

What price compromise?

Archaeological investigations at St Bartholomew's Church, Penn, Wolverhampton

By Angela Boyle

Archaeological investigation undertaken prior to the building of an extension at St Bartholomew's Church in the summer of 1999 has revealed interesting insights into the life of the people of Penn in the 18th and 19th centuries. A total of 372 burials had to be moved and were recorded before being re-interred in the northern portion of the graveyard. From legible plates and stones it was possible to identify 49 named individuals, many of whom had been buried in underground vaults and shafts. Overall it can be said from the evidence recorded during the examination of the skeletons that during the 18th and 19th century the people of Penn were in good health and generally lived well into old age.

A variety of different burial types were revealed. The majority of individuals were buried in shrouds and laid in earth-cut graves, or within wooden coffins, often with brass or iron fittings. It is likely that the majority of the individuals buried in earth-cut graves are earlier: most were deeper and were cut by later burials, some of which could be dated to the 18th and 19th centuries. A number of the coffin fittings are as yet unparalleled elsewhere. Some individuals were buried within elaborate triple-shell lead and wooden coffins, often within brick-shaft graves or larger brick-built family vaults.

In addition to discussing the results, this article attempts to evaluate the success of the project. The methodology was loosely based on a small group of broadly similar projects combined with the author's own past experience.

Introduction

An assemblage of 372 burials was excavated in advance of proposed development of a portion of the churchyard of St Bartholomew's, Penn, Wolverhampton. The work, which comprised an archaeological watching brief by Oxford Archaeology (OA) who were in attendance on Necropolis, a firm of exhumation specialists, was carried out over an eight-week period in the summer of 1999. The proposal to provide the church with parish rooms and toilet facilities on the north side of the existing present building necessitated the excavation and clearance of c 400 m². Enabling works that also had archaeological implications were the eventual provision of a graded path to the new building, and the erection of the permanent facility. In addition, a small section of the churchyard wall had to be removed to provide access to the site.

The development proposal included the provision for reinterment of burials in an archaeologically clear site, along the line of the northern footpath through the graveyard. Grave memorials were also re-erected in this area. This process necessitated the breaching of the curtilage wall.

Geology and topography

St Bartholomew's Church is located in Upper Penn on the corner of Church Hill and Vicarage Road, to the south-west of Wolverhampton, West Midlands at NGR SO 8945 9529. The church is built on the lower southern summit of a hill and the development area slopes down at an incline of c 30 degrees to the south.

Archaeological and historical background

Penn was established as a small community by the time of the Domesday record, but there is no mention of a church dating to this period. However, the remains of a Saxon preaching cross were recovered on the south side of the church in the late 19th century and this has been speculatively associated with the Countess Godiva of Mercia who held the estate prior to the Norman Conquest. Whether the cross acted as the main focal point of religious gatherings or existed alongside a church on the site is unknown. It has been conjectured that the first, possibly wooden, church on the site was established c 1200 AD by Sir Hugh de Bushbury. Although further developments and extensions of

