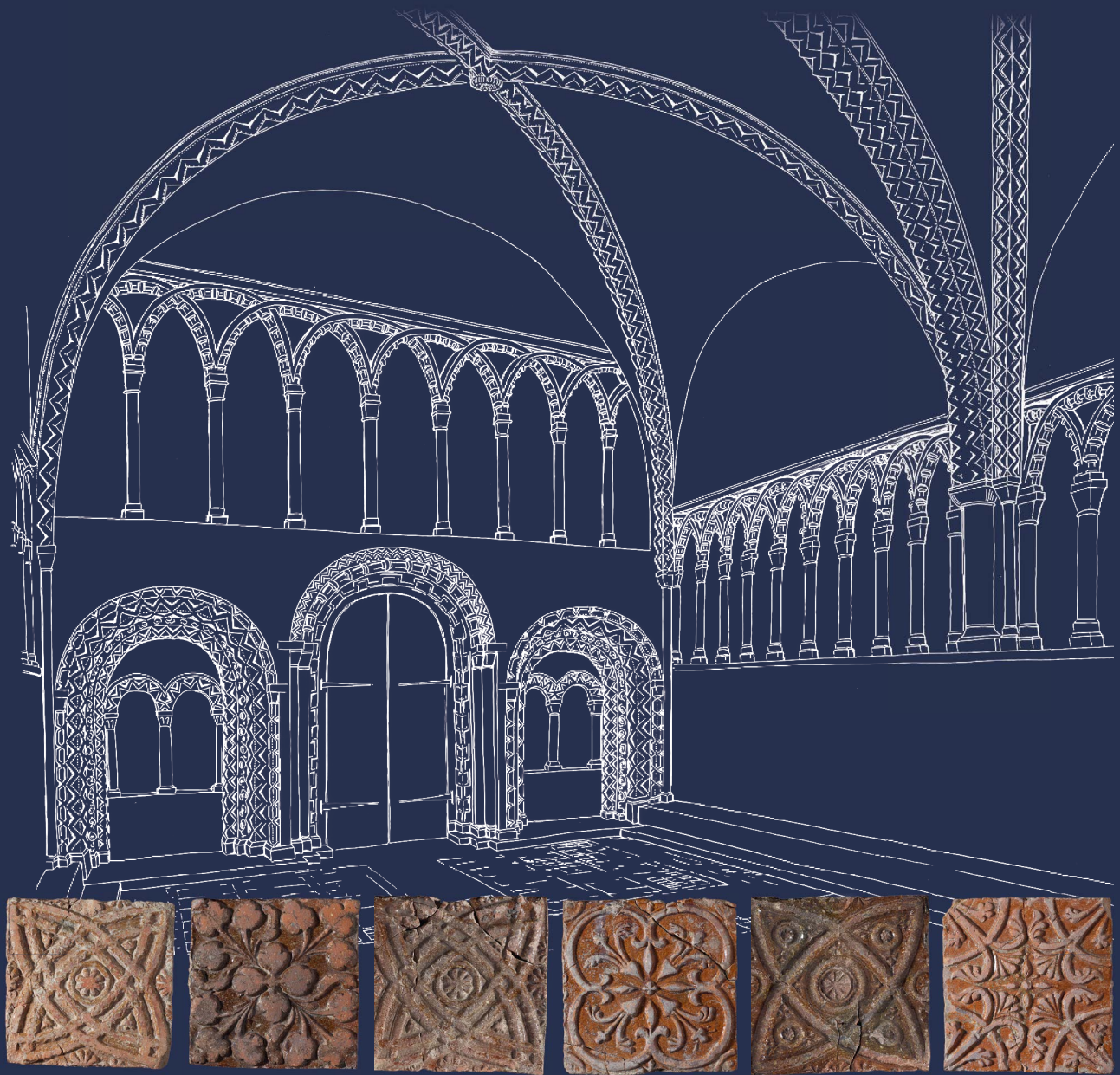
ST ALBANS ABBEY

THE EXCAVATION OF THE CHAPTER HOUSE 1978



edited by

Martin Biddle, †Birthe Kjølbye-Biddle,
Megan Kirkpatrick, and Francis M. Morris

ARCHAEOPRESS

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Martin Biddle, †Birthe Kjølbye-Biddle, Megan Kirkpatrick, and Francis M. Morris

with contributions by

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Cover: Reconstruction of the third (rectangular) chapter house. RDFT Types A, B, C, D2, D3 and E (composite reconstruction from multiple images).

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In memory of Peter Clement Moore

dean of St Albans 1973–93

instigator, supporter, and friend

GENERAL EDITOR'S PREFACE

The excavation of the site of the medieval chapter house of St Albans Abbey took place in 1978 in response to the impending construction of a new chapter house, on the site of its medieval predecessor demolished following the suppression of the abbey in the sixteenth century.

The then dean of St Albans, Dr Peter Moore, and the Abbey Chapter had asked Andrew Anderson, the celebrated ecclesiastical architect, to design a new chapter house on the site of the previous building, but the site of the earlier chapter house and its burials and any earlier features had first to be fully investigated. Arrangements were made for an excavation which lasted from May into the autumn of 1978. As the then director of the Museum of the University of Pennsylvania, I oversaw the work along with my late wife, Birthe Kjølbye-Biddle, who wrote much of the present book.

The creation of memorial churches over the graves of saints outside the walls of Roman cities is commonplace in the world of late antiquity. One has only to think of St Peter's in Rome, or St Paul's without the Walls, but in Britain, no single case is yet known, other than at St Albans. There is no reason to doubt that the late Roman cemetery immediately to the south of and extending under the nave of the present abbey church is the place where Alban was buried and that the nave of the present abbey stands on the site of his grave and of the burials of his contemporaries.

Enigmatic finds had long revealed that this early Christian site on the hill, now dominated by the great mass of the Norman abbey church, is one of the most important to be studied for the history of early England. In just four short months our volunteers uncovered fragments of some of the decorated floor tiles of the Anglo-Saxon abbey and associated graves, along with the magnificent floor of relief-decorated tiles of the medieval chapter house, and the graves of sixteen known figures of the late eleventh-to fifteenth-century abbey, including eleven abbots.

I am particularly grateful to St Albans Cathedral for their unwavering support and to my co-editors, Megan Kirkpatrick and Francis Morris, for their unstinting help in seeing this volume through to publication.

Martin Biddle
Summertown
15 February 2024

ACKNOWLEDGEMENTS

The 1978 excavation of the chapter house at St Albans shone a light on the Cathedral's rich past and the significance of the findings was immediately recognized. Given the richness of the material, this volume has been in preparation for quite some time and many people have contributed to its completion. The editors are indebted for their support, both great and small, especially to the diggers and site supervisors who were instrumental at the very beginning of this project.

Thanks are especially owed to the contributors who have produced such carefully researched work and who offered helpful editorial suggestions over the years. Much of the initial work on the volume was undertaken by Birthe Kjølbye-Biddle and more recently her work has been revised and added to by Megan Kirkpatrick and Francis Morris. The illustrations have been carefully prepared by Hamish Roberton and Vicki Herring.

We owe much to the Dean and Chapter of St Albans Cathedral who have provided support and inspiration along the way. Special thanks are owed to the Friends of St Albans Cathedral who have supported the publication of this book from its early days. Julia Low's and Ailsa Herbert's patience and willingness to grapple with the most essential and often complicated questions, ranging from the academic, to the routinely practical, is gratefully acknowledged. We are grateful too to the Cathedral Archive Team who have supported this work, to David Kelsall especially. Members of The Fabric Advisory Committee have been devoted in their support.

We are very grateful to our three external readers for undertaking the task with every attention to detail and much enthusiasm. Our copyeditor, Sarah Thomas, has worked hard to ensure consistency across the text, illustrations, and tables. No small task. Our thanks are also gratefully given to Clare Chapman who has offered invaluable support and advice over the years, patiently and generously. The team at Archaeopress have, as is their standard, been brilliant to work with, adeptly dealing with all the complexities of a multi-faceted volume and always with enthusiasm and patience. Particular thanks are owed to Mike Schurer of Archeopress for his careful and kind guidance.

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LIST OF ABBREVIATIONS

AC	Compton (Lord Alwyne F. Compton) collection of tile tracings in the Society of Antiquaries, London.
BAR	British Archaeological Report
BL	British Library
BM	British Museum
BM Cat	Eames 1980
BW	Williamson 1889 and Williamson 1891
CK	Carson, Hill and Kent 1960b
CM	*Matthaei Parisiensis monachi Sancti Albani Chronica majora*, ed. H. R. Luard, 7 vols, Rolls Series, 57 (1872–83)
CSP Dom.	*Calendar of State Papers, Domestic Series*, Public Record Office
d.	died
ESC	Seaby and Rayner 1974
ex.	number of examples
F.	Feature number
fl.	floruit.
F.ph.	Final phase
G.	Grave number
Gesta Abbat.	*Gesta abbatum monasterii Sancti Albani, a Thoma Walsingham, regnante Ricardo Secundo, compilate*, ed. H. T. Riley, 3 vols, Rolls Series, 28/4 (1866–9)
GLl	Greatest Lateral Length
GR	William of Malmesbury, *Gesta regum Anglorum*
grs	grains
HA	*Matthaei Parisiensis, monachi Sancti Albani, historia Anglorum: sive, ut vulgo dicitur, Historia minor; item ejusdem abbreviation chronicorum Angliae*, ed. F. Maddan, 3 vols, Rolls Series, 44 (1866–9)
HE	*Bede's Ecclesiastical History of the English People*, eds Colgrave and Mynors (Oxford, 1969)
HK	Carson, Hill, and Kent 1960a
MCE	Spink & Son Ltd. 1950
MLGB	N. R. Ker, *Medieval libraries of Great Britain: A list of surviving books*, Royal Historical Society, Guides and Handbooks, 3 (2nd edn, London, 1964)
mm	millimetres
MOL	Museum of London
MWS	Mandible Wear Stages
ND1	BL, MS Cotton Nero D I, St Albans Abbey, *Gesta abbatum*
ND7	BL, MS Cotton Nero D VII, St Albans Abbey, book of benefactors
NISP	Number of Identified Species Per Taxon

Norweb	Thompson and Dickinson 1992
LDM	Large Domestic Animals
P	Peck 1964
pm	privy mark
P.ph.	Provisional phase
PUE	*Papsturkunden in England*, ed. W. Holtzmann, 3 vols. (Abhandlungen der Akademie de Wissenschaften in Gottingen, Phil.-hist, Klasse, Neue Folge, Bd. Xxv.1, and Dritte Folge, No. 14, 15, 33 Berlin, 1930–5, and Gottingen, 1952)
RA	*Registrum Abbatiae Johannis Whethamstede abbatis monasterii sancti Albani iterum susceptae; Roberto Blackeney capellano quondam ascriptum*, ed. H. T. Riley, Rolls Series, 28 (London, 1871–2)
RCHM St Albans	Royal Commission on Historical Monuments, *A Guide to Saint Albans Cathedral* (London, 1982)
RDFT	Relief-decorated floor tiles
RIC	Mattingly, Sydenham, *et al.* 1923–94
RF	Recorded Find number
RS	Rolls Series: see under RS and year of publication in the bibliography
RW(1)	*Rogeri de Wendover Chronica sive flores historiarum*, ed. H. O. Coxe, English Historical Society, 5 vols (London, 1841–4)
RW(2)	*Rogeri de Wendover Liber qui dicitur Flores historiarum ab Anno Domini MCLIV annoque Henrici Anglorum regis secondi primo*, ed. H. G. Hewlett, 3 vols, Rolls Series, 83 (1886–9)
SAA	St Albans Abbey
SABMS	St Albans Borough Museums Service
SAHAAS	St Albans and Hertfordshire Architectural and Archaeological Society
SAM	St Albans Museum
sw	slightly worn
T.	Tile number
Tr.	Trench number
W.	Wall number
VAM	Victoria and Albert Museum

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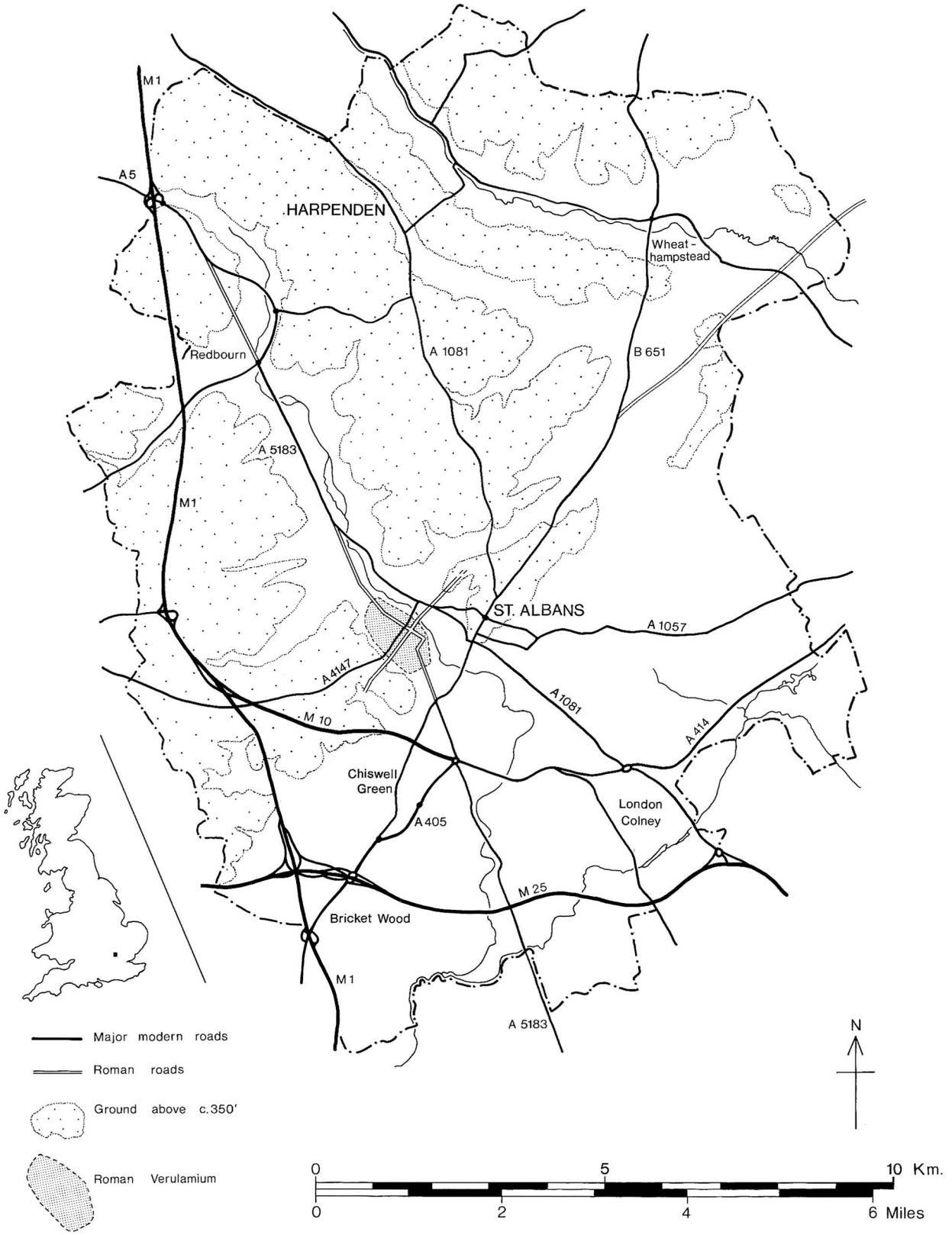
PART 1. INTRODUCTION



Illus. 1.1.1. St Albans in the context of Hertfordshire.

PART 1

1. INTRODUCTION

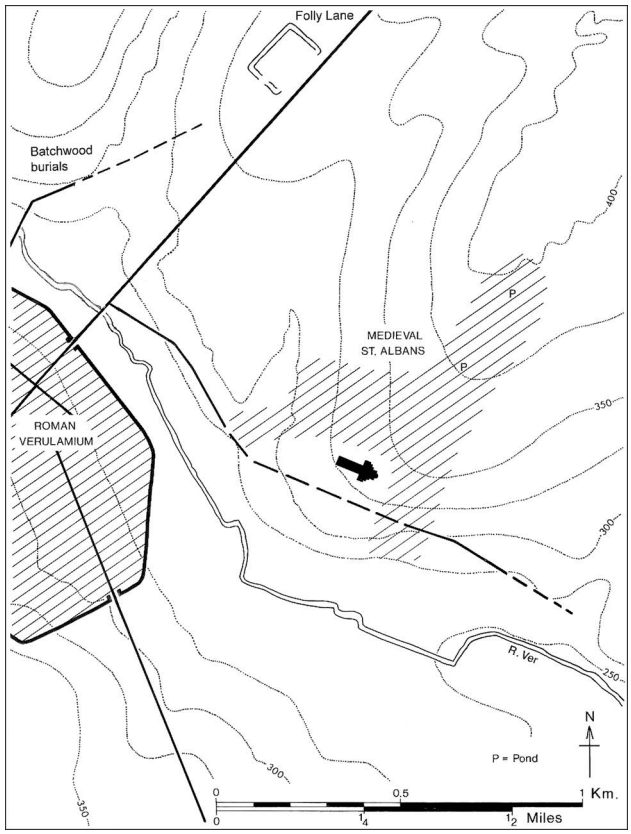
by MARTIN BIDDLE *and* MEGAN KIRKPATRICK

This book is about the excavation in 1978 of the site of the chapter house of St Albans Abbey, a medieval building second in importance only to the abbey church itself, the place where monks who had made their solemn profession met daily to conduct the formal business of their abbey's spiritual and secular affairs.

The origins and development of the abbey

The origins of the medieval abbey lie much further in the past, in the time of Roman Verulamium, the third largest town of Roman Britain (Illus 1.1.1 and 1.1.2). Known officially from about the middle of the first century as a *municipium*, a chartered town whose inhabitants enjoyed the privileges and protections of citizenship, Verulamium was only smaller than London, the largest city, and Colchester, *Colonia Claudia Victricensis*, the colonial capital.[1] There were extensive Roman cemeteries outside all four gates of Verulamium (Illus. 1.1.3A), including a cemetery on the hill to the east, where the abbey of St Albans [*sic*] now stands.

