though the doctrine was not central to the system; *ibid*., 268) as compared with the Arminianisum of the General Baptists. Polity similar to that of the Independents but with an emphasis on 'associations' of local Churches. First English community was established in Southwark in 1633. (*C&L*, 1223)

Presbyterians
Adherents to a form of ecclesiastical polity in which the Church is governed by presbyters (Greek 'elders') and the Bible is acknowledged as the supreme standard of faith and practice. The model of government has been adapted to suit a wide variety of regional variations (*C&L*, 1322).

Toleration Act
1688 granting freedom of worship to Dissenters on certain prescribed conditions. Persons taking the *Oaths of Allegiance and Supremacy* were exempt from the penalties of most existing statutes against dissenters, and ministers were relieved from religious disabilities provided they also signed the *Thirty-Nine Articles* (excluding those on infant baptism). Its true aim was to unite all Protestants under William III against the deposed Catholic king James II.

Quaker
Nickname given in 1650 by Justice Bennett to George Fox who bade him to '... tremble at the Word of the Lord.' (*C&L*, 1354). Had been used earlier (1647) to refer to a foreign religious sect. Early Quakers also referred to the spiritual tremblings sometimes experienced at their meetings.

Methodism
System of faith and practices originally promoted in 1729 by John and Charles Wesley in Oxford. Term applied to 18th century evangelical movement led by Wesleys and Whitefield but often loosely applied to all sorts of evangelicals (*C&L*, 1077)

Nonconformists
'Refusal to conform to the doctrines, polity, or discipline of any Established Church' (*C&L*, 1159). The execution of the 1662 *Act of Uniformity* marked the formal beginnings of Nonconformity. The word is now applied to all – particularly Protestant – dissenters including Presbyterians, Congregationalists, Methodists, Quakers and Baptists.

Separatists
Title first applied to followers of Browne (16th–17th century Puritan separatist) and later to Independents/ Congregationalists and others who separated from the Church of England. (*C&L*, 1483).

Society of Friends
Commonly known as Quakers (*C&L*, 642).

Unitarianism
Rejects the doctrines of the Trinity and the Divinity of Christ in favour of the unipersonality of God. No formal creed. Teaching original based on scriptural authority. First Unitarian denomination in England formed in 1773. Unitarian views widely accepted amongst Dissenting congregations in 18th century England, though *The Penal Acts* continued in force against Unitarians until 1813. (*C&L*, 1659).

APPENDIX V
LIST OF UNPUBLISHED SOURCES CONSULTED IN DOCUMENTARY RESEARCH

Sue Johnson

Document reference given by location.

1. The National Archives (TNA)/Family Records Centre

Census Returns: 1841 Poole St James (part) HO107/294, folios 42, 43, 45; 1851 Poole St James (part) HO107/1855, folio 196

Documents Online website: – Prerogative Court of Canterbury (PCC) Wills

Home Office: Burials Entry Books, HO85/1 1854 Apl 24–1854 Aug 21, p.153

London Gazette: ZJ1/285 Jly–Sep 1854, p. 2519 (original closure order); ZJ1/287 Jan–Mch 1855, p. 482 (order made 08 Feb 1855 extending closure date to 01 March 1855)

Prerogative Court of Canterbury (PCC) Administrations indexes

Registrar General: Non Parochial Registers, Dorset:
Poole, Hill Street (Baptist): Births 1797–1837, Ref: RG4/2411
Poole, Skinner Street (Independent) Church: Births & Baptisms, 1785–1793, Ref: RG4/1229
Wareham, Independent Chapel, Meeting House Lane: Births & Baptisms, 1785–1793, Burials 1787–1794, Ref: RG4/60

RG31 *Places of Worship Certifying Act* 1852 Returns (made to the Registrar General)

RG31/8 Return made by Clerk of Peace of Town, County & Borough of Poole, dated 7 Sep 1852.