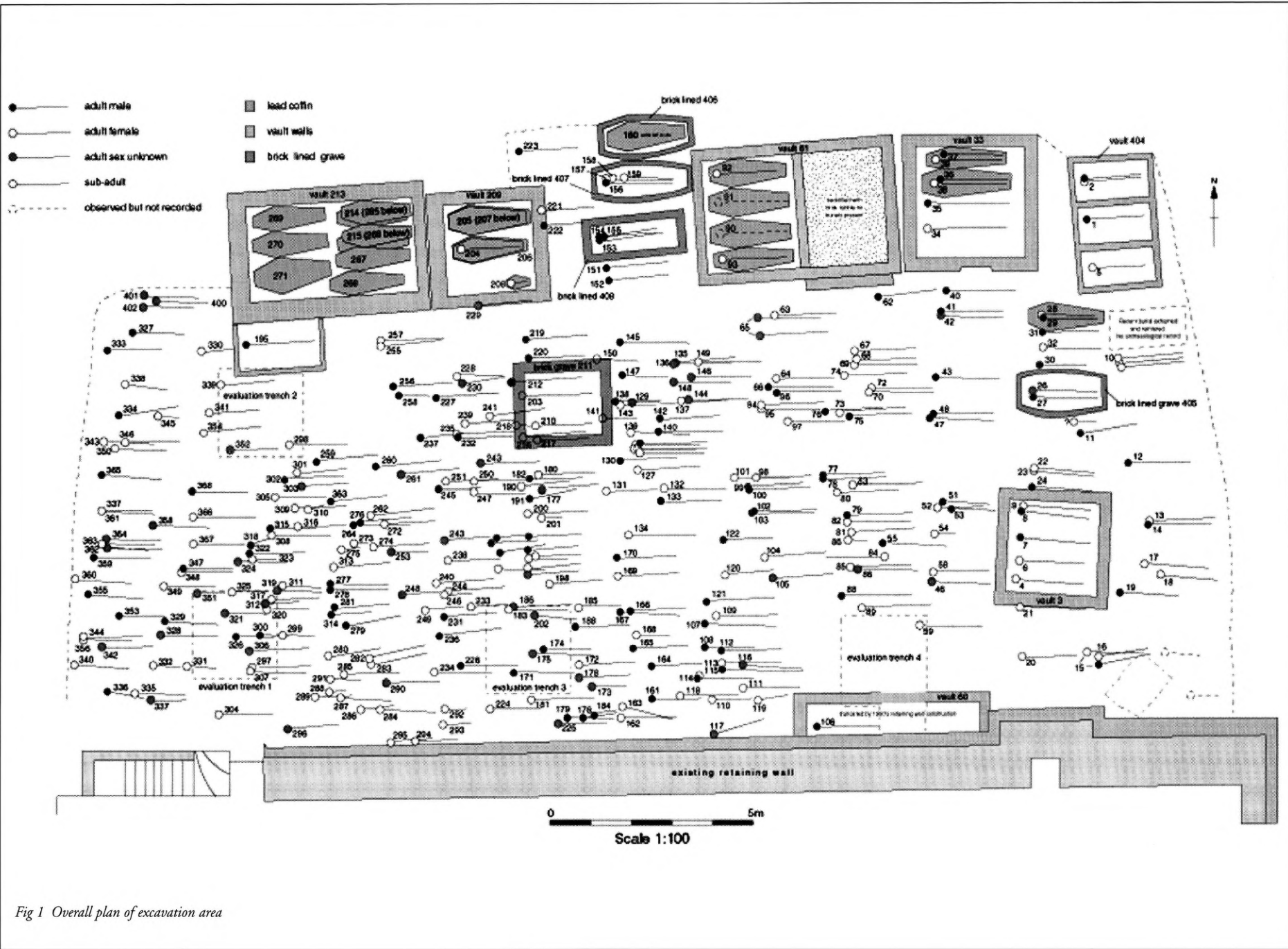


Fig 1 Overall plan of excavation area



Plate 1 View from top of tower

the church building through the ensuing centuries increased the probable size of this first church threefold it is thought to have developed southwards of its original foundation. A blocked northern window may be of Norman date (Pevsner 1974, 323). Two bays of the north arcade are 13th century (octagonal piers) and the bays further west are perpendicular. The tower is 15th century in date and was encased in brick in 1765 (Pevsner 1974, 323). In 1799 the original chancel was pulled down and a new one built, leaving only two Early English bays of the nave arcade.

The area to the north of the church (Plate 1), which included the site of the proposed development, is known to have been used as a cemetery throughout the 18th, 19th and 20th centuries and may also have been part of the medieval cemetery. The gravestones mainly dated from the 19th century, although there were a number of 18th-century examples.

A record of the churchyard memorials was begun in 1983 by members of the parish and this comprised transcripts of the wording on the headstones and various quantitative details and observations on the stones themselves although this does not include a photographic record (*Graveyard Schedule. St Bartholomew's Church, Penn, nr Wolverhampton*).

There is documentary evidence of 2526 burials within the churchyard as a whole for the period 1800-1900. Fifty four of these burials were known to be within the development area. In other words their presence was commemorated on headstones, although not necessarily by name plates on coffins. Conversely others who were not commemorated on headstones could be identified by the inscriptions on name plates.

The evaluation

Oxford Archaeology undertook a small evaluation within the footprint of the proposed new building in August and September 1994. This comprised four 2 m² trenches (see Fig 1), all of which were excavated and recorded to the level of natural stratigraphy. This was observed at 172.48 m OD on

the north side and between 171.94 and 173.17 m OD on the south side. Between 1-2 m of burial deposits were excavated in each trench. No evidence of earlier church foundations was recorded although a heavily truncated pit containing bell-founding material was identified. In addition, 14 medieval pottery sherds were redeposited in post-medieval grave fills. More than 20 burials dating to the 19th century were located in the four trenches, along with several earlier, undated burials. Three of the burials were associated with illegible iron name plates. Copper alloy fittings were also present. Brick-built vaults, also dating from the 19th century were located in the south-eastern and north-western areas of the development area (vaults 60 and 195, see Fig 1).

Based on the results of the evaluation it was estimated that the proposed development area was likely to contain anything from 250-500 burials and an unknown number of burial vaults.

Initially it was hoped that further work would comprise detailed excavation of the cemetery combined with similarly detailed osteological analysis. With this in mind the Oxford Archaeological Unit submitted a Written Scheme of Investigation in 1998. By this stage the Parochial Church Council had retained an Archaeological Consultant, so a very detailed Written Scheme of Investigation (WSI) was written in response to a similarly detailed Archaeological Brief. The original WSI (which ran to 8,500 words) had outlined a system of osteological recording which comprised both high- and low-resolution analysis of skeletal remains. After much negotiation between all interested parties it became apparent that, primarily for financial reasons, the PCC was unable to proceed in this manner.