The early history of the abbey is the history of the martyrium of Alban. Alban, a Christian martyr in Roman Britain, was executed most probably during the time of the great persecution of Christians under Diocletian at the beginning of the fourth century.[2] The earliest reference to him is in 429 when the bishops Germanus of Auxerre and Lupus of Troyes were sent to Britain to combat the heresy of Pelagius and visited the *basilica* of Alban. Constantius of Lyons in his life of Germanus, written *c.* 460–80, records that at the end of their mission 'the priests went to the tomb of the blessed martyr Alban to give thanks through him to God'.[3] Constantius ordered Alban's tomb to be opened and took up some dust from the place which seems also to have been supposed to be that of the martyrdom itself.[4] The place of execution has never clearly been distinguished in St Albans tradition from the place of burial, but the two sites are most unlikely

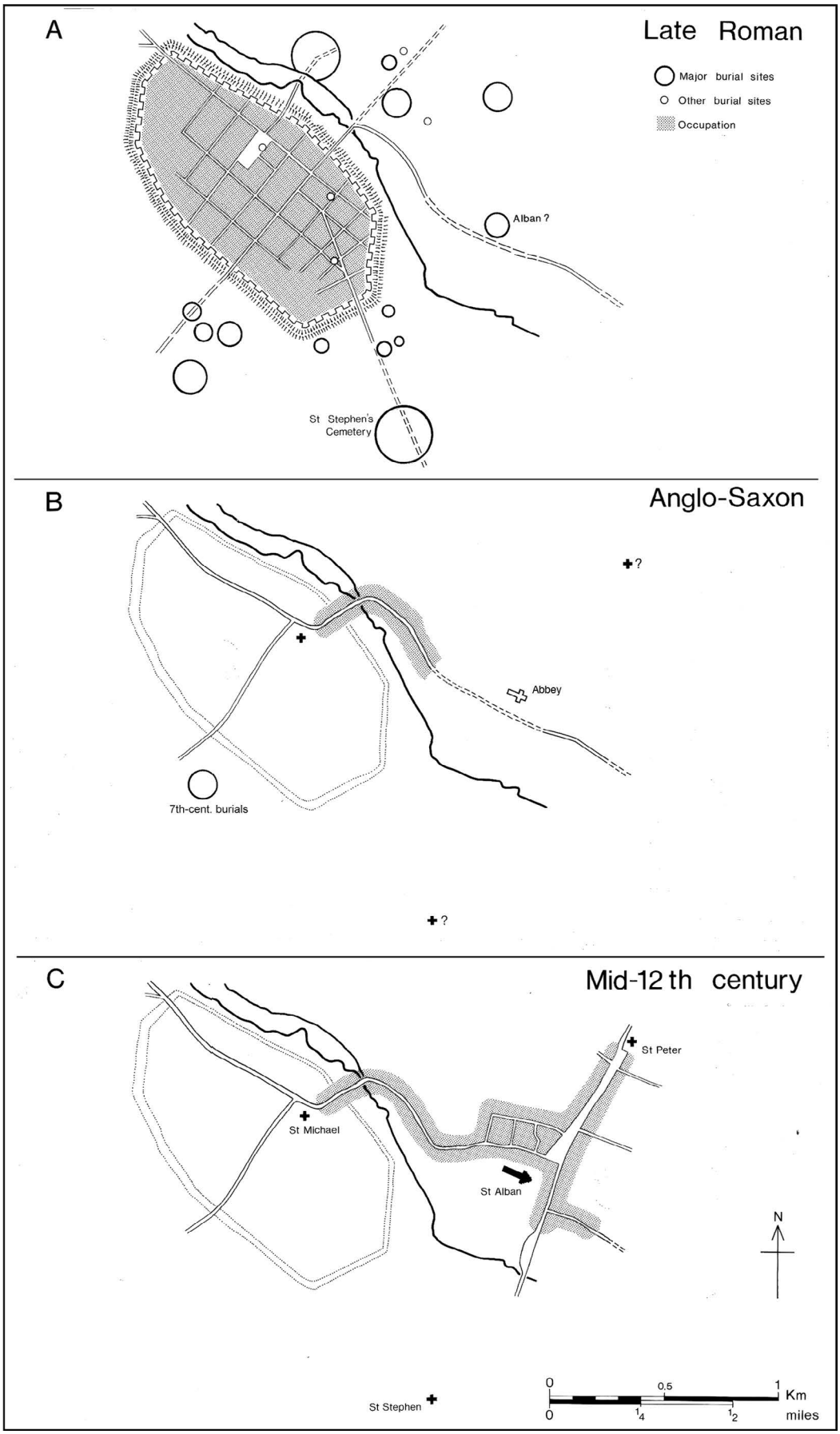


Illus. 1.1.2. The abbey in the context of Roman Verulamium and medieval St Albans.

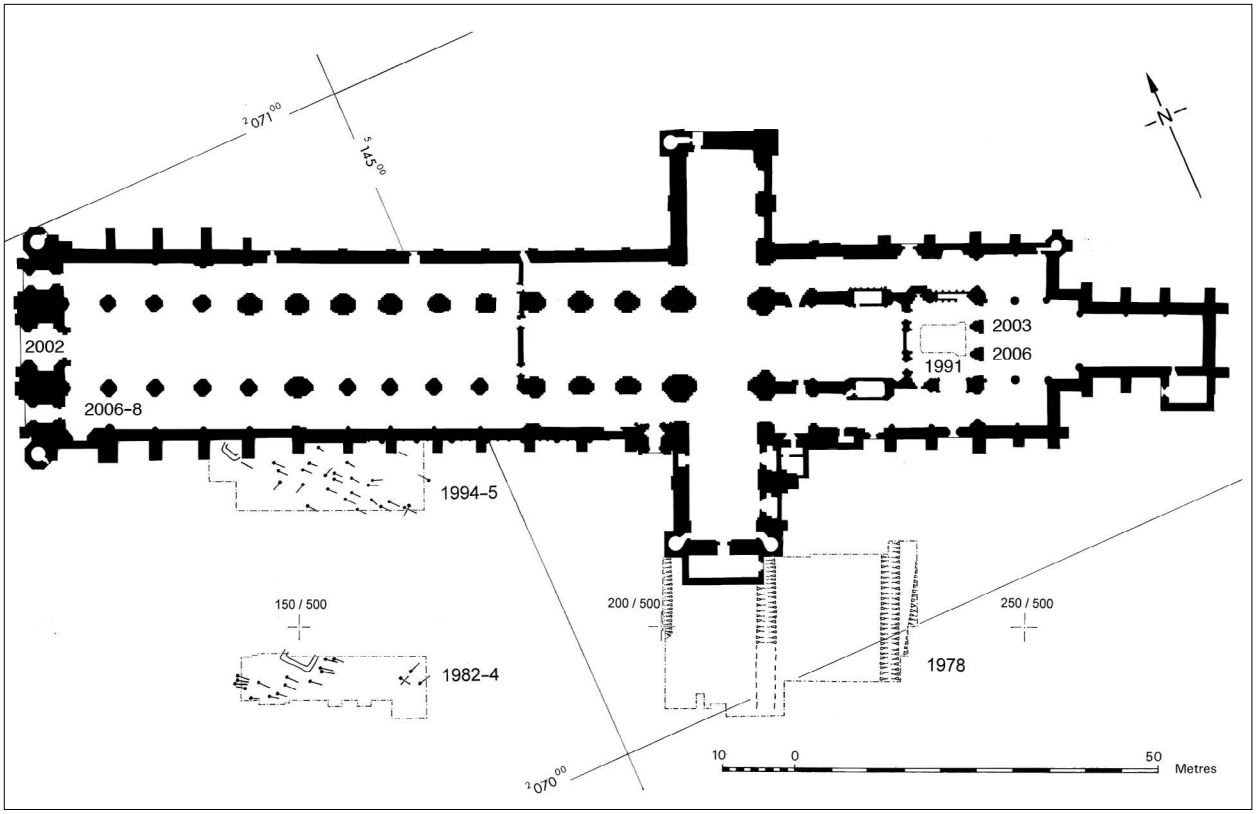
to have been the same and the place of execution was possibly at Folly Lane, on the hill to the north of the abbey;[5] the historian Bede, writing before 735, placed the martyrdom *iuxta ciuitatem Uerolamium*,[6] 'next to the city of Verulamium'.

The site of the burial is however associated with the area of the abbey (Illus 1.1.2 and 1.1.3A–C) and now that excavation has shown that there was a late Roman cemetery immediately to the south of and clearly extending under the nave of the present abbey church (Illus. 1.1.4), there seems no reason to doubt that this is the place where Alban was buried and that the nave of

[1] Tacitus XIV, 33.
[2] See Laynesmith 2017; ODNB, Biddle 2004; Sharpe 2001.
[3] Levison 1903–4, 95–175, 147–60, 162. See also Krusch and Levison (eds) 1919, 262.
[4] Krusch and Levison (eds) 1919; cf. Wallace-Hadrill (ed.) 1988, 12.
[5] Niblett 1999; Winterbottom (trans.) 1978.
[6] Bede *HE* i.7: Colgrave and Mynors (eds) 1969, 34–5.



Illus. 1.1.3. From Verulamium to St Albans: the development of settlement.



Illus. 1.1.4. Excavations and investigations at the abbey 1978–2008: Roman features.

the abbey stands today on the site occupied in the later fourth or early fifth century by Alban's *basilica*.[7] Bede added to his account of Alban, that to his day *usque ad hanc diem* sick people were healed in a church on the site of the martyrdom in *quo videlicet loco* and 'the working of frequent miracles continues to bring it renown'. This strongly suggests that the abbey of St Alban had its origin in a cemetery basilica erected over the site of the saint's grave, in a pattern characteristic of the empire, but otherwise unrecognized in Roman Britain.[8] The discovery of the Roman cemetery and finds extending under the present abbey church provides a context for the burial of Alban in a topography that aligns with that which the sources describe.[9]

The history of the abbey is extraordinarily well-documented. Towards the end of the eighth century, Offa, king of Mercia established or re-endowed a religious community at the place of Alban's burial (given the visible signs of Alban's veneration as early as 429, it is much more likely that Offa reformed an already established Christian community).[10] A scriptorium was established by Paul of Caen during his abbacy (1077–93) which resulted in the production of outstanding manuscripts that bear witness to a strong impulse to investigate and document the abbey's early history, resulting in the compilation of what was probably the monastery's first comprehensive cartulary.[11] The abbey was home to two exceptional medieval chroniclers, Matthew Paris and Thomas Walsingham, and it was to become perhaps the greatest centre of historical writing in England throughout the Middle Ages.[12]

Much of this activity, and especially that of the work of the abbots who rebuilt and enlarged the abbey, was made possible by the abbey's considerable landed wealth and papal privileges, the latter evidenced by legendary narratives and a succession of early and well-documented grants.[13] The legend begins with the story

[7] There has been no excavation under the nave of the abbey to confirm that this was indeed the site of the early church, but there is negative evidence to suggest that it was. In 1991 when the present site of the shrine of Alban was excavated behind the reredos towards the east end of the abbey church, nothing was found to suggest any use of that part of the site before the building was vastly extended to the east in the late eleventh century. See Biddle and Kjølbye-Biddle 1980. For more on the significance of the late Roman cemetery on the hill and probable martyrium, see Henig and Lindley (eds) 2001.

[8] Levison 1941. Colgrave and Mynors (eds) 1969, 34–5.

[9] See pp. 19–24. Winterbottom (trans.) 1978.

[10] *ND* I, f. 25r.

[11] Keynes 1993. Crick 2007.

[12] Clark and Preest 2019; Clark 2004; Gransden 1982; Biddle and Kjølbye-Biddle 1981.

[13] Alexander III granted 43 privileges to the abbot and convent of St Albans. The recorded dates of these privileges support the impression given by the *Deeds* compiler that Abbot Robert of Gorham sent Master Ambrosius on his mission to Rome soon after news of Alexander's election, Preest and Clark 2019, 237–8.

of the first abbot, Offa, and Rome, and the second begins before the pontificate of Adrian IV in 1154.[14] Adrian, formerly Nicholas Breakspear, was born in England and his father, Robert of the Chamber, ended his life as a monk at St Albans. The key exemptions enjoyed by the abbey were secured soon after Adrian's death from Alexander III, when the long-standing struggle with the bishop of Lincoln was settled.[15]

During periods of building and rebuilding, the chapter house was one of the first to be addressed, repaired, and adorned to befit its status as the second most important building next to the abbey church itself in the monastic complex. Every day of the monastic year the convent met after Morrow Mass to hear the martyrology for the day, to say psalms for the dead, and to listen to a chapter of the monastic Rule (hence 'chapter' house). Monastic and secular matters affecting the house were discussed and breaches of discipline were also dealt with. The celebration of the dead was an important element in the chapter and hence it was that the chapter house had become by the Norman period an honoured resting place for the abbots, including (in the case of St Albans) four figures from the monastic community.

i. Paul of Caen and his works (abbot 1077–93)

Paul of Caen was a monk at Caen and the nephew of Lanfranc, archbishop of Canterbury. He was elected abbot of St Albans in 1077.

Before the late eleventh century, the Anglo-Saxon monastery seems to have included two churches, possibly more, but beyond this nothing is known of any other associated structures. Efforts were made to begin a reconstruction of the abbey before the Norman invasion, evidenced by the accumulation of stone and tile taken from the Roman city of Verulamium, but these works never progressed. [16]

Matthew Paris writes that Abbot Paul was responsible for rebuilding the abbey and had received substantial help from Lanfranc to pay for these works.[17] This meant that by 1088, only 11 years into his abbacy, he had rebuilt almost all the monastic buildings, including the first apsidal chapter house (Illus. 1.1.5, cf. Illus. 2.3.1). The shallow double-order pilaster buttresses of Paul's chapter house were faced with Roman tiles and its floor was also paved with broken and reused Roman tiles in several layers, suggesting that Paul used some of the materials stockpiled by the Anglo-Saxon abbots before him. The tower of Paul's abbey church, which still stands today, is also constructed with recycled Roman tiles. The documentary evidence we have for Paul's works suggests that the nave of the new abbey church was completed later than the rest of the church and monastic buildings, since it was only dedicated at Christmas 1115 in the presence of Henry I.[18]

Eadmer (1060–1124), a monk at Canterbury and a younger contemporary of Paul's, describes the close relationship enjoyed by Paul and Lanfranc, recording that it was Lanfranc who rebuilt the abbey church of St Albans from the foundations. It is likely that Lanfranc's involvement was financial and that much of the process was left up to Paul.

Following his death in 1093 Paul was buried in the apse of his new chapter house, the first of 11 abbots to be buried in this important monastic building. Paul's programme of rebuilding had secured the status of St Albans as one of the greatest monastic communities in its day anywhere in the Christian world and provided the setting for a religious community whose essential elements would remain unchanged until the dissolution of the abbey by Henry VIII in 1539.

Sometime following Paul's death in 1093, but before Robert of Gorham's abbacy in 1151, Paul's chapter house was extended east to a second apse. The archaeological evidence suggests that this work was probably undertaken during the abbacy of Richard d'Albini (1097–1119).[19] This would have increased the capacity of the chapter house from 56 monks to about 76. The increasing length of the chapter house may indeed give us some idea of the growth of the monastic community. A second extension to Paul's chapter house was attempted, but abandoned, probably during the abbacy of Ralph Gubion (d. 1151).

ii. Robert of Gorham and his works (abbot 1151–66)

Robert of Gorham, the fifth Norman abbot, rebuilt the chapter house as a vast rectangular structure, together with the immediately adjacent part of the cloister and slype, a *fundamentis* 'from the foundations' (see Illus. 1.1.5 for the plan of the architectural development of the abbey from Paul of Caen to Robert of Gorham).[20]

[14] Preest and Clark 2019.

[15] On Pope Adrian IV's privileges for St Albans, see Sayers 1971, 57.

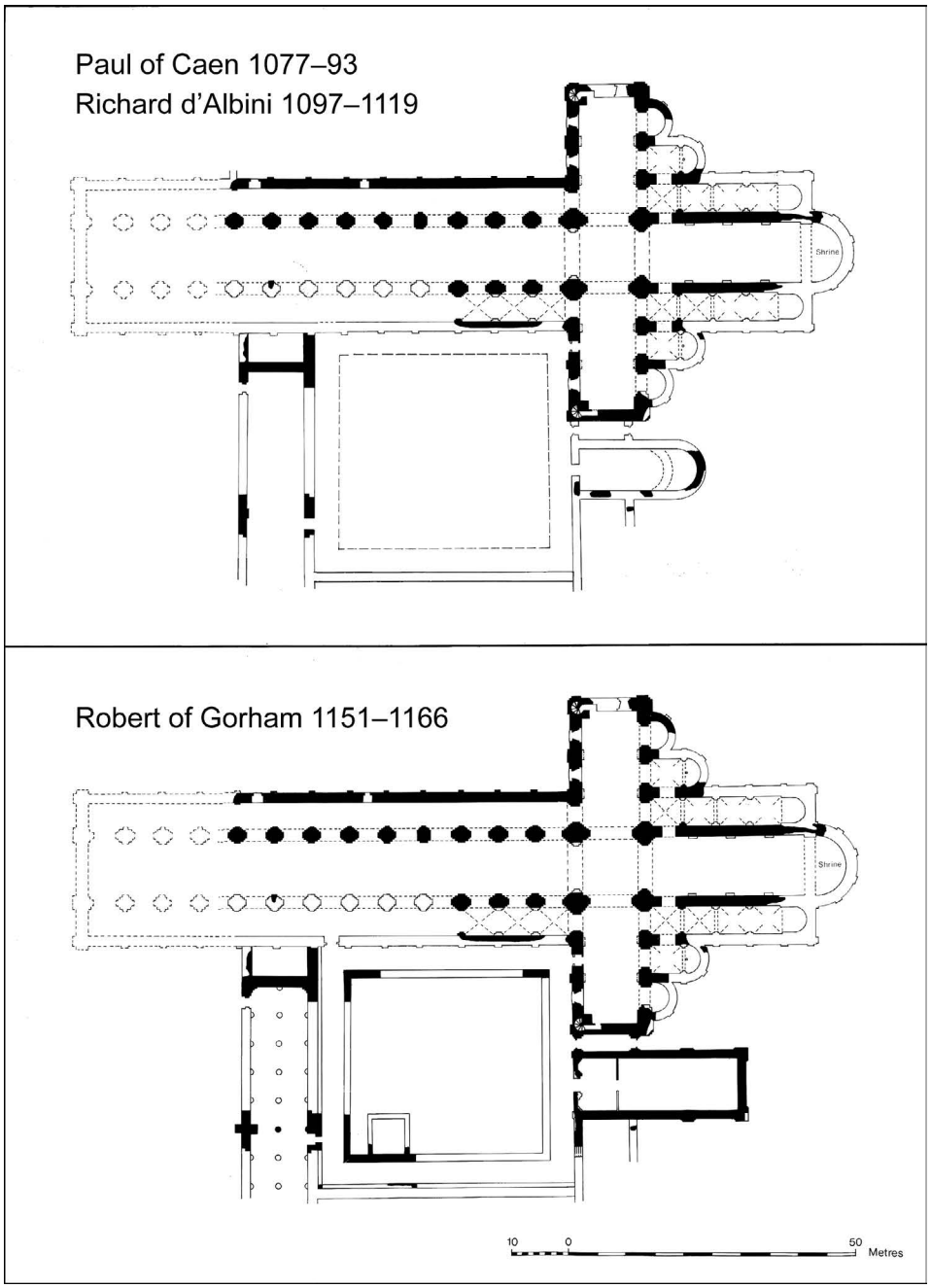
[16] For a critical treatment of the story of Offa's foundation of the Anglo-Saxon monastery and texts of his purported charters, see Crick 2007 and Preest and Clark 2019. Also see Rushbrook Williams 1917. The charters are listed by Sawyer 1968, nos 136 and 138, with full further references and critical comment. For the Anglo-Saxon abbots, see also Knowles, Brooke, and London (eds) 1972. The translation of Alban's relics by Offa is discussed by Levison 1941.

[17] *Gesta Abbat.*, I, 51–64.

[18] This was a normal procedure allowing services to continue in the old church until the new works were ready see Runcie 1977, 41.

[19] See pp. 41. There was a hiatus early in Abbot Richard's term when William II took the abbey into his hands and imposed a lay administrator; therefore, any further building activity surely belongs to later (perhaps significantly later) in Richard's administration.

[20] Wigram 1924.