2. Dr Williams's Library

Coffin, W.T. with Penney, T., Spinney, J. and Cave, A. J., 1954. *These 150 Years: being a brief history of Poole Baptists 1804–1954*. Additional information in copy of letter in this volume.

Evans, J. List of Dissenting Congregations and Ministers in England and Wales 1715–1729, Ref 702.C.33

Thompson, J. List of Dissenting Congregations in England and Wales, 1772–3, Refs: Manuscripts 38.5;38.6; 38.7–11

?Richards, W.R. [in pencil on front] Lyme Regis Baptists 1653–1953, Ref. 5106 DS 8

3. Hill Street Baptist Chapel, Poole

1735 West Butts Covenant (photocopy)

1805 Extract from Hill Street Church Book (photocopy)

1806 application to Mayor of Poole for registration of Baptist Chapel in Bowling Green Alley (photocopy)

1817 Hill Street Church Minute Book

1905 Joint Statutory Declaration as to title of the Baptist Community at Poole to a piece of land in West Butts Street.

Typed note historical summary (?Spinney 1950s)

Typed summary of founder members (?Spinney 1950s).

4. Skinner Street United Reformed Church, Poole

Church book

5. Isle of Wight Record Office

Lists of members and cash book 1743–1814 Ref: NC/U/12

Newport Unitarian Church, formerly General Baptist Church

Subscription list etc. in connection with building of new meeting house, 1774 Ref: NC/U/33

6. West Sussex Record Office

Records relating to Chichester General Baptist Church, Ref: NC/GB1, information from Richard Childs, County Archivist

7. Wiltshire and Swindon Record Office

Documents relating to the land on which the General Baptist meeting house was located, Ref:476/1

8. Dorset History Centre (DHC); formerly Dorset Record Office

Church Book containing covenant Wm. Madgwick, admission of members 1704–44 and baptisms 1704–1752 Ref NU2/MS1 – use microfilm MIC/R/1056

Deeds to land called West Butts on west shore of Poole, 1830–1854, Ref D/BSA/B1

Deeds of land in West Butts, 1823–1898 (69 documents), Ref D/1447/1

Records of Poole Unitarian Church, formerly Hill Street Presbyterian/The Old Meeting.

Registers of baptisms and marriages at Poole St James' church 1653–1721, as transcribed by the Dorset Family History Society

1751 Map surveyed by Thomas Reeks & William Tucker, Ref: Photocopy 259

1841 Town map

9. Poole Local History Centre

Index cards (listing various references to a given surname) for Bird and Strong Local newspapers on microfilm

1822 Enclosure Award for Canford Magna and Poole (microfilm)

10. Bristol Record Office

Bishop Secker's Diocesan Survey, Ref: EP/A/2/2

11. Society of Genealogists

Peculiar Court of Great Canford and Poole, index to wills 1650–1857 (Microfilm 732)

Peculiar Court of Great Canford and Poole, alphabetical register of administrations 1650–1857 and a few other wills (Microfilm 729)

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Figures in *italics* denote illustrations.
For details of coffin furniture and items found in graves, see Grave Catalogue.

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This volume describes the excavation and analysis of remains recovered from an intact, 18th century Baptist burial ground situated on the north-west margins of Poole, Dorset. The West Butts Street congregation was established in 1735 by 15 named members but dwindled in the 1780s on the demise of their one and only Pastor, John Bird. The chapel was demolished but the burial ground subsequently served a second Baptist community, Hill Street, founded in 1804, until their own church was built in 1813.

The accompanying documentary research gathered a wealth of information regarding 18th century Poole, its population and economic status, and the growth and spread of Nonconformity and the Baptist movement in the town, but there were few direct conclusive links with the West Butts congregation. It has, however, been possible to form an impression of the world in which the members of the congregation lived and worshipped which, together with the excavated evidence, including the osteological analysis of the 100 individuals identified, has enabled some aspects of the lives of the cemetery's population to be gleaned.

Wessex Archaeology

Lifeboats