From the outset I had serious reservations about how the proposed methodology would actually work in practice, and what, if any, archaeological and osteological information might be retrieved. However, it was clear by this stage that the level of archaeological input which I had originally outlined was certainly not going to go ahead. My reservations led me to reconsider my original justification for detailed recording at great length. This can be summarised as follows:

1. We were likely to excavate a skeletal sample comprising 250-500 individuals.
2. The evaluation had shown that skeletal preservation was likely to be very good.
3. The likelihood of encountering named individuals was high.

However in fact:

1. Only a small proportion of the cemetery was going to be affected so in reality my substantial assemblage was likely to represent a fairly small sample of the total burial population

2. If the sample was close to the 500 mark, many burials would be truncated and therefore incomplete.
3. All the name plaques encountered in the evaluation were illegible.;
4. It was a condition of the Faculty that nothing was to be removed from site whatever the level of recording.

The reality of the situation was inevitable: the graveyard would be cleared, and certainly without the level of recording desired by the author. Ultimately the work consisted of an archaeological watching brief combined with low-resolution osteological recording. This took place entirely on site over an eight week period alongside Necropolis, a company of exhumation contractors. Two archaeologists were present, one of whom was responsible for osteological recording, while the other dealt with the recording of stratigraphy, coffins and associated fittings etc. This was supplemented by short periods spent on site by the Project Manager and regular meetings with the Archaeological Consultant.

Original priorities, aims and methodology

Fieldwork aims

Some general aims were outlined as part of the original WSI and these remained valid at the commencement of work. However, our main concern was whether or not we would recover sufficient data to achieve them, even in part. General archaeological aims were defined as follows:

1. to collect data which will contribute to the understanding of the history and development of funeral trends;
2. to collect data which will contribute to the understanding of the demography of the small percentage of the population of the graveyard which is being disturbed;
3. to establish the stratigraphic sequence of burials;
4. to record vault structures and their contents in detail;
5. to identify any existing evidence for an earlier church structure;
6. to provide dating evidence for the surviving burials;
7. to recover evidence of burial rites and undertaking practices;
8. to determine the character and date range of the burials.

Although no evidence for an earlier church structure was revealed all the remaining aims have been achieved to some degree. The earliest burials appear to have been plain earth-cut examples, perhaps laid only in shrouds or in plain wooden coffins without fittings which subsequently decayed. These appear to have been superseded by wooden coffins with fittings, generally of iron, and less commonly brass.

Less common alternatives were single shell lead coffins or the much more elaborate triple-shell wood-lead-wood coffins, which were usually placed in brick-built shafts or family vaults. It has been possible to assign age and sex (adults only) estimates for the majority of the sample. The 3-D location of all burials and their relationship to one another has been recorded. All vaults and brick-built shaft graves along with their contents have been recorded in detail. Where possible burials have been dated on the basis of stratigraphic relationships, coffin fitting type and/or inscriptions on name plates or grave stones. With the exception of burial 84 the entire assemblage had been orientated west-east and laid in a supine extended position. A full description of every burial has been provided. Dating evidence has been recovered in a number of cases.

Fieldwork methodology

The job dictated that OA was in attendance on Necropolis rather than *vice versa*. However, detailed discussion of both contractors' requirements before the commencement of the project ensured that, for the most part, work progressed smoothly with only minimal delays. A site grid was set up by the exhumation contractors although it was agreed that OA would do the same (a slightly higher level of accuracy was desirable than was required by Necropolis). The exhumation contractors were responsible for the removal of memorials within the clearance area. A photographic and written record had already been made by members of the parish. The contractors intended to deal with these as work progressed. The memorials were reinstated along the length of a pathway through the northern portion of the churchyard.

The primary objective (of both contractors) was to clear the area of all archaeological remains down to natural and reinstate the archaeologically sterile soil. A possible bell-founding pit and a small quantity of medieval pottery was recovered during evaluation so it was considered possible that structural remains relating to an early phase of church construction would be encountered. In this event work would stop and the approach be reconsidered. In the event, the only non-burial features were a handful of possible pits or postholes which did not produce any finds.

Excavation followed the standard procedure employed by Necropolis as follows: soil was cleared in a grid pattern from east to west in a series of two m2 sections by a small digger machine operated by their employees under archaeological supervision. This was carried out in a series of strips starting at the east end and proceeding to the west. The spoil from successive pits was used to fill the previous one. The method employed is illustrated in Plate 1; at this point clearance is approximately 50% complete. Machine clearance continued until articulated skeletons/structures were encountered. The area was then made safe in order that the location and manner of the burial could be recorded. Every skeleton was 3-D located and recorded schematically on an overall site

plan (see Fig 1). The skeleton was then removed and osteologically recorded. After recording the skeletons were bagged for reburial with context numbers and identification tags where this information was known. Associated coffin fittings were also reburied with the relevant individuals.

It is important to emphasise that our approach was based on the premise that the unit for the purposes of recording would be the skeleton/coffin/associated fittings. Grave cuts, given that they were generally invisible, were to be discarded as an interpretative unit. The former method is very labour intensive and not necessarily that productive in a graveyard which has been intensively used over a long period of time, as grave cuts are often very difficult to define. Each skeleton was therefore assigned a single context number which also encompassed the coffin and associated fittings. Separate recording sheets with the same number were filled in for skeleton, coffin/and or fittings. Approximately 6-10 skeletons were removed per day and the osteologist present could easily carry out low-resolution recording of these within that time scale (or a combination of low- and high-resolution where desirable).