Illus. 1.1.5. The architectural development of the abbey 1077–1166, in the reign of Abbots Paul of Caen, Richard d'Albini, and Robert of Gorham.

iii. John Whethamstede (second abbacy 1452–65) and William of Wallingford (abbot 1476–92) and their works

Robert of Gorham's chapter house stood unaltered for three centuries, until it was first repaired and then reconstructed by abbots John Whethamstede and William of Wallingford.[21] By this time the chapter house was no longer used as the burial-place for the abbots of St Albans; indeed John of Hertford (d.1265) was the last of the long line of Norman and later abbots to be buried in the chapter house, and with the exception of John de la Moot (d. 1401), all abbots after this were buried in the presbytery of the church. Each of the 15 burials in the chapter house are listed in an early fifteenth-century written source, given in full in both Latin and English in the Appendix.[22]

We know from the study of the carved stones recovered in the excavation that Whethamstede and Wallingford

[21] Biddle and Kjølbye-Biddle 1984b.

[22] See Appendix I. The account of the burials in the chapter house written *c.*1428 is included in Lloyd 1873, 7–8, 29, and 31–6. Lloyd's was a translation of a Latin text which is printed in *RA.*, Appendix D, 431–50, the portion relating to the chapter house is 434–5. See MS Harley 3775, St Albans Abbey confraternity register, fragment.

built a stone vaulted ceiling and added new windows too which will have made the chapter house one of the grandest rooms in late medieval England.[23] They left the plan unchanged with the lower part of the Norman walls, below window level, in position. Also left untouched along the walls were the stone benches and the magnificent floor of glazed tiles decorated in relief.

The essential historical framework for the reconstruction of the chapter house in the fifteenth century is derived from the Register of John of Whethamstede.[24] In it, we are told that the restoration of Robert of Gorham's chapter house began during John's second abbacy (1452–65), at a cost in excess of one hundred pounds. More precise dating for the start of the work comes from the statement in the Register that the chapter house restored by Abbot John was 'ruinous'.[25] This may refer to the damage caused by Lancastrian troops when they sacked the monastery after the second battle of St Albans in February 1461,[26] in which case it is possible that the remodelling only commenced in the last two or three years of John's abbacy, *c*.1461–4. However, the more likely alternative is that any remodelling work was carried out before 1461, as the abbey is said to have been destitute for some time after the sack,[27] and the 'ruinous' condition need not be seen as a result of this event.[28]

Work started on the exterior, and Abbot John left the building in such a condition that 'it might be easy for his successor, if he wished, to complete it'. The inference from this wording is that the chapter house was in an useable state at his death, and the fact that no activity is recorded on it in the time of his direct successor, William Albon (1465–75), tends to confirm this. The Register records its completion, at a personal cost of one thousand pounds, by Albon's successor, William Wallingford (1476–92). The huge difference between the amounts spent by the two abbots suggests that John's work was not substantial, and that it involved a partial refurbishment mainly of the exterior, probably only in the eastern bays; and that the interior was left relatively intact with the existing roof in position.

The amount expended by Abbot William is a more credible sum for the extensive remodelling of a chapter house. In the contemporary example of the Divinity School at Oxford, which is similar in size to the St Albans chapter house, it needed a gift of one thousand marks (£666 13s. 4d.) in 1479 for the construction of its vault;[29] and in 1506, the contract for all eight bays of the choir vault of St George's Chapel, Windsor, specified eight hundred pounds.[30] Both examples are expensive by the standards of their time, and the vaults at Oxford and Windsor are exceptionally lavish in their use of carved and pendant bosses (see Illus. 3.6.7). At a more reasonable level of expenditure, three hundred pounds (excluding materials) was the contract price for the quite sizeable nave and west tower of the collegiate church at Fotheringhay in 1434.[31] In the case of the fairly elaborate chancel of three bays at Adderbury, Oxfordshire, it has been calculated that the complete cost of rebuilding, 1408–18, was £399 5s. 4d., including the glazing.[32] All of which suggests that it would have been quite possible for Abbot William's benefaction to have paid for most of the remodelling of the chapter house (Illus. 1.1.6).[33]

iv. The Dissolution

Following the dissolution of the monasteries, complete by 1540, and the surrender of St Albans on 5 December 1539, the abbey complex was used by the king in 1540–1 and the privy council met twice there in 1541, using the great court and domestic ranges. The presence of James Needham, the king's surveyor, at St Albans would suggest that the abbey complex were among those sites under consideration as potential crown residences in the period 1539–41.[34] However, sometime

[23] See below, p. 50–2.

[24] *RA*.,For Abbot Whethampstede's second abbacy (1452–65), the Register states (p. 472):

> 'Vetustam ruinosam Domum Capitularem ex ostrum politis renovare disposuit, idealeque propositum suae mentus sic exteriorem ducere curavit in actum, ut leve satis foret suo ostrumt, si vellet, opus perfecte consummare, quod ipse notabilitater egregieque multum principavit, expendendo, ut fertur, in ostrumtion eiusdem operis, ultra summam centum librarum.'
> (Translation, Biddle/Morris: 'He set out to renovate the old ruinous chapter house with elegant stonework (ashlar), and rightly therefore he began work on the exterior, so that it might be easy enough for his successor, if he wished, to complete the work, which he himself started remarkably and very well, spending, it is said, more than £100 in carrying out the work.')

For Abbot William Wallingford's abbacy (p. 477):

> 'Deinde non mediocrem nactus est laudem, cum Domum ostrum Capitularem suis magnis pecuniis feliciter consummaverit: ad id perficiendum mille librarum summam persolvit.'
> (Translation, Biddle/Morris: 'Afterwards he received no little praise for successfully finishing our chapter house at his own great expense; he spent £1,000 in completing it'.)

[25] ibid., 472

[26] *VCH Herts* 4, 405.

[27] ibid.

[28] For example, the chapter house of Christ Church, Canterbury, was also described as 'ruinous' before Abbot Chillenden's remodelling; Woodman 1981, 167.

[29] Myres 1967, 154.

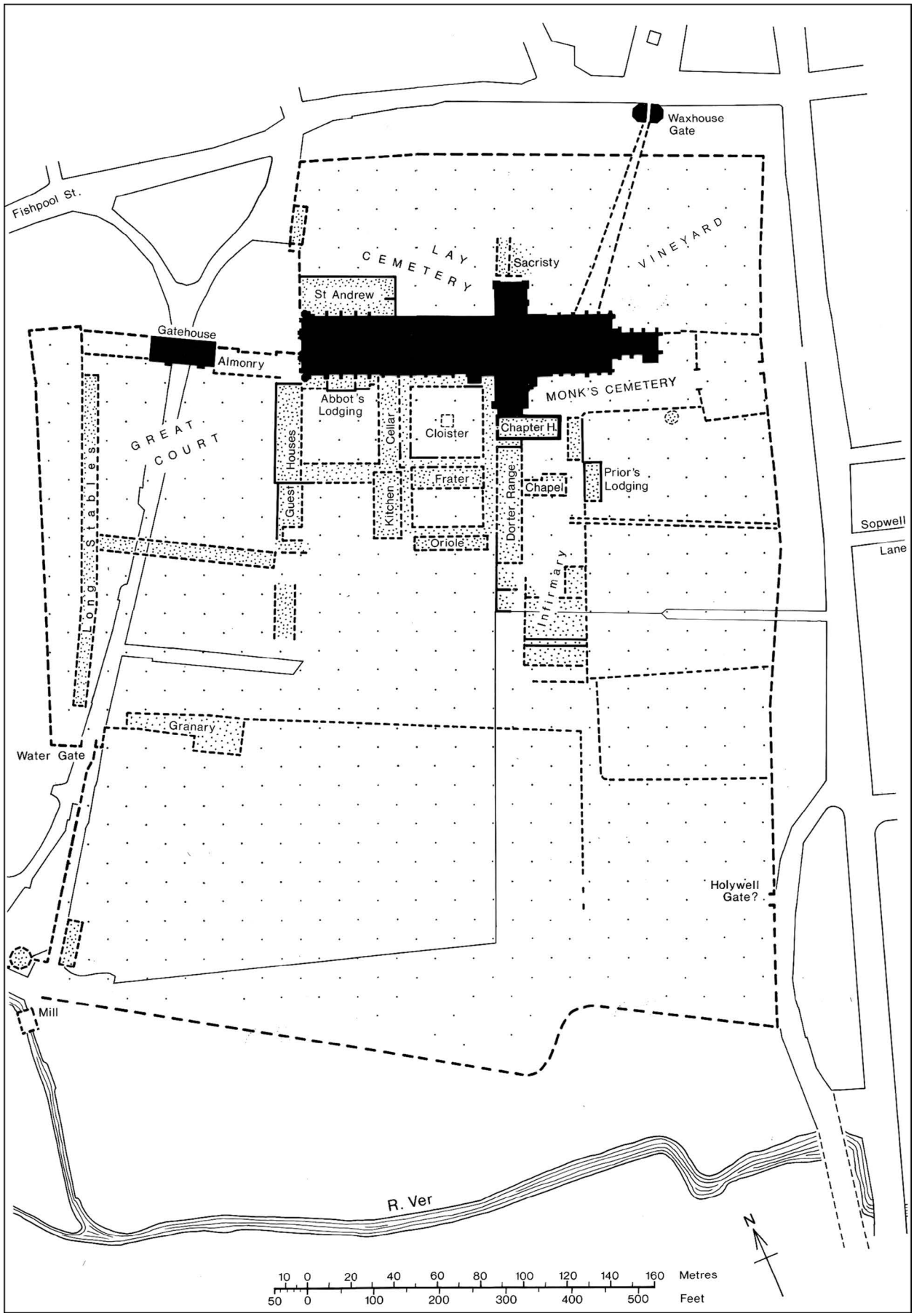
[30] Salzman 1967, 556–7.

[31] ibid., 505–9; there is no vaulting in this work at Fotheringhay.

[32] Harvey 1978, 148; the chancel has no vaulting.

[33] The major unknown factor is the proportion (if any) of this amount which might have been spent on expensive fittings or stained glass. In this context, it is sobering to note in the Register that the great altar screen made in Abbot William's time cost 11,000 marks, over seven times the cost of his work in the chapter house; Neale (1877, 4), citing *RA*., Presumably the differential between the cost of the two works can be explained by the vast amount of statuary, carved decoration, and especially expensive pigments and metals employed on the screen, which is described in the Register as 'highly decorated, sumptuous, ... the most divine object in the kingdom' (Neale's translation).

[34] Clark 2022.



Illus. 1.1.6. The abbey and its buildings in the late Middle Ages.

after this, Sir Richard Lee was charged with carrying out the demolition works, the stone from which he used to build a house at Sopwell, a site he secured in 1540.[35] Thus, the vast complex covering the hill to the south of the abbey church, the agglomeration of 12 centuries, was demolished and only the abbey gateway survived.

In the 1540s, the abbey church, Lee's grant to which was delayed until 1550, appears to have been repossessed by the townspeople for their own worship. Their affection for the abbey site and firm adherence to traditional religion ensured the preservation of much of the monastic fabric of the abbey church (exceptional in the history of the dissolution), and in 1553 the church was bought by the people to serve as their parish church. It is possible that monastic life resumed at St Albans in the 1550s, during the reign of Mary I, fragmentary evidence for which comes from Robert Shrimpton, three times mayor of St Albans who died in 1611.[36]

> *This Mr Shrimpton rememb'red that when the news of Queen Marie's death arrived at St Albans, the then abbot, for grief, took his chamber and dyd within a fortnight.*[37]

A bird's-eye plan of St Albans by Benjamin Hare published in 1634 shows only an open area to the south of the south transept.[38] The 'Plan of the Town of St. Albans' by Andrews and Wren published in 1766 shows the slype at the end of the south transept with a path along its south side, but no sign of the chapter house.[39] By 1810 when John Carter drew the south transept and slype for his *Account of the Abbey Church of St Alban* (London, 1813), no trace of the chapter house is shown.[40]

The second half of the nineteenth century saw the repair and reconstruction of the abbey church as cathedral church of the newly founded city and diocese of St Albans in 1877 (Illus. 1.1.7). All the functions of a cathedral church – the vestries, song school, libraries, meeting rooms, and offices – all had to be housed within the church, until it became untenable in the 1970s and the construction of a new chapter house proposed.

The chapter house and its parallels

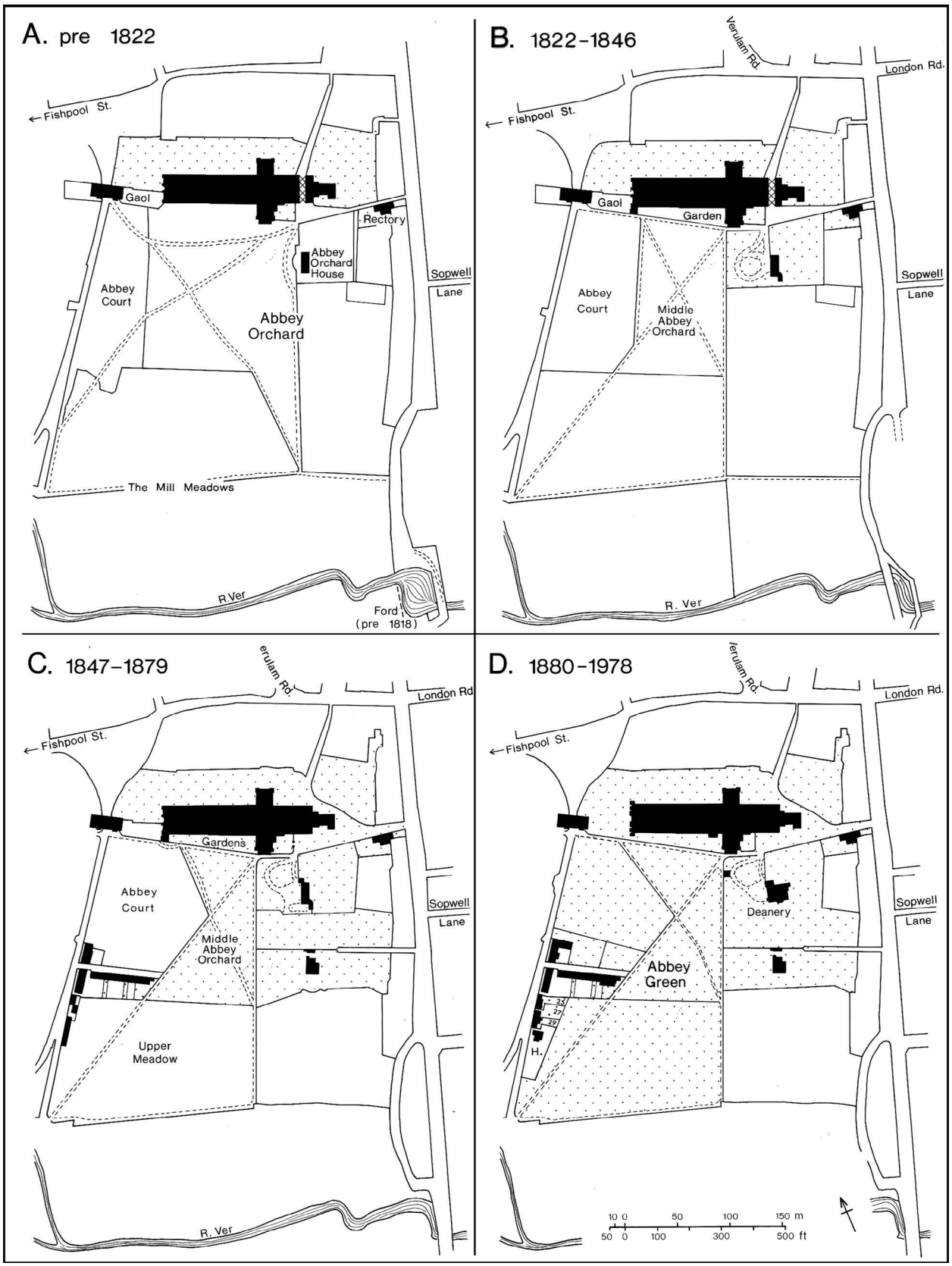
Archaeological investigation of a chapter house, not least by excavation, has seldom taken place. Although many chapter houses have been uncovered, and their remains can be seen throughout the country in the ruins of monastic houses in the care of English Heritage, in most cases what we see is the ruined final state of the building with the position of graves sometimes marked in the grass. Table 1.1.1 gives the internal dimensions, where known, of eleventh- and twelfth-century apsidal chapter houses in England.[41] Table 1.1.2 gives comparable internal dimensions for square-ended chapter houses in England, Scotland and Wales. Only the following four chapter houses appear to have been in any sense archaeologically excavated.

1. St Albans Abbey (Hertfordshire) 1978: apsidal then rectangular

The excavation reported in this volume has shown that the original apsidal chapter house was built between 1077 and 1088 in the time of Abbot Paul of Caen. It went through an apsidal extension and work had begun on a second apsidal extension before the chapter house was rebuilt as a large rectangular hall by Abbot Robert of Gorham between 1159 and 1166. The entire interior of the final (rectangular) chapter house measuring 90.45 by 30 feet (27.5 by 9.1 m; Table 2.3.4), a ratio of 3:1, and the adjacent east walk of the cloister was excavated down to natural deposits. There were 15 graves in the chapter house: 11 abbots and four other members of the monastic community.

The excavation of the chapter house in 1978 provided an example of the evolution in plan of this important building. This evidence was in plan and not in elevation because the chapter house, like the rest of the monastery's buildings, was reduced to ground-level within a few years of the suppression of the abbey in 1539. The below-ground archaeological evidence provides a clear picture of an evolution ranging over more than four and a half centuries from the 1070s until 1539 (Illus. 2.2.3). The first chapter house was a small building consisting of a square room with an eastern apse which was reached internally across a single step. The apse of this first chapter house was extended once (the second chapter house) and the foundation-trench for its further apsidal extension had been dug before it was decided in the 1150s to rebuild the chapter house as a vast rectangular building (the third chapter house). This would be given a magnificent lierne vault in stone with fan-vaulted springers in the late fifteenth century.

[35] Wigram 1924, 38.
[36] See Clark 2000 for a detailed account of the complex sequence of events at St Albans post dissolution.
[37] ibid., 324.
[38] Wilton 1900.
[39] Royal Collection Trust, A Plan of the Town of St Albans, in Hertfordshire, and a South-West View of the Abby of St. Alban's, 1766, RCIN 701552.
[40] Carter 1813.
[41] There is written but no archaeological or structural evidence that the original chapter house of Westminster Abbey was apsidal. It was perhaps rebuilt in the mid-twelfth century with a longer apse before being rebuilt in the mid-thirteenth century as the present polygonal hall described by Matthew Paris as 'a chapter house beyond compare', see Rodwell and Mortimer (eds) 2010. Harrison and McNeill 2015, 72, Fig. 2, where the possible apsidal stages of the chapter house are indicated.



Illus. 1.1.7. The ownership of the abbey site, nineteenth to twentieth century.

2. Durham Cathedral 1874: apsidal[42]

The earliest excavation of a medieval chapter house which can be regarded in any sense as 'archaeological' is that in 1874 of the site of the demolished apsidal chapter house at Durham Cathedral.

No attention was paid to stratigraphy with the result that no distinction was made between burials in the chapter house and those in the remarkably rich underlying cemetery. The osteology was, however, well reported and allows the skeletons of females, children, and infants, who would not have been buried in the chapter house, to be assigned to the underlying cemetery. These and other factors suggest that only five of the 37 burials can safely be assigned to the chapter house itself and these appear to have been those of five bishops of Durham:

No. 4 (p. 387) Ralph Flambard (1099–1128)
No. 5 (p. 300) Geoffrey Rufus (1133–40)
No. 3 (p. 391) William de St Barbara (1143–52)
No. 1 (p. 392) Robert Halieland or de Insula (1274–83)
No. 2 (p. 393) Richard Kellaw (1311–16).