At least one brick-built burial vault was visible within the development area and a further two had been identified within evaluation trenches. The vaults were dismantled by Necropolis after their contents were recorded archaeologically. Where lead coffins survived intact these were archaeologically recorded prior to lifting and reburied by Necropolis. Only external features of sealed, or substantially sealed, lead coffins were recorded archaeologically.

Artefactual methodology

Wooden and lead coffins and any associated fittings, including nails, were recorded on the coffin recording sheet. All surviving coffin fittings were recorded by reference to the published corpus of material from Christ Church, Spitalfields (Reeve and Adams 1998). Where individual types could not be paralleled they were sketched or photographed as appropriate.

Osteological methodology

Low-resolution recording

The entire skeletal assemblage was subjected to low-resolution recording. Low-resolution skeletal recording included a skeletal and dental inventory, age and sex assessments, gross pathological observations, and basic metrical recording for use in the determination of stature and sex. The aim of the low-resolution analysis was to provide enough information to reconstruct the demography of the excavated sample.

High-resolution recording

Where time allowed named individuals (particularly related individuals) and those of intrinsic osteological interest were

recorded in more detail. The latter can be defined as those with unusual pathology, evidence of surgical or dental intervention and exceptionally good preservation. High-resolution recording (where time allowed) entailed the addition of detailed descriptions of pathology and differential diagnosis, additional metrical recording, and a study of non-metric traits.

Similar methodologies were applied to the skeletal assemblages from St Nicholas, Sevenoaks (Boyle and Keevill 1998) and the Quaker cemetery at London Road, Kingston-upon-Thames (Bashford and Pollard 1998; Start and Kirk 1998). At the former all burials within the church (approximately 500, not including any burials within the churchyard) were excavated while at the latter site a total of 497 burials were documented and 360 were excavated (72.4%). This is in marked contrast to the situation at St Bartholomew's where only 372 out of at least 2526 documented burials were excavated (14.73%).

Ideally all named individuals would be recorded in detail (ie subjected to high-resolution recording) and retained for future study. Named individuals are osteologically valuable. The fact that they are of known age and sex allows for the testing of the existing methods used by osteologists and the creation of new ones. However, the method outlined here provides broad demographic information such as age at death and sex of the individual as well as data on height and dental health. It gives us sufficient information to produce a general impression of some of the people of Penn in the 18th and 19th centuries and allows for comparison with a number of other post-medieval assemblages.

The evaluation indicated that it was not necessary to wash the skeletal material and dry brushing was employed instead.

The quantification and analysis of the data collected at St Bartholomew's has been compared to four relevant examples (St Nicholas, Sevenoaks; St Luke's, Islington; Christ Church, Spitalfields; London Road, Kingston-upon-Thames) in order to provide contemporaneous context.

Reburial

Provision had been made for reburial of all exhumed individuals in an area to the north of the development area. Digging took place at intervals under archaeological supervision and the area proved to be devoid of archaeology. A religious ceremony was conducted by the Revd Williams on each occasion.

Factual data and quantification

The stratigraphic record

The full range of possible remains was encountered. There were seven large brick built vaults, four brick-built single shaft vaults, 14 lead coffins, 131 wooden ones and the remaining 212 were apparently buried in earth-cut graves, presumably originally in shrouds. A number of these may

well be late medieval in date although no dating evidence was recovered and it is therefore impossible to be certain. The total number of burials recovered was towards the upper end of the range predicted on the basis of the evaluation results (250-500).

Burial practice and graveyard management

All headstones and ledger stones within the development area were recorded prior to the commencement of the exhumation. It is noteworthy that the majority of the individuals who appear in these inscriptions could not have been identified purely by recourse to the burial evidence. In other words name plates identifying them were not found. It is fair to say that in this sense they are archaeologically invisible.

Named individuals

It was possible to identify a total of 49 individuals through the inscriptions on their associated name plates. The earliest was William Pershouse who died in 1789. In some cases sections of the inscriptions were illegible. A total of 18 individuals were not examined osteologically either because coffins were sealed or the remains were fleshed.

It is noteworthy that in the case of older individuals the osteological ages arrived at were incorrect and individuals were assigned much younger ages (regularly around 20 years younger). In contrast assessment of sex was correct in every case (adults only; no attempt is made to sex sub-adults as the relevant morphological characteristics were not sufficiently developed).

Burial vaults and brick-lined shaft graves

A number of family vaults and shaft graves were clearly identifiable.

Vault 3

Vault 3 was a brick-built square structure located in the south-eastern corner of the site. The whole structure was two bricks thick, stretcher bond with occasional header courses to hold it together, a brick floor and a brick roof which arched west-east. It measured 2.20 x 2.20 x 1.50m. The entrance was located on the south side and had been blocked by a slab with the inscription 'Biddle 1811'. The internal walls were whitewashed and mortar candle-holders were set into each of the four corners of the vault. Burials 4 and 6 had been placed on bricks to elevate them from the floor. Burials 7, 8 and 9 were certainly identified as members of the Biddle family. Thomas Biddle was buried in 1811, presumably when the entrance slab was placed. Therefore the vault must have been reopened in 1818 and 1823 for the insertion of burials 7 and 9.

Burial 7 - Edward Biddle died 1818 Aged 64?

Burial 8 - Thomas Biddle Died June 2? 1811 aged 29

Burial 9 - ?dle ?6y 19th ? 1823 ?ea?

Vault 33

Vault 33 was a brick-built structure located at the northern edge of the development area. The whole structure was two bricks thick, stretcher bond with occasional header courses to hold it together, a brick floor and a brick roof which arched west-east. The internal walls were whitewashed and mortar candle-holders were set into the north and south walls. It measured 2.70 x 2.70 x 2.10m. The entrance was located on the south side. It was blocked by a single rough skin of brickwork and covered by a stone slab with the inscription 'Eld'. The structure contained burials 34, 35, 36, 37, 38 and 39. Coffins 36 and 37 were triple shelled wood and lead examples with outer fabric coverings. Both lead coffins had an incised cross hatched design. The later lead burials rested on bricks over the earlier wooden ones.

Burial 36 - John Eld died August 30th 1849 aged 61 years

Burial 37 - Sarah Eld died July 4th 1836 aged 75

Vault 60

Vault 60 was originally identified within evaluation trench 4. It was located in the south-eastern corner of the site and was truncated by the existing retaining wall constructed in the 1950s. The whole structure was two bricks thick, stretcher bond with occasional header courses to hold it together, a brick floor and a brick roof which arched north-south. The vault had been backfilled, presumably during the construction of the retaining wall. Burial 106 was located on the floor at the western end: only the lower half of the body survived and was identified as the Reverend John Bindney Marsh, who died in 1890 aged 86. A second set of disturbed coffin fittings were also recovered, presumably representing a burial removed in the 1950s.

Vault 61

Vault 61 was located immediately west of vault 33. It was a two-celled structure two bricks thick throughout with an east-west arched roof and white washed internal walls. Each of the 'cells' measured 2.70 x 1.90 x 1.70 m. The eastern cell had been completely filled with rubble and there were no burials. The western cell contained burials 90, 91, 92 and 93. A stone slab with the inscription 'Pershouse 1789' blocked the entrance. The inscription presumably commemorated William Pershouse who was buried in 1789. All the coffins were triple shelled wood and lead.

Burial 90 - Willm Pershouse Esq died 30th July 1789
Aged 38

Burial 91 - Mrs Elizabeth Pershouse died 27th July 1827
aged 84 years

Burial 93 - Ellen Pershouse H?idon died 11th March
1829 aged 70 years

Vault 209

Vault 209 was located west of vault 61, was two bricks thick throughout, with a west-east arched roof and mortar candle holders. It contained burials 204, 205, 206, 207 and 208. Burials 204 and 205 rested on two wooden supports above the other burials. The entrance was located on the south side, measuring 2.15 x 2.10 x 1.60m. It was blocked by a stone slab without an inscription. Lead coffin 207 had an incised cross-hatch design.

Burial 204 - Sarah Willington died April 10th 1849 aged 76 years

Burial 205 - Edward Willington Esq died Sept 6th 1840 aged 77 years

Structure 211 (plate 6)

Structure 211, capped by ledger stone 9.8 and 9.8a. It was a rectangular structure measuring 2.30 x 1.60m with an arch in each of the four walls. It was single skin brick-built comprising 11 courses and was of rather rough construction. The inscription on ledger stone 9.8 read as follows:

'Sacred to the memory of Thomas Chinner late of Kingswinford who departed this life September the 19th 1829 aged 65 yrs. Also Ann, his wife, who departed this life July 28th 1830 aged 76 yrs.'

It is noteworthy that the age at death of Thomas Chinner is recorded as 68 years in the burial register. The inscription on ledger stone 9.8a was illegible. It is thought most likely that burial 210 was associated with this structure. All the others are earlier in date. Burial 210 was an adult female aged upwards of 50 years, so could conceivably have been Ann Chinner.

Vault 213

Vault 213 was located immediately west of vault 209. It measured 4.10 x 2.20m and had two levels. The south facing entrance had an elaborate doorway arch. The lower level contained burials 265-271. A floor of large slate slabs was laid above these burials supported on iron bars, some set into the north and south walls with others resting on bricks. Coffins 265-271 were all triple-shell lead and wood coffins with elaborate brass fittings. Traces of the outer fabric covering survived on coffin 267. The remains of a wreath lay on top of coffin 266. All seven burials could be identified by the inscriptions on the name plates as follows:

Burial 265 - Elizabeth Mills, died January 26th 1837 aged 86 years

Burial 266 - Ann ? wife of Wm Th? was born Dec 1773 married June 12th 1793 and died December 21st 1806