3. Keynsham Abbey (Somerset) 1966 onwards: rectangular[43]

The rectangular chapter house of Keynsham Abbey, founded in 1167, was uncovered during excavations from 1966 onwards. It measured 18.3 m x 9 m (60 x 29 ft 7 in.) internally, a ratio of 2:1. Its tiled floor was found still in position over large areas of the eastern half of the interior, but the tiles had been removed from the greater part of the western half in which a 'reverberatory furnace' with an extensive 'stoke hole' had been inserted, presumably for melting lead from the roofs of the dissolved abbey. There is no sign that the tiles were taken up and the excavation taken deeper.

4. Battle Abbey (Sussex) 1978–80: apsidal[44]

The east range of the cloister of Battle Abbey, founded by William the Conqueror in or about 1067, was extensively excavated in 1978–80.[45] A photograph in the published report shows the floor of the chapter house with the outlines of graves and other features. The excavation showed that the original apsidal chapter house was structurally later than the footings of the south transept and should probably be dated to the late eleventh century.[46]

Even where the chapter house has been fully uncovered in an archaeological investigation, as at Battle,[47] it is not clear whether the meticulous excavation obvious in the photographs[48] has gone below the uppermost surviving floors to reveal concealed features such as earlier graves, traces of different arrangements of the interior, or pre-abbey features.

Previous excavations on the site of the St Albans chapter house

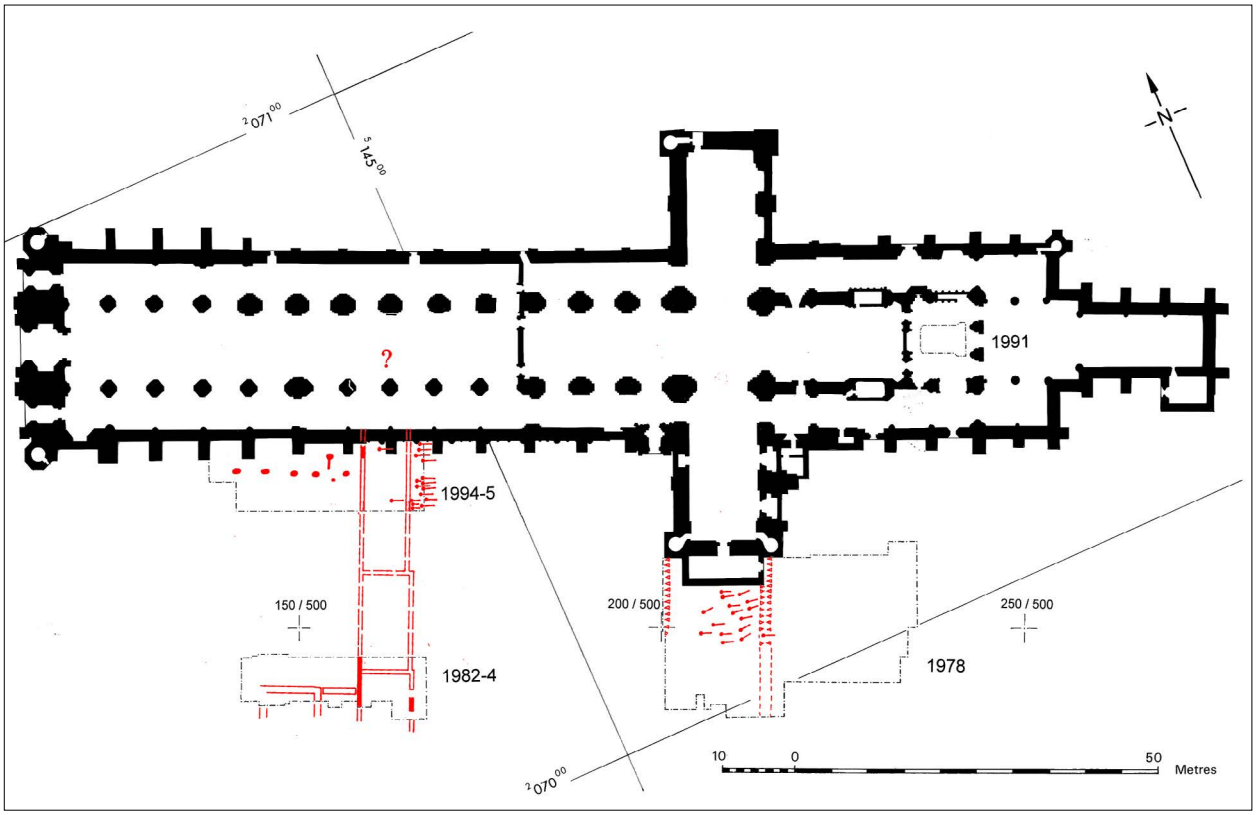
In 1877 the site of the medieval chapter house on the south side of the slype was trenched for the insertion of gas pipes. The east, west, and north walls of the chapter house were found, but not the south wall, and the quality of the carved decoration and the excellence of the tiled floor was noted.[49] Further trenches were opened in 1920 by the St Albans and Herts. Architectural and Archaeological Society within the wall of the deanery garden. The published plan shows the extensive remains of the tiled floor within the west end of the medieval chapter house and elements of the west and south walls including what is probably the foundation of a buttress against the south wall.[50] Approximately the same area was opened up again in 1937[51] and yet again in 1975.[52]

The proposed new chapter house and the public enquiry of 1977

The loss of any place devoted entirely to working meetings was presumably not of great importance before the creation of the see and deanery in 1877. From then onwards meetings could and for a century usually did take place take place in the deanery built in 1878. By the 1970s however, if not before, it was clear that a large room for public meetings was becoming essential and that the need for office space was at least as urgent.

The solution was to create for modern needs a building which provided not only offices but also a large room not unlike a medieval chapter house for public meetings of many kinds. The decision to build the new structure on the exact site of the medieval chapter house was entirely logical. The site of the medieval conventual buildings was already a Scheduled Ancient Monument, the protection of which 'by record' in advance of their

[42] Fowler 1879.
[43] Lowe and Mason 1987, 81–105, Figs 2A and 5, with a plan of the chapter house and its tiled floor.
[44] We are grateful to John Hare for this crucial information.
[45] For the excavation of the early apsidal chapter house (which was never rebuilt as a rectangle) see Hare 1985, 20–3, Fig. 6 (a plan of the chapter house) and Pl. 6 (a photograph of the excavated chapter house from the east). See also Hare 1980, 85, Pl. 3.
[46] Pp. 33–39.
[47] Hare 1985, 20–3, Fig. 6 and Pl. 6.
[48] For the important photograph of the excavated chapter house, see Hare 1980, 85, Pl. 3.
[49] Davys 1877, pp. 467, 475, 477.
[50] Wigram 1924, with a misaligned plan, 38–9 and excellent drawings of areas of the tiled floor, 40–2.
[51] Rogers 1937, with photographs of the area of tiled floor previously uncovered and drawn in 1920.
[52] Niblett and Thompson 2005.



Illus. 1.1.8. Excavations and investigations at the abbey 1978–2008: Anglo-Saxon features.

disturbance and indeed effective destruction by the proposed new building was assured. After a ten-day public enquiry held at St Albans in January 1977 the new plans were approved, provided that the site of the medieval chapter house, on the precise site of which the new chapter house was to be built, should first be fully excavated at the expense of the St Albans Cathedral Council, the developer.

The excavation of 1978

The excavation of 1978 covered the entire site of the medieval chapter house with its walls and buttresses and the immediately adjacent external areas (Illus. 1.1.4).[53] The area to be excavated was subdivided into Trenches 1 to 4, each allotted to a separate supervisor (Illus. 2.2.2).[54] The magnificent floor of relief-decorated tiles, substantial areas of which still survived, and the graves of 15 known figures of the late eleventh- to fifteenth-century abbey, including 11 abbots, are described in detail in this book.[55]

The work was undertaken as a project of the University Museum of the University of Pennsylvania of which Martin Biddle was then director and Birthe Kjølbye-Biddle a member of research staff. Archaeological excavation began at the end of May, lasted into the autumn, and was followed by a watching brief in February 1979 during the building of the basement of the new building.[56]

The records of the excavation were analysed by Birthe Kjølbye-Biddle who wrote much of the draft of the present report. Further excavations took place inside the cloister and across its west range in 1982–4 (Trenches 5–8), at the site of the shrine of St Alban in 1991 (Trench 9, as described above), and by the south wall of the nave of the abbey in 1994–5 (Trenches 10–13; Illus.1.1.8).[57]

The present book is the final publication of the 1978 excavation of the medieval chapter house and of the areas immediately outside its walls, a preliminary account of which was published the following year.[58]

[53] Biddle and Kjølbye-Biddle 1980.
[54] Pp. 33–53.
[55] The excavation plans and sections were drawn by Hamish Roberton and the photographs taken by Martin Biddle, unless otherwise stated. The excavation records and the finds are deposited in the Verulamium Museum and at St Albans Cathedral.
[56] Thanks to Barbara Magid who kept an eye on the construction of the new building and recorded details of further discoveries as the work went on.
[57] For the excavations of 1982–4 and 1994–5, see Henig and Lindley (eds) 2001, esp. Figs 15 and 67.
[58] Biddle 1979.

Table 1.1.1. English apsidal chapter houses of the eleventh and early twelfth century: comparative internal dimensions

Name of house	County	Date of foundation	Date of chapter house	Width (a)	Overall length (b)	Depth of apse (c) (= ½a)	Area 1 (a x (b-c))	Area 2 (πc^2 / 2)	Total area	Reference to plan used
St Albans Abbey (Benedictine)	Herts.	1077	1077–88	7.3	15.3	3.65	82.9	20.9	103.8	This vol. Illus. 2.3.1
		1077	1093–*c*.1110	7.3	21	3.65	126.7	20.9	147.6	This vol. Illus. 2.3.2
		1077	1151	7.3	28.4	3.65	180	20.9	200.9	This vol. Illus. 2.3.3
Reading Abbey (Benedictine)	Berks.	1121	?	13 (13.0)	25.5 (25.4)	6.5	247	66.4	313.4	Englefield 1782, Pl. VII
Durham Cathedral (Benedictine)	Durham	1083	Before 1128 (Bishop Flambard first burial, died 1128)	10.5 (10.7)	23.5 (23.4)	5.25	191.6	43.3	234.9	Width from Fowler 1879, length from *The Builder*, 3 June 1893
Norwich Cathedral (Benedictine)	Norfolk	1096–1101	Early 12th cent.	11 (10.8)	22.5 (22.4)	5.5	187	47.5	234.5	Gilchrist 2005, Plate 9
Merton Priory (Augustinian)	London	1114–17	?12th cent.	9 (9.1)	21.5 (21.3)	4.5	153	31.8	184.8	Bidder and Westlake 1927, Fig. 5
Lewes (Cluniac)	E. Sussex	1077	?	8.5 (8.6)	20 (20.0)	4.25	133.9	28.4	162.3	Hope and Brakspear 1906
Battle Abbey (Benedictine)	E. Sussex	1067	1070/1071–1102	9 (8.8)	18 (17.8)	4.5	121.5	31.8	153.3	Hare 1985, 20, Fig. 6
Thetford Priory (Cluniac)	Norfolk	1103–4	12th cent. (prob. 1107–*c*.1120)	8 (8.1)	17.5 (17.4)	4	108	25.1	133.1	Raby and Baillie Reynolds 1946
Castle Acre (Cluniac)	Norfolk	1089	?	7 (7.0)	16 (16.2)	3.5	87.5	19.2	106.7	Raby 1936
Wymondham Abbey (Benedictine)	Norfolk	1107	?	6 (6.0)	14 (14.0)	3	66	14.1	80.1	Barnes 2001

All dimensions are internal, include vestibules and benches, and are given in metres. Areas are given in m2.
Except for St Albans, width and overall length are rounded to the nearest half metre (the actual figure measured is given in brackets).
Because all measurements have been taken from small-scale plans (albeit the best available) it is probable that there will be errors.
Measurements should be taken as a guide and not as precisely accurate.

Table 1.1.2. English, Scottish and Welsh square-ended chapter houses of the eleventh and early twelfth century: comparative internal dimensions

Name of house	County	Date of foundation	Date of chapter house	Width (a)	Length (b)	Total area (a x b)	Reference to plan used
St Albans Abbey (Benedictine)	Herts.	1077	1154–9	9.1	27.6	259.4	This vol, Illus. 2.3.3
Fountains Abbey (Cistercian)	Yorks.	1132	*c.*1150–80	12.5 (12.7)	25.5 (25.7)	318.8	Hope 1900a; NB Gilyard-Beer 1970 (w. = 12.2, l. = 25.7)
Canterbury Cathedral (Benedictine)	Kent	1070	*c.*1300–25 (part), completed *c.* 1400–50	11 (11.3)	27 (26.8)	297	Britton 1836a
Winchester Cathedral (Benedictine)	Hants.	1079	?	11 (11.1)	26 (26.0)	286	*VCH* 5, Part 44, plan between pp. 50–1
St Augustine's Abbey, Canterbury (Benedictine)	Kent	1100	14th cent.	11 (11.0)	25 (25.1)	275	Potts 1934
Bury St Edmunds (Benedictine)	Suffolk	1020	?	8.5 (8.7)	28.5 (28.7)	242.3	Wittingham 1951, Pl. XXI
Chester Cathedral (Benedictine)	Cheshire	1092	*c.*1250 (vestibule *c.*1240)	8.5 (8.4)	26 (25.8)	221	*VCH Chester 5.2*, Fig. 104
Rochester (Benedictine)	Kent	1079	?	10.5 (10.3)	20 (20.1)	210	Hope 1900b, Pl. VII
Hexham (Augustinian)	Northumb.	1170	?	8.5 (8.5)	23 (22.9)	195.5	Hodges and Gibson 1919, 122
Keynsham Abbey (Augustinian)	Somerset	1167–72	?	9 (9.0)	18 (18.3)	162	Lowe and Mason 1987, 92
Kirkstall Abbey (Cistercian)	Yorks.	1152	?	8.5 (8.6)	18.5 (18.6)	157.3	Hope and Bilson 1907
Exeter Cathedral (Benedictine)	Devon	1107	?	8.5 (8.6)	17 (16.9)	144.5	*Archaeological Journal* 1913, Fig. 6, facing p. 518
Tintern Abbey (Cistercian)	Monmouths.	1131	12th cent.	8.5 (8.6)	17 (16.8)	144.5	Brakspear and Evans 1910
Bristol Cathedral (Benedictine)	Bristol	1142	*c.*1150–75	7.5 (7.5)	18 (18.0)	135	Britton 1836b
Lesnes Abbey (Augustinian)	London	1178	?	8 (7.9)	15.5 (15.6)	123.2	Clapham 1915
Dryburgh Abbey (Premonstratensian)	Scottish Borders	1150	?	7 (6.9)	14.5 (14.6)	101.5	Richardson and Wood 1948
Wymondham (Benedictine)	Norfolk	1107	?	6.5 (6.5)	15 (15.2)	97.5	Barnes 2001

All dimensions are internal, including vestibules and benches, and are given in metres. Areas are given in m2.
Except for St Albans, width and length are rounded to the nearest half metre (the actual figure measured is given in brackets).
Because all measurements have been taken from small-scale plans (albeit the best available) it is probable that there will be errors.
Measurements should be taken as a guide not as precisely accurate.

PART 2. THE ARCHAEOLOGICAL EVIDENCE

PART 2

1. THE GEOLOGY OF THE SITE

by the late JOHN CATT

St Albans Abbey was built on the north-eastern side of the valley of the River Ver near the southern margin of a patch of gravels overlying Chalk. The gravels thicken northwards under the medieval and modern city of St Albans, and on the opposite (south-western) side of the valley form another patch beneath St Stephens, Chiswell Green, and adjacent areas. Bridgland has equated them with the Westland Green Gravels of Hey,[1] which are part of a long sequence of gravel terraces deposited throughout the Pleistocene period by an early equivalent of the Thames. Before about 450,000 years ago, this river flowed through the Vale of St Albans, but it was diverted at this time into its present course through London by the Anglian glacier, which invaded the Vale from East Anglia. The Westland Green Gravels were dated by Westaway *et al.* to one or more intensely cold periods between 1.57 and 1.74 million years ago.[2] Originally they formed a continuous terrace sloping down to the East Anglian coast, but the terrace was dissected by subsequent erosion leaving numerous patches. These have now been recognized along the pre-Anglian course of the river between the Evenlode Valley north-west of Oxford eastwards into east Hertfordshire, Essex, and Suffolk.

Like other terrace gravels of the proto-Thames, the Westland Green Gravels are composed mainly of flint pebbles, but they also contain moderately large amounts of quartz and quartzite pebbles derived from the Triassic pebble beds in the West Midlands, the Cambrian rocks of the Welsh borderland, and quartz veins in rocks of intermediate age of the Welsh uplands. The Welsh pebbles indicate that the headwaters of the Thames originally extended well into Wales.

Like all the proto-Thames gravels, the patch of Westland Green Gravels under the Abbey has been modified by processes, which occurred during the numerous warm and cold periods of the later Pleistocene over the last 1.5 million years. First, during the warm (interglacial) periods, the gravels lost an original component of chalk pebbles through deep-reaching weathering by slightly acidic percolating water. The weathering also released iron oxides from fine mineral particles within the gravels, and this has given them a rusty (reddish-brown) colour. Another process of soil development during interglacials was the slow downward washing (illuviation) of clay particles in the percolating water. Most of the illuvial clay was redeposited in the basal 1–2 metres of the gravel, where the pH increases close to the irregularly weathered surface of Chalk. This reddish-brown clay-enriched layer was recognized in the two boreholes drilled in 1978 at approximately 23 and 27 metres south of the chapter house prior to its construction. The percolating water carrying the clay also slowly dissolved chalk beneath the gravels, and in the process released flint nodules, which were incorporated into the layer of illuvial clay. The layer between the Chalk and the weathered gravels formed by these processes corresponds to Clay-with-flints *sensu stricto*, as defined by Loveday,[3] though this occurs mainly beneath other permeable deposits overlying Chalk, such as the Plateau Drift (weathered basal Palaeogene) of the Chiltern dipslope.

During cold periods in the Pleistocene the gravels were also disturbed by the process of cryoturbation during repeated seasonal cycles of ground freezing and thawing. Freezing of the uppermost 10–15 metres beneath the land surface created bodies of ground-ice where water was drawn towards the subsurface freezing front, and as they expanded they disturbed the gravels mainly by re-orientating pebbles so that their long axes became almost vertical. The 1984 excavations on the southern side of the Abbey nave exposed the uppermost layers of gravel with almost all the pebbles vertically orientated by this process.[4] Also when ground-ice extended into the underlying Chalk, the freezing of water held in the tiny pores and fissures expanded and destroyed its original structure, breaking it into small lumps (chalk rubble) and fine powder (putty chalk).

The Chalk beneath the Abbey lies close to the boundary between two formations near the base of the Upper Chalk, which have been named the Lewes Nodular Chalk (below) and Seaford Chalk (above). These formations were deposited during the Coniacian Stage of the Late Cretaceous between about 86 and 89 million years ago.[5]

[1] Bridgland 1994; Hey 1965.
[2] Westaway *et al.* 2002.
[3] Loveday 1962.
[4] Catt (ed.) 2010, see Little Heath Pit.
[5] Bailey and Wood 2010.