Burial 267 - William Thacker died June 25th 1854 aged 87 years

Burial 268 - Robert Thacker died April 27th aged 67 years

Burial 269 - Ellen Pershouse Philips, wife of Thomas Moss Philips of Earlswood, Penn, died 6th June aged 59 years

Burial 270 - Thomas Moss? Philips born April 26th 1803 died February 24th 1877

Burial 271 - Colonel William F. Thacker died 11th? December 1883 or 5 aged 45 years

Burials 214 and 215 were laid on this slate floor. Burial 214 was Ann Thacker, born at Long Salop, 25th January 1831, died at Ostend September 10th 1892. Burial 215 was Jane Emily Philips who died April 6th 1897 aged 63 years. Both coffins were elaborate triple shell lead and wood coffins. The remains of five funeral wreaths were associated with burial 215. Floral tributes were recovered from a number of 18th- and 19th-century burials at St Nicholas, Sevenoaks (Boyle and Keevill 1998).

Vault 409

Vault 409 was a three celled structure. The northern cell contained two burials (2 and 337) while the others contained one each (burials 1 and 5).

Four brick built shaft graves were excavated (405-408). Only 406 contained a single burial in a lead coffin. Structure 405 contained two burials, 407 contained four and 408 contained three burials (Fig 1).

Coffins and associated fittings

In general where post-medieval coffins are recovered with fittings these generally comprise some, or all, of the following: 1 name plate, 1-2 lid motifs, 8 grip-plates and grips and a number of escutcheons.

A total of 162 coffins were represented by fittings, a further two by nails and wood. The quality of the surviving 118 wooden coffins was variable ranging from traces only to complete examples. Eighteen coffins were made of lead. All were of triple shell - wood/lead/wood construction and traces of an outer textile covering survived on a number of them. No less than 121 coffins with fittings could be dated by reference to the Christ Church, Spitalfields corpus and the date ranges appear in Table 2. Burials 28 and 29 were both in lead coffins which had been placed one on top of the other in an earth cut grave.

A number of types could not be identified by reference to the Christ Church, Spitalfields corpus. Sketches of these have been examined by Melanie Richmond who is currently undertaking a PhD on post-medieval coffin furniture and the following paragraphs are based on her comments.

The 'bar' grips from coffins 15, 195, 217 and 325 are broadly comparable with Christ Church, Spitalfields type 1 (1747-1847). However, as coffins 195 and 271 have dates of 1899 and 1883 respectively there is clear evidence for extending this date range. Also, these grips are stylistically more 'modern' and are most common today.

The assemblage from St Bartholomew's includes 6 new 'shield' type name plates (coffins 36, 160, 308 and 327). This is interesting as Christ Church, Spitalfields only had one shield type and St Luke's, Islington (Boyle and Witkin in preparation) only produced one further type. This may be indicative of local stylistic preferences or a local manufacturing bias: presumably most of the coffin furniture was manufactured in Birmingham.

A total of ten coffins have associated fittings which can be paralleled at Christ Church but they have a more recent date of deposition (coffins 36, 37, 139, 156, 158, 204, 219, 267, 302, 327).

Coffin preservation

It is assumed where coffin evidence is completely lacking that all traces of the wood had decayed or that these individuals were merely buried in shrouds.

Place of death

The body of Ann Thacker who died in Ostend was brought back to Penn for burial in brick structure 213. This fact was recorded on her coffin plate.

Family relationships

Inscriptions referring to women tended to conform to the common practice of describing her relationship to her nearest male relative, for example, Ann, wife of William Thacker, dates of birth, marriage and death are given, along with comments such as daughter of, mother of etc.

Mary and Emily Walton both exhibited congenital absence of the second incisors (see below for further discussion of this trait).

Orientation and body position

All the burials were orientated broadly west-east and lying in a supine extended position with a single notable exception. Burial 84 was an adult female aged between 30 and 40 years who was also supine extended but buried in an east-west position. There was no evidence for a coffin. The partial skeleton of a neonate (newborn infant), 398 was identified in the pelvic area of the adult female.

The burial population

All osteological recording was undertaken without any knowledge of biographical details in order to evaluate the effectiveness of the current ageing methods. Low resolution analysis has recently been carried out in a small number of archaeological contexts but usually in combination with high resolution recording (for example St Nicholas, Sevenoaks and the Quaker burial ground at London Road, Kingston-upon-Thames) and not generally in attendance on exhumation contractors.

Preservation and completeness

Preservation and completeness was extremely variable. There was at least one 20th -century individual in a very plain wooden coffin, completely skeletal, wearing a plastic (?bakelite) head band. Some burials within lead coffins were skeletal while others were fleshed.

Age and sex

| | St Bartholomew's | St Luke's |
|-----------------------|-------------------------|-------------------|
| Age range | No of individuals | No of individuals |
| Foetus (before birth) | 1 | 3 |
| Neonate (birth-11 m) | 3 | 35 |
| Infant 1 (1-5 y) | 13 | 52 |
| Infant 2 (6-11 y) | 17 | 19 |
| Juvenile (12-17 y) | 22 | 12 |
| Total | 58 | 121 |

A total of 372 individuals were excavated comprising 100 males, 25 probable males, 102 females, 21 probable females, 45 adults of uncertain sex, 58 subadults (below the age of 16) and 21 for whom no osteological data was available. The latter were recovered in sealed lead coffins which were immediately reburied.