PART 2

2. THE SITE BEFORE THE BUILDING OF THE CHAPTER HOUSE

by MARTIN BIDDLE *and* BIRTHE KJØLBYE-BIDDLE

It should be noted that the conventions used in sections 1–10 published in this volume are set out in Appendix II, Illus. A.II.1a and the locations of the sections are set out in Illus. A.II.3.[1] Illus. 2.2.1 provides an overview of the archaeological sequence of the site of the chapter house.[2]

For detail on final and provisional phases and date of each context, see the phasing charts, Illus A.II.2.[3]

Sections 1–10 are printed in Appendix II, pp. 501–40.

I. THE OLD GROUND SURFACE

Final phase 1 (prehistoric)

The old ground surface was exposed throughout the area of the 1978 excavation south of the south transept as shown on Illus. 1.1.4, as well as over the whole area of the 1982–4 excavation to the west (Illus. 1.1.8). The old ground surface was also identified inside the abbey by the 1991 excavations; it survived in small areas below the present shrine of St Alban, to the east of the great screen, i.e. north-east of the chapter house.

The natural surface (Final phase 1) is a rich red-brown clay on flints and decayed chalk. The developed soil on this clay cap was not very rich, and had only survived in a few places. Twenty flint flakes and implements of Neolithic type, including a small polished axe,[4] found in later features, especially in the north–south ditch in Trench 2 (F. 571; Illus. 2.2.3A), must be derived from this developed soil or from features within it, now destroyed.

Final phase 2 (Romano-British, ?–c.400?, Section 3 and 5)

Buried turfs earlier than the north–south ditches of Final phase 3, which may be of Roman date, are placed in Final phase 2, or spanning from Final phase 2 to Final phases 3, 9, or 10, depending on the next event in each area.

The sherds of a second-century cremation vessel (*RF 1700-4*) with adherences of some dark earth and pieces of cremated bone are more enigmatic.[5] These sherds were found in the eastern part of the excavation in a hollow-way (F. 227, Section 3, from 501–505 m N) filled in the eighteenth century with loam, which is quite different to that on the sherds.[6] The vessel could not have ended up where it was found as a result of the hollow-way disturbing a deeper cremation grave, because the hollow-way wore down only into the sixteenth-century demolition rubble over the chapter house. This rubble in turn sealed the chapter house floor and the construction-spreads above the natural clay cap where no Roman burials were found. It seems more likely the urn had been in an antiquarian collection and had been discarded in the eighteenth century.

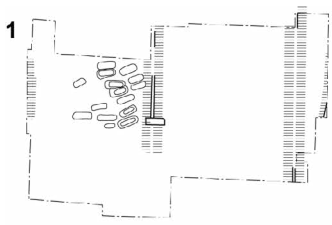
II. THE NORTH–SOUTH DITCHES

Final phase 3 (c.400?–c.800?, Illus. 2.2.3A, Sections 3 and 4, Table 2.2.1)

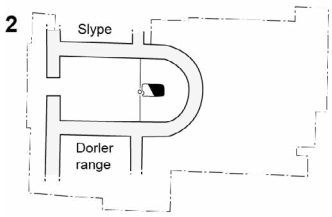
Three north–south ditches have been placed in Final phase 3: F. 500 to the west, F. 571 in the middle, and F. 402 to the east, with a further irregular diagonal ditch (F. 372) at the eastern limit of the excavation. Only the middle ditch (F. 571), which was cut by a later post-hole (F. 547), could be fully excavated. The western ditch (F. 500) lay at the western limit of the excavation and was almost totally cut away by a later ditch (F. 501), while the eastern ditch (F. 402) was largely removed by the east wall of the chapter house (W. 14). The middle and eastern ditches (F. 571 and F. 402 respectively) were approximately 2.5 m wide with flat bottoms about 0.30 m wide. The three principal ditches were steep sided, but the western ditch (F. 500) had a wider splay than the others. These three ditches are parallel, but the middle and eastern ditches (F. 571 and F. 402) run straight north–south, continuing in both directions out of the area of the excavation, while the western ditch (F. 500) has a southern end or turns west at this

[1] See Appendix II.
[2] P. 20.
[3] See Appendix II. For an explanation of these terms and the process of 'phasing' as applied to excavations in Winchester 1961–71 and followed at St Albans in the post-excavation analysis of the 1978 excavation, see Biddle (ed.) 1990, 14–21.
[4] See below, p. 442–3.
[5] See below, p. 453.
[6] See below, pp. 455–6.

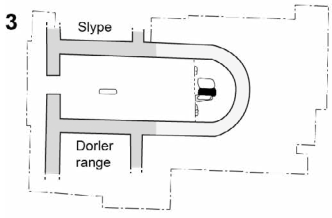
1. Pre-chapter house: Anglo-Saxon boundary or field ditches and cemetery.



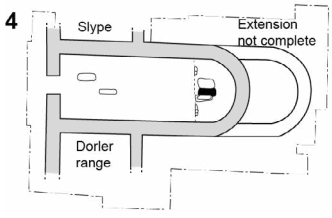
2. 1077–88: the first (apsidal) chapter house, built by Paul of Caen.



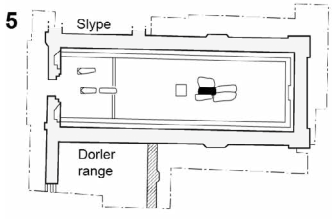
3. Second (apsidal) chapter house, before 1119.



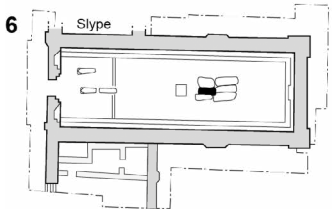
4. Proposed extension to the second (apsidal) chapter house, *c.* 1151.

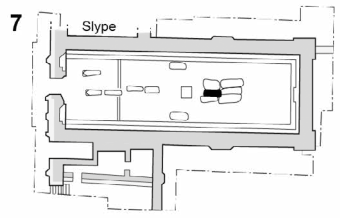


5. Third (rectangular) chapter house, 1154/59, built by Robert of Gorham.

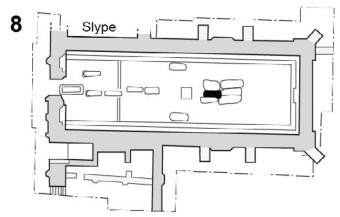


6. 1195–1214: the internal reconstruction of the dorter undercroft by John de Cella.

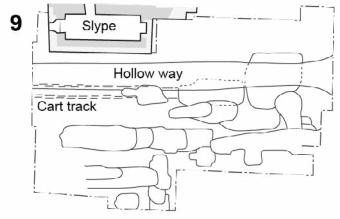




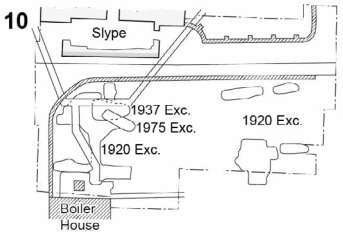
7. 1214–1396: the chapter house up to the time of the reconstruction of the cloister walk by John de la Moot, as prior, before 1396.



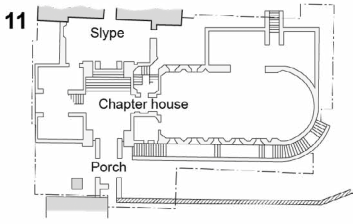
8. 1396–1539: the internal reconstruction of the dorter undercroft by John de la Moot as abbot, and the reconstruction of the chapter house by Abbots Wheathampstead and Wallingford.



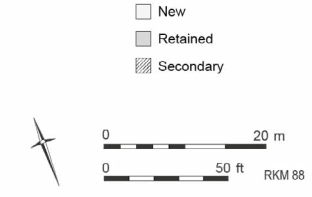
9. 1539 – : the robbing of the chapter house



10. Subsequent changes to the site, 20th century.



11. Present day.



Illus. 2.2.1. The site and development of the chapter house.

Table 2.2.1. The site of the chapter house: approximate distances between ditches F. 571 and F. 402

Distance	Metres	Engl. ft 0.305	Long Roman ft 0.333	Short Roman ft 0.298
Inner lips	14.5	47.5	43.5	48.7
Centres	16.7	54.8	50.2	56
Between inner lips rods of 16.5'	-	2.9	2.6	3
Between centres rods of 16.5'	-	3.3	3	3.4

point. Feature 372 on a slightly different alignment was shallower then the others and had a generally less distinct shape.

If the western ditch (F. 500) is reconstructed with the same depth and profile as the middle ditch (F. 571), the distance between their centre-lines is about 14.7 m, and the distance between the centre-lines of the eastern and middle ditches (F. 402 and F. 571) is 16.7 m.

The finds

There are 144 sherds of mostly late Roman pottery derived from the buried soil and the ditches, or from other features now destroyed.[7] An unrelated group of Roman sherds from a late context, probably from a single cinerary vessel, discussed above are dealt with separately.[8] The Roman sherds were from old used pots, their surface covering being almost worn off. The wear, although called abraded,[9] seemed different from that seen on sherds from pots which had been discarded, thrown on the manure-heap, and then redeposited in plough soil, which have chipped and scratched edges and surfaces.

There are also three late Roman coins,[10] two of which, from the western and eastern ditches (F. 500 and F. 402 respectively), may be *in situ*:

3rd–4th cent., illegible, from F. 500, *RF 736*

Constans, 345–8, from Anglo-Saxon G. 27, *RF 215*

House of Theodosius, 388–402, from F. 402, *RF 646*

There are eight pieces of late Roman glass from the site,[11] three of which may be *in situ* (*RF 837* from ditch F. 500, *RF 308* from ditch F. 571 and *RF 842* from an early buried soil). The other pieces, including a piece of window glass, are from post-medieval contexts. Fragments of Roman tile were also found in some of the layers of Final phase 3.

There were, however, a few later finds:[12] a bun-shaped loom-weight (*RF 307* from ditch F. 571); three grass-tempered sherds, two (*RF 699* and *RF* 771) from ditch F. 402, and one from an early twelfth-century foundation-trench (*RF* 673, F. 403); a shell-tempered sherd (*RF 700* from ditch F. 402); and three coarse soft-fired sherds (*RF 648* from F. 402).

The ditches also produced a great quantity of animal bone.[13] 58.5 per cent of all the animal bone from all the phases of the chapter house site came from Final phases 3 and 4 (5,409 out of 9,237 fragments), and about half of which (28.9 per cent) was from the ditches of Final phase 3. The animal bone assemblage fits with the pattern seen in Middle Saxon sites such as Hamwic (Hants), but there are differences: there is, for example, more roe deer bone from St Albans than from Hamwic. There is also a small amount of human bone:[14] from the early soil (Final phases 2–3) a rather small proximal phalanx; and from the middle ditch (F. 571, Final phase 3), a medial phalanx from a hand and a left maxillary bone probably from an eight- to ten-year old child, as well as two other small fragments of cranial bones.

Interpretation

The three principal ditches run parallel at right angles to the contours of the hill and to the axis of the Norman and later abbey church.

The Anglo-Saxon graves, which follow in Final phases 6 to 8, are orientated true east–west, and lie therefore at an angle to the ditches and to the Norman church. However, they are confined to the area between the western and middle ditches (F. 500 and F. 571 respectively), suggesting that the line of ditches remained significant. The two straight ditches are strictly comparable and define an area of about 16.7 m wide between their centres and 14.50 m wide between the inner lips (Illus. 2.2.3A; Table 2.2.1). These ditches could be field or property divisions, perhaps aligned at right angles to a Roman road further south, or to the contours of the hill (Illus. 1.1.2). The alignment of the

[7] See Roman Pottery report below, pp. 453–9.
[8] See below, p. 453.
[9] See below, p. 453.
[10] See below, p. 404.
[11] See below, pp. 444, and Table 5.14.1.
[12] See below, p. 410.
[13] See below, pp. 478–90.
[14] See further below, pp. 330–2.

Table 2.2.2. The ratios of coins, sherds of vessel glass, and sherds of pottery found in 1978 and 1982

Excavation	Glass:pottery	Coins:pottery	Coins:glass
1978	1:24	1:48	1:2
1982–4	1:3	1:7	3:7

Norman church may reflect similar constraints, but the Anglo-Saxon church did not, for, if the Anglo-Saxon graves are a guide, this would have lain strictly east–west on a more liturgically correct orientation.

The pottery from the ditches is not like an ordinary scatter of Roman pottery distributed as a result of manuring. None of it need have been *in situ*, but the concentration in the ditches suggests that these are of late Roman origin. Much of the pottery is fine ware and the ratio (Table 2.2.2) of sherds of vessel glass to sherds of pottery is quite high (1:24), although not nearly as high as was the case in the area excavated further west in 1982–4 (1:3).[15] No pebble surface, like that uncovered in 1982–4, was found below the chapter house, and the ratio of coins to sherds of pottery (1:48) is nothing like as high as that found to the west in 1982–4 (1:7), but the Roman material may nevertheless still point to an area of unusual use at the edge of a place of assembly.

The ditches probably filled up slowly during the latest part of the fourth century and the first half of the fifth. The middle ditch (F. 571) shows signs of having been cleared out, resulting in the step along parts of its west side (Section 4), but there was no abrupt change in the lower fill. The presence of human bone is interesting for these are the only pre-teen bones from the chapter house site before the post-medieval period. They cannot therefore be contamination from the Anglo-Saxon and later medieval burials on this site, which are all adult males. It is also likely that these bones derive from the Roman cemetery a part of which was found further west in 1982–4, where there were several child graves. The bun-shaped loom-weight (*RF 307*) and the grass-tempered, shell-tempered, and soft-fired sherds suggest that the final fill of the ditches need not be earlier than the sixth or even the seventh century.[16]

Final phases 4 and 5 (c.800? to c.1000, Section 4)

The middle ditch (F. 571) can be seen to have been recut in a wide flat-bottomed shape (F. 543, Section 4). This upper fill contained much oyster, charcoal, animal bone, general organic matter, and Roman pottery. The animal bone and the pottery are much like those from Final phase 3, but there is also a sherd of possibly Early Medieval Gritted Ware (EMGW: *RF 2300*), a metal disc (*RF 906*), and metal-working débris. A human hand and foot bone were found in the upper fill.

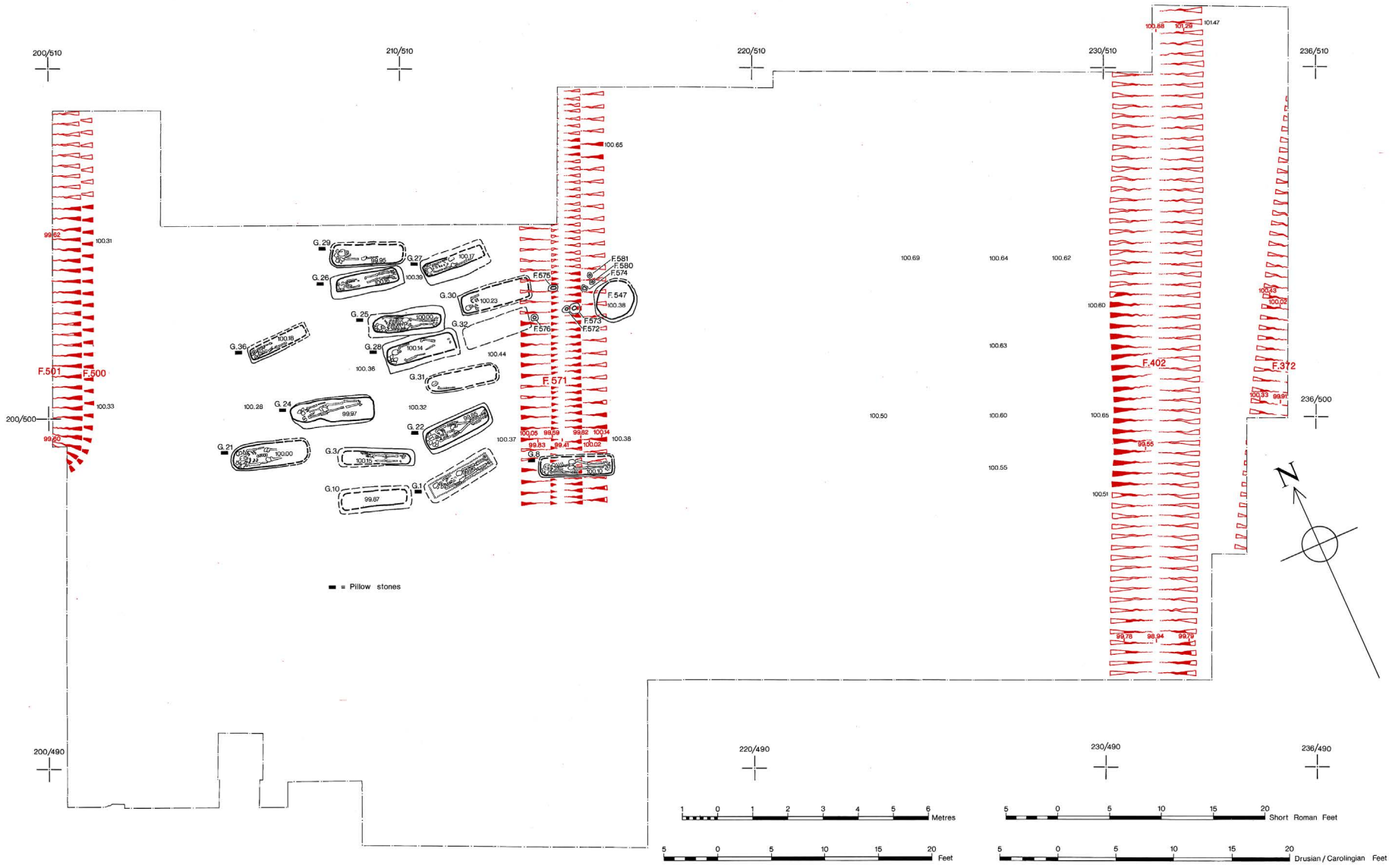
Some stakes cut into the middle ditch (F. 571) may be the remains of a fence (Illus. 2.2.3 A:F. 572–6 and F. 580–1). A round, shallow pit (F. 547) is the only major feature belonging to this phase.

Buried turfs earlier than the Anglo-Saxon graves had survived in a few places. A human tooth, a clavicle, and small foot bones were found in Trench 2, Layer 924, and a hand bone in Trench 2, Layer 967. Like the child bones in Final phase 3, these human hand and foot bones are difficult to explain, but should perhaps be regarded as scatter from Romano-British or Anglo-Saxon burials in the vicinity. Other finds include Roman pottery and tile, a quern of Millstone Grit (*RF 864*), and bone (*RF 900*) and iron objects (*RF 905, 907, 910*).

An enigmatic find from the 1978 excavation is a copper-alloy disc-attachment (*RF 2351*; Illus. 5.7.1) found by contractors in the loose infill of the site in a strip 2.5 m wide to the north of 205/500 to 212.5/500 (see Illus. 2.2.4). The disc could have come from soil remaining unexcavated below the central heating-ducts crossing this area which were demolished by the contractors. The disc could also have been brought in by the contractors from the edges of the site where the topsoil left in position around the archaeological excavation inevitably became eroded during construction works. The disc is thus unstratified, but was almost certainly in a residual position in post-medieval layers before the contractors disturbed it.

The disc is flat, 2 mm thick, with a diameter of 35 mm. It is pierced in three places for attachment with small iron studs, traces of the corrosion of which remain. If the piece is placed with the attachment holes horizontal, the spiral pattern seems to form an equal-armed cross with ends curled back and clasped by a flattened C curling into the cross ends. The centre motif has two small pointed ovals interlacing in a Celtic knot. If the disc is held so that the attachments are at a diagonal, the inverted, curly-ended C is the dominant element and the cross shape disappears.[17] The disc has been compared to saucer brooches, especially the Luton (Beds.) brooch, the design of which is similar, and a date in the fifth century has been suggested.[18] The St Albans disc has also been compared to the escutcheon on Sutton Hoo Hanging bowl 3 and to other hanging bowl escutcheons, and a date around AD 600 suggested.[19] Others prefer a later Anglo-Saxon date, perhaps in the

[15] Biddle and Kjølbye-Biddle 2001, 62.
[16] See below, p. 23.
[17] For a detailed discussion, see below, pp. 429–30.
[18] Note on *RF 2351*, 5th-cent. date, K. Rutherford-Davis.
[19] *RF 2351*, 6th-cent. date.



Illus. 2.2.2. The site before the building of the chapter house: Middle Saxon ditches in red with the graves of the Late Anglo-Saxon cemetery.

eighth century.[20] Our colleagues tend to accept this piece within the period of their own specialization.

We ourselves tend to favour an early date, perhaps in the late fifth or sixth century but only for the reason that there seems to be a context for the disc in the post-Roman activity of the chapter house area, where there are no certain finds belonging to the period between the seventh and the ninth centuries. Their absence might, however, be due to the terracing of the chapter house into the hillside, a process which shaved away much of the then surface as the depth of the graves of the late Anglo-Saxon cemetery shows.

III. THE LATE ANGLO-SAXON CEMETERY

Final phases 6 to 8 (c.800?–1077, Generations 1 and 2:?c. mid-tenth to mid-eleventh century, Illus. 2.2.3A)

Stratification

A series of graves was now dug into the turf layers allocated to Final phase 5. Because the Norman chapter house had been levelled into the hillside, as had the abbey church to the north, the original ground-level, from which the graves were cut, did not survive except at the south-west corner of G. 1. The graves were earlier than any masonry walls, and earlier than any of the graves placed inside the chapter house. In the few instances where there was a relationship (direct or indirect) between a grave and the north–south ditches, the graves were later.

Orientation

The graves were placed to the west of the middle ditch (F. 571/F. 543), but they were not orientated upon this or any of the other ditches: they were not in rows parallel to the ditches, nor did they lie individually at right angles to them. Instead the graves lay diagonally to the ditches, and to the alignment of the Norman and later church. They were, however, orientated strictly west–east, with their heads to the west. Liturgically speaking the graves are aligned, while everything else is at an angle.

The boundaries of the cemetery

The middle ditch (F. 571/F. 543) had been filled, and was perhaps not very noticeable when burial started, but nevertheless the boundary which this ditch had once represented still had some reality, possibly as a hedgerow, for it formed the eastern limit of the cemetery. The northern limit of the cemetery did not lie within the excavated area, for the graves continue to the north (Illus. 2.2.3A). The southern limit was uncertain. The graves may have continued to the south, but all the relevant levels had been removed by Norman or later construction and robbing, with the result that the whole area south of the southernmost surviving graves had been cut away to a level below the bottom of the graves. The western limit is also uncertain. The west wall of the chapter house and the additions to its west face would have removed any early graves in a strip 2.5 m wide near the western end of the excavation. However the last metre or so between the west face of the chapter house and the western limit of the excavation was not damaged, and any graves dug there would have been found. None were found, but this may be because: (1) this area was between rows of graves, or (2) the much earlier western ditch (F. 500/F. 501), although now filled in, was still respected as a boundary, so that the cemetery either stopped here, or burial began again to the west of this ditch.

No Anglo-Saxon graves were found in the 1982–4 excavation which lay 30 m west of the 1978 area (Illus.1.1.8). This is not a good negative because Norman and later disturbances in the 1982–4 area would have removed all but any exceptionally deep graves.[21] It is possible nevertheless that it was only the strip between the middle and western (F. 500 and F. 571) which was used for burial (Illus. 2.2.4). This may have been perhaps as an extension to a cemetery which was becoming too small elsewhere, or perhaps because of encroachment onto such a cemetery by additions to the then church. Or alternatively the construction of monastic buildings may have extended into part of the cemetery, a situation seen at the Anglo-Saxon Old Minster in Winchester.[22]

Sequence

The St Albans cemetery can be divided into two generations, followed by a third containing graves on a different alignment. The division into generations may be oversimplified, because the cemetery was well ordered with only a few intersections between the graves. Apart from grave cutting grave, there were, however, also a few cases where buried soil sealing one grave was cut by a later grave. Horizontal stratigraphy, which most assuredly would have existed, cannot yet be taken into account because it is not known where the church which this cemetery belonged to lay. If the Anglo-Saxon church was located below the nave of the present abbey church, which is a real possibility, the cemetery is likely to have spread from north to

[20] *RF 2351*, 8th-cent. date, J. Graham-Campbell and L. Webster. For similar spiral patterns, see Parsons 1992, 169–70, Fig. 4. Especially close are the spirals on a fragment of a pin from Ixworth, perhaps of 9th-cent. date.

[21] Biddle and Kjølbye-Biddle 1984b; Biddle and Kjølbye-Biddle 1984d, 14–16; Biddle and Kjølbye-Biddle 1984c; Biddle and Kjølbye-Biddle 1986, 178–83.

[22] Biddle and Kjølbye-Biddle, WS 4.i., forthcoming.

south.[23] If the church was to the south-west of the 1978 excavation, as is also possible, then the cemetery is likely to have spread from south to north.

As will be seen, the earliest graves are too uniform, for the detail of their burial ritual to give independent evidence of their relative date.

Final phase 6 (c.800?–c.1000, Diagonal graves, Generation 1, Illus. 2.2.4 and Sections 5 and 7)

Seven graves have been allocated to the first generation, all orientated west–east. The layout, even of this small cemetery, seems to have been organized. There are three north–south rows (Illus. 2.2.4): four graves (from south to north – G. 1, G. 31, G. 28, and G. 26) lie in the clearest, middle row; two graves (G. 30 and G. 27) lie in an eastern row; and with one (G. 10) on its own to the west. Five east–west lines were also created, with G. 10 and G. 1 in a southern line and G. 26 and G. 27 in a northern. The surviving depth of the grave pits varies between 0.20 and 0.38 m, with G. 1 exceptionally deep at 0.50 m, its full original depth. A certain uniformity of depth seems to have been desired since the bottom of the grave is deeper the further down the hill the grave lies. On Section 7, a section north–south across the site which incorporates most of the early graves, it can be seen that G. 10 and G. 26 of Generation 1 reach more or less the same depth as G. 24 of Generation 2, while the three graves of Generation 3 (G. 3, G. 25, and G. 29), all parallel to the abbey church, are deeper and more substantial. This section also shows the levelling of the chapter house into the hillside: judging by the top of the foundation of the north wall (Section 7, W. 55, north end), at least 0.20 m must have been shaved of when the chapter house was constructed. The graves of Generation 1 would thus have been originally between 0.40 and 0.60 m deep. This may seem shallow, but late Anglo-Saxon graves at Repton (Derbys.), where the level from which the graves had been dug survived in places, were often as shallow.

The graves of the first generation are either certainly male (5), probably male (1), or identifiable only as adult (1). Two of the men were over 45 years old when they died, two were over 30, and only one (G. 26) was just under 20, and this body had an interesting dental disorder.[24]

All the bodies lay straight out on their back with (where the bones survived well enough for this to be established) their arms straight along their sides. The body in G. 1 had a cut across the left femur which suggests post-mortem disturbance which had happened before the present excavation. The skull in G. 31 showed post-mortem erosion but this grave was also considerably disturbed by G. 5. All the graves where sufficient evidence survived had a parallel-sided wooden coffin about 0.40 m wide and a pillow of flints or flints and tile below the head inside the coffin. Grave 28 seems to have a coffin 0.50 m wide, and traces of the lid survived. The coffins were not held together by iron nails, and were therefore presumably pegged.

None of the bodies had any object directly associated with it, and none of the graves of this first generation had any human bone probably derived from other graves of this group in the fill. Grave 30 (of which only the upper, western, third survived to be excavated) had six metatarsals of the right and left foot and a phalange in its fill, but these bones are different from those of the graves discussed here.[25] The loam cut by G. 30 to the east (Trench 2, Layer 967) also contained a phalange. It thus seems that G. 30 was cut into an early layer which had scattered human bones of the hands and feet which did not derive from any one specific earlier grave. The fills of these graves contained some animal bone, several pieces of Roman tile, five Roman sherds, and one Roman coin, but no later material. In spite of the lack of later finds associated with these graves, there is no reason to suggest that Generation 1 of the cemetery is earlier than the second half of the tenth century. The placing of stones below or by the head is a normal feature of tenth-century and later burials.

Final phase 7 (c.1000–77, Section 8)

A buried turf on a clayey loam (Trench 2, Layers 155 and 158) sealed the south end of G. 1 at about 211/498, and was seen where G. 1 was cut by a 1975 machine-dug trench (F. 76). The survival of this layer implies that the Norman levelling was not so severe at this point, and that the original depth of G. 1 was 0.5 m. Grave 22 cuts Trench 2, Layer 158 (as can be seen on Section 4 at 211 m east, where the south-west corner of G. 22 just appears). Only Roman tile and some animal bone were found in these layers.

Final phase 8 (c.1000–77, Diagonal graves, Generation 2, Illus. 2.2.4 and Section 6)

In Trench 1, isolated from the other Anglo-Saxon graves, lies G. 36. Orientated west–east, it is the burial of a 35- to 45-year old man, with a healed fractured clavicle. The lower left arm, the edge of the pelvis, the left leg, and the lower right leg were cut away by G. 23 (Section 6). There were wood traces and a single iron nail in the fill of G. 36 which may have been for fastening the lid of the coffin. The right arm crossed the pelvis/femur junction, and immediately next to the bottom edge of the right side of the pelvis, below the hand-end of the

[23] See above, p. 13 and p. 23.
[24] See below, pp. 323–5.
[25] See below, p. 325.

right arm, a hooked tag of copper alloy was found (*RF 284*, Illus. 5.8.1). The plate of the tag is circular with a diameter of 13 mm and is decorated with deeply incised concentric circles with a deeper centre. There are two pierced lugs for attachment. There is no sign that the tag had been disturbed in the grave, although decomposition may have made it slip somewhat out of position. The best interpretation is that it closed a cloth purse, perhaps hanging from a belt.[26]

Grave 36 has been placed in Generation 2 and is assigned to the eleventh century. Grave 22, also orientated west–east (Illus. 2.2.4), is of an over 45-year old man, who had suffered a blow to his head, from which he did not die. This grave has a wooden coffin and pillow stones. The lower finger bones of the right hand were found together by the right knee. The arms are straight, but lay over the pelvis. There was an adult human tibia in the fill of G. 22, as well as a few animal bones and some residual Roman pottery.

Grave 24, also orientated west–east, is that of an over forty-five-year old man, buried in a wooden coffin, and with pillow stones. The body was very poorly preserved, with green and black flecking on the jaw and humeri, perhaps an indication that he was buried clothed. There was one iron nail in the fill of the grave, which might have fastened the lid of the coffin. There were some adult human bones in the fill, as well as animal bone, and residual Roman finds. Grave 24 could belong to Generation 1, but has been assigned to Generation 2 because of the presence of the adult bone in the fill.

Grave 32 probably had a west–east orientation, but only its west end was excavated; the grave was as wide as the others and probably contained an adult. There was an adult human tibia in the fill, and for this reason the grave is placed in Generation 2.

The four graves of the second generation are much like those of the first: the orientation is the same, they fall into the same rows and lines, and the depth of the graves is similar. In the three out of four cases where the body survived, the burial is that of a man, one 35- to 45-year old, the other two older than 45. The arm positions are straight, or with the hand over the pelvis. Every grave has a wooden coffin, in two cases with an iron nail perhaps fastening the lid, and the heads are supported by pillow stones. Grave 36 had a hooked tag, perhaps to fasten a purse, and G. 24 may have been buried clothed.

Apart from the finds already mentioned, there was only some oyster, Roman tile, and sandstone fragments.

Grave Generations 1 and 2

The 11 graves in this cemetery are remarkably uniform. No group of graves amongst the 743 Anglo-Saxon graves belonging to Old Minster in Winchester are so similar, nor is there any such group amongst the 463 Anglo-Saxon and Scandinavian graves excavated at Repton (Derbys.).[27] But all aspects of the burial ritual are well known from other Anglo-Saxon graves, and belong comfortably in the tenth and eleventh centuries: un-nailed (presumably pegged) wooden coffins, the presence of a single nail in the fill (either for fastening the lid, or perhaps to attach a name or prayer to the coffin), and the stone pillows. The position of the hands is also as is to be expected at this date. Even if these graves had not been found in a place with such clear religious associations, it would have been a likely interpretation that this group of male, generally quite aged, individuals was a cemetery of religious. The good order of the cemetery, the rigorous west–east orientation, the pillow stones intended to keep the head in the correct position, facing east at the day of the resurrection, all point to a cemetery of a group of men in one, regulated, religious community.

Final phase 9 (c.1000–77, West–east graves, Generation 3, Tables 2.2.3–7, Illus. 2.2.4 and Section 7)

There was now a complete change in the cemetery. Five graves were inserted, on a new alignment, parallel to the Norman abbey, and not strictly west–east as in Generations 1 and 2. Three of these graves form a straight line some 11 m (36 ft) south of the south face of the south transept, from west to east (G. 21, G. 3, G. 8). A fourth grave on this orientation (G. 29) lay 5.5 m north of G. 3, and was itself about 5.5 m south of the south transept. Between G. 8 and G. 29, and about 2 m south of the latter, lay G. 25 with its head about 1 m east of G. 3 and G. 29.The easternmost grave (G. 8) was dug right across the fill of the north–south ditch (F. 571) perhaps because it was by now invisible, although it had been respected by the burials of Generations 1 and 2. New boundaries were clearly now in force. The graves of Generation 3 had their bottom-level between 99.95 and 100.00 m OD and were deeper than the earlier graves, as can be seen on Section 4 where G. 3 (Generation 3) can be compared to G. 22 (Generation 2), and even better on Section 7 where the Generation 3 graves G. 3, G. 25, and G. 29 were all deeper and more substantial than the earlier pre-chapter house graves.

There were two intersections: G. 29 (Generation 3) cutting G. 26 (Generation 1), and G. 25 (Generation 3) cutting G. 28 (Generation 1). All the bodies were male, and they span all adult ages. Two of the five were over 1.70 m tall, and two of the three pre-chapter

[26] See below, p. 431.

[27] Kjølbye-Biddle 1992.

Table 2.2.3. The site of the chapter house: the Anglo-Saxon cemetery ordered by grave number

Grave number	Generation	Centre E/ N	Bottom level	Sex	Age
1	1	211.5/498.3	99.82	M	35–45
3	3	209.1/498.8	99.95	M	35–40
8	3	214.8/498.6	100	M	25–35
10	1	209.5/497.7	99.87	?	A
21	3	206.1/498.9	100	M	45+
22	2	211.5/499.7	99.88	M	45+
24	2	207.8/500.3	99.97	M	45+
25	3	210.2/502.7	100	M	17–25
26	1	208.9/503.9	100.16	M	18–20
27	1	211.5/504.5	100.16	M	20–30
28	1	210.6/502.0	100.14	M	45+
29	3	209.0/504.7	99.95	M	25–30
30	1	212.7/503.5	100.23	M	30–40
31	1	211.6/501.1	99.95	M	45–55
32	2	213.0/502.5	-	?	A
36	2	206.8/501.9	100.18	M	35–45

Table 2.2.4. The Anglo-Saxon cemetery below the chapter house ordered by generation and grave number

Gen	Grave	Or	Centre E/N	L	P	Coffin	Ha	Sex	Age	Stature (cm)	Build	Path	Pm dis.
1	1	1	211.5/498.3	099.82	y	w	s	?M	35–45	-	gracile	n	y
1	10	1	209.5/497.7	099.87	?	?	?	?	A	-	-	?	?
1	26	1	208.9/503.9	100.16	y	w	s	M	18–20	-	gracile	y	n
1	27	1	211.5/504.5	100.16	y	w	s	M	20–30	168.27 ±3.27	-	y	n
1	28	1	210.6/502.0	100.14	y	w	s	M	45+	-	-	?n	n
1	30	1	212.7/503.5	100.23	y	?w	?	M	30–40	165.95 ±4.05	-	n	n
1	31	1	211.6/501.1	099.95	?	?	?	M	45–55	167.81 ±4.05	-	n	y
2	22	1	211.5/499.7	099.88	y	w	s/p	M	45+	171.42 ±3.37	-	y	y
2	24	1	207.8/500.3	099.97	y	w/in	s	M	45+	187.84 ±3.37	robust	n	n
2	32	1	213.0/502.5	-	?	?	?	?	A	-	-	?	?
2	36	1	206.8/501.9	100.18	y	w/in	p	M	35–45	173.65 ±4.05	-	y	y
3	3	2	209.1/498.8	099.95	?	w	s/p	M	35–40	172.62 ±3.37	robust	n	y
3	8	2	214.8/498.6	100	y	w	s	M	25–35	180.17 ±3.32	massive	y	n
3	21	2	206.1/498.9	100	y	w	s	M	45+	-	-	y	y
3	25	2	210.2/502.7	100	y	w	s/p	M	17–25	167.32 ±3.37	-	n	n
3	29	2	209.0/504.7	099.95	y	w	s	M	25–30	167.47 ±4.05	-	n	y

Key: Gen = Grave generation, Or = orientation: 1 = east–west, 2 = parallel to Norman abbey, L = bottom level of grave, P = pillow stones y(es), w = woodstain, in = iron nails, Ha = hand position, s = by the side, p = across the pelvis, Path = pathology, Pm dis. = post mortem disturbance.

house bodies described as robust or massive belong to Generation 3. All the graves had wooden coffins, and, where the head survived, pillow stones. The arms were either straight (G. 8, G. 21, G. 29), or almost straight but over the pelvis (G. 3, G. 25).

The five graves of Generation 3 were thus as uniform as the graves of the preceding Generations 1 and 2. The only differences between the graves of Generation 3 and the graves of Generations 1 and 2 were:

1. Graves of Generation 3 lay parallel to the Norman abbey.
2. Graves of Generation 3 were dug to a uniform and deeper depth.
3. Graves of Generation 3 did not respect the eastern boundary of the cemetery of Generations 1 and 2.
4. Graves of Generation 3 did not fall into the established north–south rows, the three southern graves being placed in a strict east–west line, breaking the pre-existing pattern.

Although the graves of Generation 3 broke in some ways with the burial tradition, they did not disturb earlier graves, since the intersections involve only the upper fills of the earlier graves: the graves of Generation 3 were carefully placed in the existing cemetery. These men were buried with the same ritual, in exactly the same manner as the earlier graves, but they followed a new orientation. The only explanation for this can be that the construction of the east end and transepts of Paul of Caen's abbey church, begun in 1077, was sufficiently far advanced to be the determining factor in the layout of the latest graves in the cemetery to the south. By 1088 Paul of Caen had rebuilt the whole monastery, except for the bakehouse and buttery.[28] The chapter house which occupied the site of the cemetery must thus have been built by 1088, and the five graves of Generation 3 must have contained the bodies of monks buried between 1077 and the middle of the 1080s. The men buried here need not have been, and probably were not, Normans, for the burial ritual is entirely Anglo-Saxon. This is in contrast to Winchester, where the cemetery to the west of Old Minster continued in use until 1093, when Old Minster was demolished. Distinctive new grave-types, such as cists built of mortared chalk and limestone slabs, were introduced at Winchester in the second half of the eleventh century, in Old Minster Grave Generations 21–2.[29]

None of the graves of Generation 3 at St Albans had finds associated with the body, but the finds in the grave fills, unlike those in Generations 1 and 2, were interesting. Graves 3, 8, 21, 25, and 29 all had Roman finds and animal bone in the fill. Grave 25 also had two fragments, possibly pewter (*RF 903*), and G. 8 (which cut into the find-rich upper fill of ditch F. 543) contained human bones including a maxilla, vertebrae, and bones of the hand and foot. Since G. 8 did not cut into any other grave, these bones, like those found in G. 30 of Generation 1, should probably be interpreted as earlier than the pre-chapter house cemetery. Grave 8 also contained two early medieval sherds (*RF 944–5*), and two fragments of early relief-decorated floor tile.[30] The first (*RF 220*, St Albans Group I, Type E) is like the Anglo-Saxon glazed tiles now known from many sites including Old Minster, Winchester, where they appear from the mid-tenth century onwards. The second (*RF 245*, St Albans Group II, Type E?) is a type of tile which is probably later than Group I and may perhaps be of the earliest Norman date. There are a further 17 tiles of Group I and 26 tiles of Group II from the 1978 excavation, all found residually in layers later than Final phase 9.