It is clear that the vast majority of the assemblage comprises adult individuals (314, 84.4%). This is comparable with St Luke's, Islington where 86.4% of the assemblage were adult individuals (Table 1).

Age at death ranged from newborn to 89 years. More than half of the adult assemblage is aged upwards of 40 years (162 individuals, 51.6%). It is noteworthy that where age at death is known, osteological ageing is generally wrong; there was a marked tendency to underage. There is no doubt that inaccuracy increased with the age of the individual. Dental wear was the least accurate method.

The majority of subadults died aged upwards of 5 years (39 individuals, 71%). This is in marked contrast to the urban assemblage from St Luke's, Islington where 74.4% of subadults died aged 5 years or less (Boyle and Witkin in preparation).

A number of metric measurements are regularly taken to assist in the assessment of sex. One of these is the diameter of the head of the femur or thigh bone. The range for 91 males was 41.2-58 mm and for 102 females, 33.6-48.6 mm. It is clear then that there is considerable overlap between the sexes.

Stature

Stature was calculated for 90 males, 93 females and 2 adults of uncertain sex. Comparisons have been made with post-medieval assemblages from St Nicholas, Sevenoaks (Boyle and Keevill 1998, 93), Christ Church, Spitalfields (Molleson and Cox 1993, 24) and the Quaker burial ground at London Road, Kingston-upon-Thames (Start and Kirk 1998, 170).

The average height of individuals at St Bartholomew's (males 5'9" and females 5'3") was most similar to those from St Nicholas, Sevenoaks (males 5'8" and females 5'4"). This is almost certainly not coincidental as both groups of individuals lived in a predominantly rural, and therefore healthier, environment.

In addition all the burials excavated at St Nicholas had been buried within the church so it can probably be assumed that they represented a wealthier section of the community than those buried outside in the churchyard.

| | ? | M | F |
|-------------------------|-------------|---------------|---------------|
| St Bartholomew's | | | |
| Average cms | 158.4 | 175.2 | 160.7 |
| Range cms | 149.7-166.8 | 145.6-185 | 142.8-183.9 |
| Average inches | 5'2" | 5'9" | 5'3" |
| Range inches | 4'10"-5'6" | 4'9"-6'1" | 4'8"-6' |
| London Road | | | |
| Average cms | 166.2 | 168.7 | 160.3 |
| Range cms | 152-186 | 154.5-190 | 139.5-174.5 |
| Average inches | 5'5" | 5'6" | 5'4" |
| Range inches | 5'-6'1" | 5'1"-6'2" | 4'6"-5'6" |
| St Nicholas | | | |
| Average cms | | 173 | 161 |
| Range cms | | 162-183 | 149-172 |
| Average inches | | 5'8" | 5'3" |
| Range inches | | 5'4"-6' | 5'3"-5'8" |
| Christ Church* | | | |
| Average cms | | 167.91-170.27 | 154.04-158.52 |
| Range cms | | | |
| Average inches | | 5'6" | 5'1" |
| Range inches | | | |

* Christ Church average was variable depending on the formula used.

Dental health

| | Ante-mortem loss | | Caries | | Abscess | |
|-------------------------|------------------|-------------|---------------|-------------|-------------|-------------|
| | No affected | No observed | No affected | No observed | No affected | No observed |
| St Bartholomew's | 1671 38.4% | 4349 | 166 8.1% | 2047 | 3 0.07% | 4334 |
| London Road | 1436 34.6% | 4149 | 210 5.4% | 3858 | 3 0.07% | |
| St Nicholas | 529 37.95% | 1394 | 113 14.08% | 803 | 5 0.41% | |
| Christ Church | 341 15.94% | 2140 | 385 17.99% | 2140 | | |

Standard dental recording was undertaken for all burials so the level of ante-mortem loss and the prevalence of dental disease are a true reflection of the dental health of the excavated sample. Ante-mortem tooth loss was comparable with St Nicholas, though less so with London Road and more than twice the rate at Christ Church. Caries rate however was more comparable with London Road and considerably less than St Nicholas and Christ Church. Very few abscesses were recorded at St Bartholomew's, London Road and St Nicholas (no data for Christ Church).

Skeletal pathology

The value of the data relating to disease is questionable as it was only recorded incidentally and presence/absence of bones was not systematically recorded. There are clearly instances where skeletal pathology would have been mis-diagnosed or in fact missed altogether. However, some interesting factors have emerged.

| | St Bartholomew's | St Luke's | London Road |
|-----------------------------|-------------------|-------------------|-------------------|
| Pathological Classification | No of individuals | No of individuals | No of individuals |
| Joint | 66 | 458 | 46 |
| Trauma | 15 | 53 | 13 |
| Infective | | 95 | 12 |
| Congenital | | 4 | 10 |
| Metabolic | 2 | 68 | 8 |

Surgical intervention was indicated by three skulls whose upper portions or caps had been removed (38, 180 and 301) and an amputation (315). It is likely that these skulls were treated in this manner as part of post-mortem procedures. Burial 38 was a child aged 13-14 years who was located in the Eld family vault. Burial 315 who was an adult male had his left leg amputated at the midshaft of the femur (thigh bone). Bony growth over the cut end of the bone was partial at the time of death so we can argue that the portion of leg was removed not too long before death. He was identified as James Crutchley who died age 39.