Interpretation of the early cemetery

The cemetery sealed beneath the first chapter house of St Albans Abbey is to be understood as part of a monks' cemetery, 16 graves of which lay within the area of the excavation, all directly south of the Norman transept and slype. The eastern limit of the cemetery followed an ancient boundary, first established by a north–south ditch (F. 571) which had already been filled when burial started but may still have been marked by a fence or hedge. The southern limit of the cemetery was not found, but no human bone was found in the few earlier layers which had survived further south, giving the impression that the southern limit of the cemetery may be close. The western limit of burial as found is real, but its significance is not certain: either the cemetery never extended further west, not even as far west as the next in-filled north–south ditch (F. 501; Illus. 2.2.4), or there is a wide north–south gap in the cemetery, with graves continuing to the west of the in-filled ditch (F. 501). The northern limit of the cemetery lay north of the excavated area.

This small group of graves gives the impression of being an overspill cemetery, a new plot opened up perhaps because other parts of the Anglo-Saxon cemetery were being gradually covered by buildings. The cemetery was well organized, with the graves clearly marked. No graves of Generation 2 cut directly into a Generation 1 grave, but a soil level sealing a Generation 1 grave (G. 1) was cut by a Generation 2 grave (G. 22), demonstrating that there were at least two generations of graves separated in any one area by a distinct interval.

[28] See above, pp. 33–9.
[29] Biddle and Kjølbye-Biddle, WS 4.i., forthcoming.
[30] See below, Table 3.2.1.

Table 2.2.5. The Anglo-Saxon cemetery below the chapter house ordered by age at death

Grave	Gen	Or	Centre E /N	L	P	Coffin	Ha	Sex	Age	Stature (cm)	Build	Path	Pm dis.
10	1	1	209.5/497.7	99.87	?	?	?	?	A	-	-	?	?
32	2	1	213.0/502.5	-	?	?	?	?	A	-	-	?	?
25	3	2	210.2/502.7	100.00	y	w	s/p	M	17–25	167.32 ±3.37	-	n	n
26	1	1	208.9/503.9	100.16	y	w	s	M	18–20	-	gracile	y	n
27	1	1	211.5/504.5	100.16	y	w	s	M	20–30	168.27 ±3.27	-	y	n
29	3	2	209.0/504.7	99.95	y	w	s	M	25–30	167.47 ±4.05	-	n	y
8	3	2	214.8/498.6	100.00	y	w	s	M	25–35	180.17 ±3.32	massive	y	n
30	1	1	212.7/503.5	100.23	y	?w	?	M	30–40	165.95 ±4.05	-	n	n
3	3	2	209.1/498.8	99.95	?	w	s/p	M	35–40	172.62 ±3.37	robust	n	y
1	1	1	211.5/498.3	99.82	y	w	s	?M	35–45	-	gracile	n	y
36	2	1	206.8/501.9	100.18	y	w/in	p	M	35–45	173.65 ±4.05	-	y	y
28	1	1	210.6/502.0	100.14	y	w	s	M	45+	-	-	?n	n
22	2	1	211.5/499.7	99.88	y	w	s/p	M	45+	171.42 ±3.37	-	y	y
24	2	1	207.8/500.3	99.97	y	w/in	s	M	45+	187.84 ±3.37	robust	n	n
21	3	2	206.1/498.9	100.00	y	w	s	M	45+	-	-	y	y
31	1	1	211.6/501.1	99.95	?	?	?	M	45–55	167.81 ±4.05	-	n	y

Key: Gen = Grave generation, Or = orientation: 1 = east-west, 2 = parallel to Norman abbey, L = bottom level of grave, P = pillow stones y(es), w = woodstain, in = iron nails, Ha = hand position, s = by the side, p = across the pelvis, Path = pathology, Pm dis. = post mortem disturbance.

Table 2.2.6. The Anglo-Saxon cemetery below the chapter house ordered by generation and depth

Grave	Gen	Or	Centre E/N	L	P	Coffin	Ha	Sex	Age	Stature (cm)	Build	Path
1	1	1	211.5/498.3	99.82	y	w	s	?M	35–45	-	gracile	n
10	1	1	209.5/497.7	99.87	?	?	?	?	A	-	-	?
31	1	1	211.6/501.1	99.95	?	?	?	M	45–55	167.81 ±4.05	-	n
28	1	1	210.6/502.0	100.14	y	w	s	M	45+	-	-	?
27	1	1	211.5/504.5	100.16	y	w	s	M	20–30	168.27 ±3.27	-	y
26	1	1	208.9/503.9	100.16	y	w	s	M	18–20	-	gracile	y
30	1	1	212.7/503.5	100.23	y	?w	?	M	30–40	165.95 ±4.05	-	n
32	2	1	213.0/502.5	-	?	?	?	?	A	-	-	?
22	2	1	211.5/499.7	99.88	y	w	s/p	M	45+	171.42 ±3.37	-	y
24	2	1	207.8/500.3	99.97	y	w/in	s	M	45+	187.84 ±3.37	robust	n
36	2	1	206.8/501.9	100.18	y	w/in	p	M	35–45	173.65 ±4.05	-	y
3	3	2	209.1/498.8	99.95	?	w	s/p	M	35–40	172.62 ±3.37	robust	n
29	3	2	209.0/504.7	99.95	y	w	s	M	25–30	167.47 ±4.05	-	n
8	3	2	214.8/498.6	100.00	y	w	s	M	25–35	180.17 ±3.32	massive	y
25	3	2	210.2/502.7	100.00	y	w	s/p	M	17–25	167.32 ±3.37	-	n
21	3	2	206.1/498.9	100.00	y	w	s	M	45+	-	-	y

Key: Gen = Grave generation, Or = orientation: 1 = east–west, 2 = parallel to Norman abbey, L = bottom level of grave, P = pillow stones y(es), w = woodstain, in = iron nails, Ha = hand position, s = by the side, p = across the pelvis, Path = pathology.

Fill bone and charnels

Human bone other than from the main body is not common in the fill of the graves. Two of the Generation 1 graves had adult human bone in the fill (G. 10 and G. 30), and here the fill bone from G. 30 can with good reason be seen as deriving from the pre-cemetery layers. A large part of G. 10 was cut away by later events, but in the surrounding surviving area there was no trace of another grave which could have been cut by G. 10 and from which bones could have found their way into the fill of G. 10. Two of the four graves of Generation 2 also had adult human bone in the fill (G. 24 and G. 32). Grave 24 did not cut into another grave, unless it had removed it entirely and lay exactly in the same spot, but this is most unlikely since there is not enough fill bone to account for a complete body. Grave 32 lay largely below a later wall and could theoretically have cut another grave, but the part of G. 32 hidden by the wall is too short for there to be another adult grave nearby, unless it too was entirely cut away by G. 32, which is not likely. The whole site was cleared to the natural clay cap in 1978, and no other grave-cuts were found.

There are two direct intersections between graves of Generation 3 and 1 (G. 29 cuts G. 26; G. 25 cuts G. 28), but only the upper fills of the earlier graves were involved, and no bones were disturbed. Grave 8 was the only grave in Generation 3 to have bones in the fill and these were, as already noted, probably derived from earlier layers and not from a grave proper, since the fill bones are different in character, being very small and including those of a child.[31]

The fill bones found in five of the pre-chapter house graves are thus likely to derive from deposits earlier than the cemetery, and should be compared to the other human bones occurring occasionally in the pre-cemetery layers across the site.

Human bone was also found in a charnel probably dating from the construction of the first chapter house in the late eleventh century, but re-buried in a small charnel (F. 362)[32] in re-excavation of the 1920 trenches.[33] All the bones in this charnel came from men, some of a considerable age. The 1920 excavation disturbed the lower legs and feet of G. 21 (Generation 3), and replaced them in the charnel. The charnel also contained two skulls, a pair of fibulae, and other long bones. One skull and the fibulae could have come from G. 3 (also Generation 3), but Skull 1 is that of a man of 60–70 plus, and Skull 2 is of a man aged between 50–60 years, while the man in G. 3, who could have been disturbed by F. 362, appears from the limb-bones to be aged between 35–40. Any of the bones in the charnel could have come from G. 10 (Generation 1), but as G. 10 had been almost completely removed in 1976 by the machine-dug trench, as had the eastern part of the charnel (F. 362), the evidence for the charnel (F. 362) cutting into G. 10 and the extent of such disturbance had been removed.

The 1920 excavation of the chapter house did not disturb any of the intact graves of the abbots buried in the chapter house, and the bones collected in the charnel were almost certainly from the pre-chapter house cemetery, from G. 21 and perhaps from G. 10, but probably not from G. 3. At least one more grave must thus once have existed in this area of the pre-chapter house cemetery.

There is another deliberate deposit of human bone (Trench 3, Layer 580, F. 471), a small charnel placed at the east end of the robber-trench of the second apse (Final phase 16). These bones cannot have come from any of the excavated graves which lie more than 10 m away to the west and must have been gathered from graves disturbed elsewhere by Norman construction later than 1088, but earlier than *c*.1110. They probably came from the Anglo-Saxon cemetery for they were of the same type and not small like the bones from pre-cemetery layers (i.e. they are Group 2 bones, not Group 1).

The coffins (Table 2.2.7)

All the graves of which sufficient survived could be seen to have had straight (i.e. parallel-sided) wooden coffins between 0.35 and 0.40 m wide and 1.90–2.05 m long. The coffin had normally survived only as a straight outline with a wider grave fill outside its limits, and sometimes with dark staining along part or all of its edges. In four cases the wood of the bottom of the coffin had left a dark smear, but in only one case had the lid left any trace. The coffins were presumably held together by wooden pegs or joinery. None of the coffins was held together by iron nails, as is so often seen in ninth- and tenth-century Anglo-Saxon cemeteries. In two cases a single nail was found in the fill of the grave, but not on the bottom. Since no other nails were found, it is clear that iron nails were not generally present in the earlier levels cut by the graves. The single nails found in the two graves may thus have had a function in relation to the coffin, the obvious suggestion being that they had nailed down the lid, perhaps as a symbolic gesture or had fixed to the lid a wood, leather, or parchment panel perhaps bearing the name of the deceased or a prayer.

[31] See above, p. 28.
[32] See this page.
[33] Wigram 1924.

Table 2.2.7. The Anglo-Saxon cemetery below the chapter house: details of the coffins and head-rests

			Coffin			Pillow/head-support		
Grave	Gen.	Pm dis.	Lid	Bottom	In trench	Damaged	Flint	Tile
1	1	y	n	n	w	y	y	n
10	1	?	n	n	?	y	?	?
26	1	n	n	y	w	n	y	y
27	1	n	n	n	w	n	y	n
28	1	n	n	y	w	n	y	n
30	1	n	n	n	?w	n	y	?y
31	1	y	n	n	?	y	?	?
22	2	y	n	n	w	n	y	?y
24	2	n	n	n	w/in	y	y	n
32	2	?	n	n	?	y	?	?
36	2	y	n	n	w/in	n	y	n
3	3	y	n	y	w	y	?	?
8	3	n	n	n	w	n	y	y
21	3	y	n	n	w	n	y	y
25	3	n	y	y	w	n	y	?y
29	3	y	n	n	w	y	y	y

Key: Gen = Grave generation, Pm dis. = post mortem disturbance, w = woodstain, in = iron nails

Pillow stones (Table 2.2.7)

Where the head end survived, the graves all had a pillow or head-support of flints and tile placed inside the coffin. Normally the pillow would be arranged with the flints or tiles to either side of the skull, and behind or below the top the skull. The intention was not to add comfort, but to hold the head securely in position so that on the day of resurrection the dead would face east and see the risen Christ. Pillow or head-supports of this kind have been found in late Anglo-Saxon graves in many cemeteries, including Repton and Winchester, but never before in such a closed and consistent group.

Finds in the graves

The only object which seems to have been deliberately deposited with a body appears to be a hooked tag (*RF 284*; Illus. 5.8.1). Even this tag could theoretically have been residual, but G. 36 did not cut any find-rich layers from which such an object is likely to have been derived. Grave 25 contained two fragments possibly of pewter (*RF 903*), so decayed that even the material is not certain, which probably also represent an accompanying object, since G. 25 did not cut any deposits from which such an item is likely to have been derived. Grave 8 cut into the upper fill of ditch (F. 543), from which most of the finds in the fill could have come, but it also contained near-contemporary finds, such as two fragments of early relief-decorated floor tiles.[34]

Disturbance and reburial

There were no contemporary charnels in this cemetery. Feature 362 is a small charnel, composed of bones from graves disturbed during the 1920 excavation. The fill bones in the graves did not derive from the cutting of grave into grave, but from the earlier layers on the site. These earlier bones fall into two general groups:

1. Bones from children and bones from adults of slighter build than the males buried in the three generations of cemetery burial.
2. Adult bones, male when they can be sexed, and much like those found *in situ* in the pre-chapter house graves.

Bones of Group 1 were also found in the post-Roman and earlier Anglo-Saxon layers and features. No bones of Group 2 were found in these contexts: they came only from later Anglo-Saxon pre-chapter house layers. The bones from the charnel (F. 362) show that there was at least one and probably other graves in the

[34] See above, p. 28 and Table 3.2.1.

area. The bones from the small charnel (F. 471) in the robber-trench of the second apse probably also came from Anglo-Saxon graves, although not from any of those that were excavated because these lay 10 m west of F. 471. Sixteen graves from the pre-chapter house cemetery were found and the charnels add another five bodies, making a total of 21 known graves from this cemetery.

The skeletal remains[35]

Interpretation and discussion

The conclusion from the loose bones seems to be that we are dealing with two different groups, one which might ultimately be derived from the Romano-British cemetery known to exist to the west of the chapter house site;[36] and a second which is basically the same as the males buried in the pre-chapter house cemetery. In the second case, the bone from layers not in graves is not as a rule from individual graves excavated on this site, and the fill bone in the excavated graves is also not derived from other excavated graves on the site. The burials seem to have formed an overspill cemetery added as an extension to the main cemetery. Soil derived from digging foundation-trenches in the area of the main cemetery as it was encroached upon may have been dumped here, thus introducing the loose bones.[37]

Final phase 10 (c.1000–77): dumps and domestic occupation (Section 5)

Spreads which might be interpreted as dumps, but in this case later than some of the west–east graves, were found at the west end of the site (Section 5, Trench 1, Layers 327, 369, 370, and 371). Human bone occurred in Layers 369 and 371, and these western layers were in general rich in Late Saxon pottery, glass, and animal bone, as well as in residual Romano-British finds. Other layers like these were found in 1982–4 dumped in the late eleventh-century filling of the first Norman claustral buildings. These dumped layers also contained human bone, and the soil could be interpreted from the other finds to have been derived from Anglo-Saxon occupation layers as well as from a cemetery. Below the chapter house the layers were more rich towards the west, while towards the east into the area of Trench 2 less rich layers were found, in a similar stratigraphic position but containing very few finds.

[35] See below, p. 318–35.
[36] See above, no. 5, p. 28.
[37] See above, p. 30.

PART 2

3. THE CHAPTER HOUSES

by MARTIN BIDDLE *and* BIRTHE KJØLBYE-BIDDLE

INTRODUCTORY NOTE AND INTERPRETATION[1]

The sequence of chapter houses would be datable only in the very broadest terms on the basis of archaeological finds alone. The sequence can, however, be dated with some precision given two assumptions: (a) that the first apsidal chapter house (Final phase 11) was built by Abbot Paul of Caen between 1077 and 1088; and (b) that the first rectangular chapter house (Final phases 17 and 18) was built by Abbot Robert of Gorham between 1151 and 1166. The documentary evidence for these two episodes of construction is set out here,[2] and is accepted in the description of the excavated evidence which follows.

This dating is corroborated independently by the burials within the chapter house, all 15 of which (plus one in the adjacent walk of the cloister) can be identified with known historical persons whose dates of death are in most cases known to the year (Tables 2.3.1 and 2.3.2). The historical evidence for the location and identification of these burials is set out above, and the principal text is given in full in both Latin and English in Appendix I.[3] All 16 burials found during the excavation were in the positions indicated by the written sources. In several crucial cases the positions of these burials and/or the surviving evidence of their archaeological stratification allowed them to be related to the sequence of chapter houses. This made it possible to confirm the validity of the two basic assumptions set out above, and to provide dates for other events in the history of the building which were not recorded in the written sources. The detailed evidence of the individual burials and their implications for the structural history of the chapter house is set out in the archaeological description which follows, and the results have been incorporated later in the discussion.

[1] See Table 2.3.8 for overview of the coordinates used in calculating the distances between the different elements of the claustral complex at St Albans.

[2] See above, p. 6.

[3] See below, pp. 494–5.

I. THE FIRST (APSIDAL) CHAPTER HOUSE

Construction and levelling (Final phase 11, 1077–88). Final phases 11–12, 1077–93; Illus. 2.3.1; Sections 2–4, 7, and 8; Table 2.3.3

The plan of the first apsidal chapter house shows only foundations, robber-trenches, and floors (Illus. 2.3.1): the standing walls had nowhere survived. Even the foundations had been largely removed by the twelfth-century walls or were hidden below them. The small areas densely stippled indicate foundations surviving *in situ*; open stipple shows interpreted foundations. A solid line along the edge of a foundation means that this edge was observed; a broken line indicates an interpreted outline. This plan should be read in conjunction with the sections showing the evidence for the foundations:

West wall (W. 57) (Illus. 2.3.1A)	Sections 1–3
South wall (W. 49; Robber-trench F. 535)	Sections 7 and 8
East apse (Robber-trench F. 410)	Sections 4 and 9
Tie-wall (W. 51)	Section 4
East wall of undercroft (W. 30; Robber-trench F. 350)	Section 1

The north wall had been completely removed by the twelfth-century north wall of the later chapter house. The foundations of the external walls were 1.5 m wide (5 Imperial ft, 4.5 Carolingian ft). The internal north–south tie-wall (W. 51) was 1.15 m wide (3.75 Imperial ft, 3.5 Carolingian ft). The foundations are trench-built into the hillside, which was cut to form a level platform where the building was to stand. This levelling created a surface at around 100.40 m OD inside the chapter house to the west of the tie-wall (W. 51) and a surface 0.10 to 0.15 m higher in the apse to the east of W. 51. To the east of the chapter house the surface was levelled to around 100.65 m OD. In the range to the south the construction levels of the first undercroft did not survive, but its floor could not have been lower than 99.50 m OD in the northern part and, if there was already then a division,

Table 2.3.1. Burials inside the chapter house in order of date of death.