The skeleton of Edward Ledbetter, burial 152, who died in 1836 had bowed tibiae, possibly indicative of rickets or vitamin D deficiency suffered in childhood.

All other skeletal pathology was unremarkable, comprising degenerative joint disease, sacro-iliac ankylosis and 12 fractures, the lower leg (tibia and/or fibula) being affected in five cases.

In general the population appears to have been a very healthy one with many individuals living well into old age. Even those individuals who did live into old age showed few signs of degeneration.

Non-metric traits

Non-metric or discontinuous traits are developmental anomalies which are exhibited by some skeletons. There is a prevailing assumption that some at least of these traits are inherited. The value of the data on non-metric traits as far as this particular assemblage is concerned however, is questionable as their occurrence was only recorded incidentally and presence/absence of bones was not systematically recorded.

It would have been a useful exercise to record the incidence of non-metric traits for the named sample to determine whether or not related individuals shared any of them. However, this was not possible because the

methodology demanded that burials were reinterred in the churchyard as quickly as possible.

Mary and Emily Walton both exhibited congenital absence of the second incisors. Absence of these particular teeth rarely reaches frequencies of more than a few percent and it has long been asserted that this agenesis is inherited (Hillson 1996, 113).

Discussion

The health and wealth of the population

In general terms the sample population appears to have been a healthy one which lived well into old age. Skeletal pathology was occasional, and this included degenerative joint disease and trauma. It is noteworthy that many of the coffin fittings were made of brass rather than iron, perhaps suggesting a degree of wealth. The statistician William Farr talking about England noted in 1840 that life expectancies were up to 20 years higher in rural districts compared with the worst urban areas (Woods and Woodward 1984).

Although it is traditionally assumed that burials within churchyards are generally less wealthy than those buried inside the church, at St Bartholomew's a number of wealthy burials were revealed, for example all the elaborate triple-shell wood-lead-wood coffins within vault 213, possibly because there was insufficient room remaining within the church itself.

There is evidence during the 18th century for increasing affluence, for at least some individuals, in the form of both personal memorials and alterations to the church building. The memorials are Peter Payton 1771, T Bradney 1782, W Pershouse 1789 and John Marsh 1795. There is also a fine memorial to Anne Bache Sedgwick who died in 1719 aged only a few months. Not everyone was similarly wealthy. There is an entry in the register on 25th March 1750 when a foundling was baptised Mary Penn. The vicar commented:

'This child was found tied up in a cloth and hung to the ring of the south door of Penn Church about 8 o'clock one night by Willm. Baker as he was coming out of the church after ringing of the Curfew Bell.'

The baby died on April 1st and was buried in the churchyard.

On the west wall at the back of the church there is a stone dating to 1734 which provides an account of Richard Evens' care for the poor householders of Penn. He left instructions for the occupant of his farm in Pennwood Lane to pay £2 each year to provide 2d loaves. He also left Poors' Land and Dead Land's Gravepiece which together yielded £6. Mrs Ellen Pershouse was partly responsible for the provision of a new chancel in 1799.

Conclusions

In a recent paper summarising the results of a questionnaire on the excavation and post-excavation of human remains in Britain over the preceding two years McKinley (2001, 4) stated that the majority of archaeological interventions which revealed human remains comprised watching briefs (47% of English sites). Immediate reburial after excavation occurred at 22% of sites and reburial after analysis in 9%; all were medieval or post-medieval cemetery sites and most investigations represented watching briefs or evaluations. The reburial of Christian remains was also observed ten years ago, but the numbers involved have almost doubled.

While it is not desirable that this trend continues unabated archaeologists must be able to articulate the relative value of collections of human remains, and to justify both the cost of analysis and storage when this falls on others, and their need for access to this material in the short or long term (Elders 2002, 19).

Contrary to initial expectations and within the constraints of the methodology it has been possible to recover a considerable amount of useful and interesting information relating to the 18th- and 19th-century population of the town. It has been possible to make detailed comparisons with a number of similar, and contrasting post-medieval assemblages. Furthermore I would suggest that it is an approach that ought to be considered in similar situations where detailed excavation and recording proves impossible / unjustifiable for a number of reasons.

The wealth of data that has been recovered makes it clear that the project was worthwhile, for all interested parties and there were many who had vested interests. The author was particularly thrilled by the enthusiasm of many of the parishioners who were keen to find out more about the archaeological aspect of the work at every stage. The church has been transforming both inside and out for at least 700 years primarily to meet the changing needs of the parishioners and the new extension should be seen as a continuation of this process.

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