Rank	Name	Date of death	Grave number	Final Phase	Position (C/L = centre line)	Condition	Coffin	Monument ledger slab	Objects with burial
Abbot	Paul of Caen	1093	9, later 16	12, 13	C/L	Both graves robbed	G. 9 not known; G. 16 not known	Marble slab	None found
Abbot	Richard d'Albini	1119	14 or 17	14	N or S of C/L	Robbed	Barnack oolite with head niche	Marble slab	None found
Abbot	Geoffrey de Gorron	1146	17 or 14	14	N or S of C/L	Robbed	Barnack oolite with head niche	Marble slab	None found
Abbot	Ralph Gubion	1151	2	14	C/L. In vestibule, before screen door	Robbed	Barnack oolite with head niche	Marble slab	None found
Priest and monk	Robert of the Chamber	1154/59	23	17	N of C/L. In vestibule	Intact	Coffin-shaped earth grave with head niche	Not known	Pewter chalice *RF 281*
Abbot	Robert of Gorham	1166	19	19	C/L	Robbed	Not known	Marble slab	None found
Cellarer	Adam the Cellarer	1167/76	11	20	N of C/L In vestibule	Intact	Clunch with head niche	Marble slab with raised figure, later replaced	Book clasp *RF 250* and leather straps *RF 257, 259, 262, 275–6*
Abbot	Simon	1183	18	20	S of C/L	Robbed	Not known	Marble slab	None?
Abbot	Warin of Cambridge	1195	12	21	C/L. In former vestibule	Robbed	Purbeck marble with head niche	Marble slab	Ivory crozier *RF 103–4, 741–2, 2414*, Iron ferrule *RF 633*, gold thread *RF 620–1*
Abbot	John de Cella	1214	15	22	N of C/L	Robbed	Not known	Marble slab	None found
Abbot	William of Trumpington	1235	5	23	C/L	Robbed	Clunch with head niche	Marble slab	None found
Abbot	John de Hertford	1265	4	24	C/L	Robbed	Barnack oolite, ?with head niche	Marble slab	None found
Forester, cellarer, and prior	Adam Wittenham	d. after 1349	7	26	S of C/L	Intact	Wooden coffin, ?nailed	Purbeck slab?	None
Magister (layman)	Adam Rous	1379	6	26	N of C/L	Intact	Wooden coffin, nailed	Purbeck slab, brass indent	None
Abbot	John de la Moot	1401	13	27	C/L. In door of chapter house	Intact	Built shaft containing nailed wooden coffin	Flat marble slab, ?brass indent	None
Rector of Shackerstone	Bartholomew Wendover	1380/93	20	30	In cloister walk, approx. opposite door of chapter house	Intact	Wooden coffin, nailed	Marble slab	None found (upper half of grave not excavated)

Table 2.3.2. Burials inside the chapter house in grave number order.

Gr.	Name[4]	Abbot[5]	Age	Stature (cm)	Other	Coffin	F.ph.
2	Ralph Gubion	1146–51	30–40	?	fracture	Barnack	14
4	John of Hertford	1235–63	?70–80	?175.5 ±4.05	?	Barnack	24
5	William of Trumpington	1214–35	?50–60	?	?toothless	Clunch	23
6	Adam Rous*	d. 1379	40–50	156.72 ±3.27	bad teeth	Nailed/Pu	26
7	Adam Wittenham*	d. >1349	50–60	178.92 ±2.99	gout	Nailed/Pu	26
9	Paul of Caen, 1st	1077–93	?	?	?	Stone	12
11	Adam the Cellarer*	d. 1167/76	35–45	176.31 ±2.99	overbite	Clunch/Pu	20
12	Warin of Cambridge	1183–95	50–60	168.12 ±4.05	large head, fracture	Purbeck	21
13	John de la Moot	1396–1402	60+	184.8 ±3.27	healthy	Built	27
14	Richard d'Albini	1097–1119	?	?	?	Barnack	14
15	John de Cella	1195–1214	?	?	?	?	22
16	Paul of Caen 2nd	early 12th cent.	?	?	?	?	13
17	Geoffrey de Gorron	1119–46	?	?	?	Barnack	14
18	Simon	1167–83	?	?	?	?	20
19	Robert of Gorham	1151–66	?	?	?	?	19
20	Bartholomew Wendover*[6]	15th cent.	40	Small	?	Nailed	30
23	Robert of the Chamber*	d. 1154/9	40–50	170.41 ±2.99	hyperbrach.	Coffin shaped	17

probably no lower than 98.80 m OD in the southern part (Section 7). The hill was therefore sculpted to take the chapter house, and not just flattened into a general terrace.

Similar care was taken to the west in cutting the terrace for the first cloister (excavated in 1982–4) and in forming the ground for the eastern apses of the abbey church, where a plug of natural clay, capped by late Roman buried soils, survived in a few places immediately below the thirteenth-century floor of the presbytery.[7] To the west of the chapter house, in the area of the eastern walk of the cloister, there may have been some levelling down northwards from 496.7 m N, with perhaps some dumping to raise the level to the south. The surface was, however, a little lower here since the hill falls gently in a westerly direction as well as steeply to the south. Layers earlier than the late fourteenth century only survived above pre-chapter house layers in the east cloister walk at the extreme south-west corner of the 1978 excavation at around 201.490 and at a level of 99.80 m OD. Elsewhere extensive works to the eastern cloister walk in the late fourteenth century had removed all earlier levels.

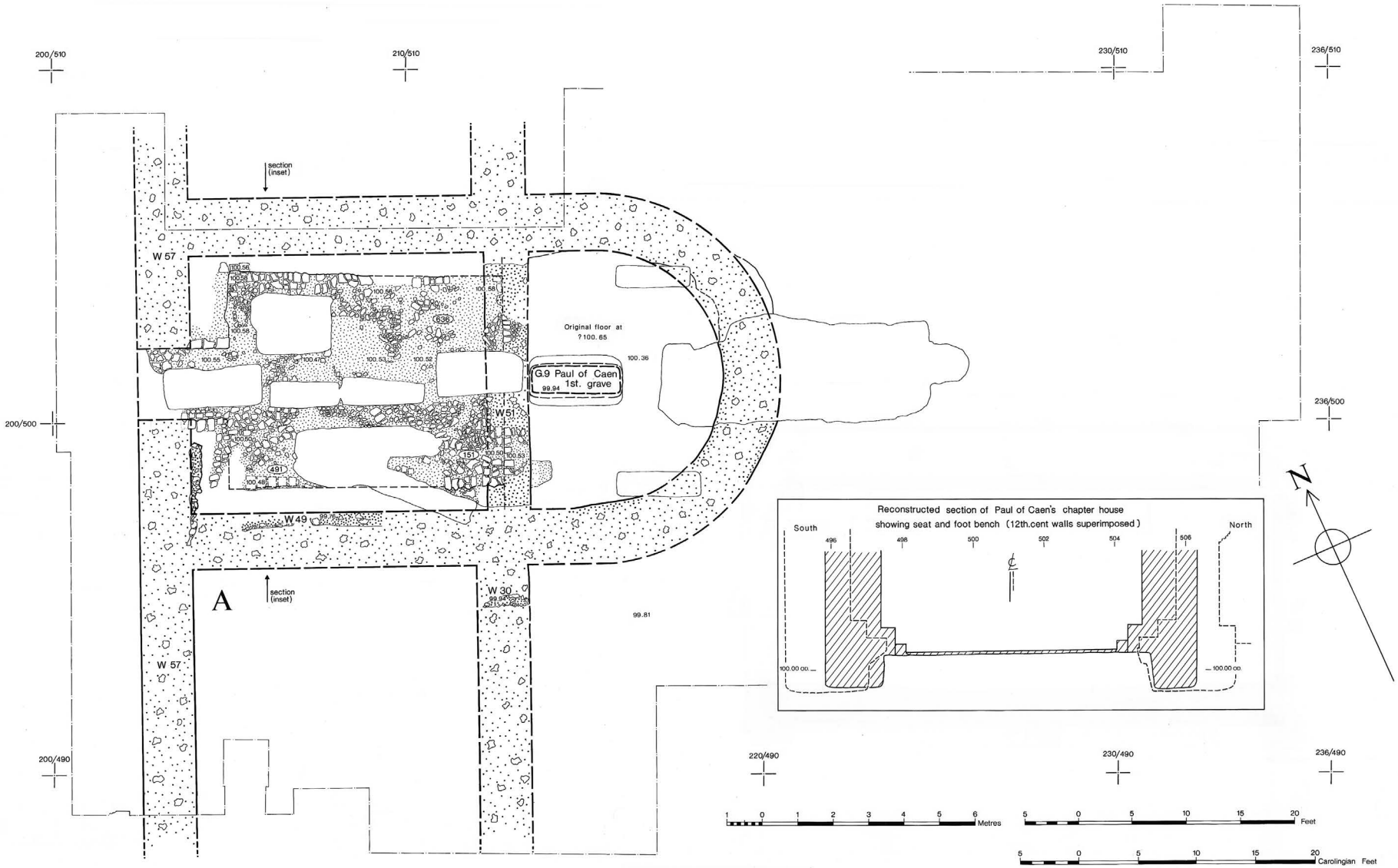
Wall construction

The mortar of the first chapter house was very hard, and was yellow-beige in colour, with good courses of flints up to 0.20 m in length. Roman tiles survived *in situ* down the centre-line of the tie-wall (W. 51), where the top edge of the step into the apse of the chapter house was finished with a layer of tiles (Illus. 2.3.1). Nowhere else had the foundation survived to floor-level.

Benches

After the foundations had been laid (and presumably before the walls had been built), but before the internal areas had been prepared for the flooring, spaces for benches and footsteps were allowed along the north and south walls as far east as the step on the tie-wall (W. 51), and along the west wall to either side of the west door, where the benches and footsteps were wider. Elsewhere the benches and footsteps were constructed in a somewhat roundabout manner (for their plan and a reconstructed section, see Illus. 2.3.1 and Sections 6 and 7). In all cases the construction of the benches seems to have been integral with the standing walls. This was the case in the later chapter house when it was rebuilt in the mid-twelfth century where the wall had survived

[4] Those marked with a * were not abbots.
[5] Abbots Wallingford, Mentmore (1327–49) and Whethamstede (1451–65) were not buried in the chapter house.
[6] Bartholomew Wendover was buried in the eastern cloister walk.
[7] As revealed by the absence of features of this date in excavation below the later medieval site of St Swithun's shrine in 1991. See Biddle and Kjølbye-Biddle 2001, Fig. 15.



Illus. 2.3.1. The first (apsidal) chapter house built by Abbot Paul of Caen, with stage A of the dorter range.

Table 2.3.3. Paul of Caen's church and chapter house: their main dimensions compared

Dimension	Metres	Feet
Church: N–S external nave, aisles	27.05	86.33
Church: N–S external transepts, incl. slype	63.02	204.83
Church: N–S external transepts	59.72	189.65
Church: N–S internal nave, aisles	22.86	75
Church: N–S choir including walls	14.88	44.58
Church: N–S choir excluding walls	9.14	30.92
Chapter House: external E–W	18.29	60
Chapter House: internal E–W	15.24	50
Chapter House: external N–S	10.57	34.8
Chapter House: internal N–S	7.62	25
Chapter House: external radius	5.18	17.3
Chapter House: internal radius	5.31	12.5
Distance: E face of W. 51 to W face of apse	5.61	18.75
Distance: E face of W. 51 to E face of west wall	6.12	31.25
Distance to the E face of W range of buildings at 496 N	36.27	119

well enough for this detail to be understood. In the first chapter house however, this meant that the benches extended beyond the foundations (Illus. 2.3.1, the reconstructed section). The footsteps along the north and south walls were added at the same general stage, but sequentially later. The bottom course of these steps had survived in places sufficiently well to show that they were edged with small oblong Roman tiles. Section 6 shows the bottom of the seating bench in section (F. 539) and in front of the bench two tiles forming the base of the footstep. In Section 7 only the mortar for the seating bench had survived (Trench 2, Layer 975). This would probably have run into the upper part of the north wall where the same section shows that this layer is earlier than the bedding for the floor (Trench 2, Layer 636).

East of the step in the tie-wall (W. 51), where the floor in the apse was higher and had thus been destroyed when the main body of the chapter house was extended to the east, no traces of the benches or footsteps had survived. This does not mean they had not existed, unless replaced by wooden furniture, for here would have been the seats for the abbot and the other principal officers of the house.

Preparation for the floors

The rectangular western area of the chapter house was then levelled up from 100.37 to 100.55 m OD with two horizontally laid beds of Roman tile and some flints bonded in compact bright orange-brown mortar mixed with pebbles and bits of chalk (see, for example, Sections 3 and 4, and 6 and 7: Trench 1, Layers 444, 491, 514; and Trench 2, Layers 149 to 153, 636, and 975). The top layer of tiles ended to the east along about 212.80 m east, against the front edge of a step formed 0.35 m from the west edge of the tie-wall (W. 51), which covered the eastern 0.75 to 0.80 m of the tie-wall (W. 51). To the east of the tie-wall (W. 51) only the bottom layers of the floor-bedding had survived (Section 4 and 8: Trench 2, Layers 924 and 934). The floor in the apse had nowhere survived.

The west wall (W. 57) of the chapter house continued south of the south wall (W. 49) of the chapter house. To the east and parallel to the west wall (W. 57), W. 30 ran south from the south wall (W. 49) with its east face continuing the line of the east face of the tie-wall (W. 51). Wall 57 and W. 30 followed the slope of the hill, so that at the south limit of the excavation (487.80 N) the bottom of W. 30 lay at 98.50 m OD (Section 1), while the bottom of W. 49, 9 or 10 m to the north, lay 1 m higher at 99.50 m OD. The rooms in this range were probably terraced into the hill already at this stage, but no internal walls had survived the later alterations which had also all but removed the primary external walls, together with all the contemporary internal and external layers.

The slype lying to the north of the chapter house was completely rebuilt first by Robert of Gorham in the twelfth century and finally by Lord Grimthorpe in 1886–7 (Illus 2.4.1A and C). No trace of the eleventh-century slype had survived these rebuildings but its west and east walls presumably followed northward the lines of W. 57 and W. 30, as suggested on Illus 2.3.1 and 2.3.2.

Interpretation

Table 2.3.4 gives the main dimensions of the successive chapter houses (for Paul of Caen's building, see Final phase 11). The internal dimensions are clearly the most important since the external width of the chapter house was hidden and so to a large extent was its external length.

Several dimensions occur both in the eleventh-century church and in the chapter house:[8]

[8] For the dimensions of the Norman church, see Neale 1877, 9–10, Plate 3.

Table 2.3.4. The main dimensions of the successive chapter houses: a summary

		External dimensions (to one decimal)						Internal dimensions (to one decimal)					
		Length		Width		Radius		Length		Width		Radius	
		(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)
First (apsidal) chapter house	F.ph. 11: 1077–88, wall width 5 I.ft. (1.5 m)	18.3	60.0	10.6	34.8	5.3	17.4	15.3	50.0	7.6	25.0	3.8	12.5
Second (apsidal) chapter house	F.ph. 13: 1093–*c*.1110	24.0	78.8	10.6	34.8	5.3	17.4	21.0	68.8	7.6	25.0	3.8	12.5
Proposed extension to the second apsidal chapter house	F.ph. 15: 1151	31.6	103.7	10.6	34.8	5.3	17.4	28.4	93.2	7.4	24.3	3.8	12.4
Third (rectangular) chapter house	F.ph. 17: 1154/9	30.6	100.5	12.5	41.0	-	-	27.5	90.5	9.1	30.0	-	-
Fourth (vaulted) chapter house	F.ph. 29: *c*.1450–*c*.1500	30.6	100.5	12.5	41.0	-	-	27.5	90.5	9.1	30.0	-	-

1. Lengths around 9.45 m (31 ft) and 9.75 m (32 ft) occur several times in the surviving parts of Paul of Caen's abbey church: in the transepts, tower, and presbytery. The two internal spaces in Paul's chapter house were in the golden or perfect proportion 3:5 and were also perfectly related to its overall interior length.
2. If the Norman south wall of the nave is presumed to be 1.73 m (5 ft 8 in.) wide like the north wall, the external width north–south across the nave (or choir) and aisles of the first Norman church is 26.31 m (86 ft 4 in.); one-fifth of this is 5.26 m (17.3 ft). This compares well with the external radius (R) of the chapter house apse and thus with half the external width of the chapter house, which using foundations and robber-trenches, as 5.28 m (17.4 ft). This cannot be chance. It is thus reasonable to suppose that the external radius of the apse was one-fifth of the external width of the nave.
3. The internal width north–south across the eleventh-century nave (or choir) and aisles is 22.9 m (75 ft). One-sixth of this is 3.8 m (12.5 ft). The internal radius of the apse of Paul's chapter house was 3.8 m (12.4 ft) (arrived at by calculation and interpretation using wall foundations and robber-trenches). The internal width of the chapter house would thus be 7.6 m (24.8 ft). Allowing for the rounding up and down of measurements and interpretations, this is remarkable, and the internal width of the chapter house must be seen as if it was one-third across the internal width of the nave and aisles (22.9 m or 75 ft). The internal radius (r) of the chapter house was thus one-sixth of the internal width of the nave.
4. The internal width north–south across the transepts is 53.5 m (175 ft 5 in.), approximately 7 x 25. The internal width of the transepts is 9.75 m (32 ft, south) and 9.98 m (32 ft 9 in., north).
5. The internal length of the western part of the chapter house (10.1 m or 31.25 ft) is related to the internal length of the eastern part at (7.39 m or 18.75 ft) in the perfect proportion 3:5 (see Table 2.3.3 and Illus. 2.3.1).

Finds

Nothing other than stone, tile, and mortar was found in the construction or occupation layers associated with the first chapter house. No copper-alloy objects were found in any of the post-Anglo-Saxon layers before Final phase 18 (the construction of the extended square-ended chapter house). Nor were there any iron objects from layers associated with Paul's chapter house, although a broken iron tool (*RF* 213) from Final phase 13 (the first extension of the chapter house) probably came from its construction or use,

Some of the worked stones (Table 2.3.5) may, however, provide information about the way the upper structure of Paul's chapter house was finished. Thousands of fragments of worked stone were found in the chapter house excavation. Of these, 552 were given a recorded find number and had a card written (in some cases covering several fragments). Of all the recorded stones 81.5 % are clunch (a pale green-grey chalk stone which is harder than chalk but much softer than limestone). The second most common stone is Purbeck marble with 48 cards written. Since no Purbeck marble fragments were discarded, this represents all the Purbeck found, including coffins. Twenty-one worked oolitic limestones

Table 2.3.5. Worked stone from the chapter house

RF given and index card written	Number	%
Tournai marble	19	3.4
Oolite, not coffin fragment	21	3.8
Oolite, coffin fragment	7	1.3
Barnack, often from a late context	7	1.3
Purbeck marble	48	8.7
Clunch approximately	450	81.5
Total recorded finds/cards, say	552	100

were recorded,[9] plus additional seven from coffins; again this will be all the worked oolite found. Nineteen pieces of Tournai marble were found and seven Barnack fragments in late contexts. The overwhelmingly large amount of clunch was not numbered.

Four of the 21 pieces of oolite come from early layers. One from Final phase 4 is probably a Roman ashlar. Four ashlars, three of oolitic limestone (*RF 861–3*) and an ashlar of ferruginous sandstone with a smooth plastered face (*RF 859*), were incorporated in the east wall of the undercroft (W. 24). This was built during Final phases 19 to 20 (between 1159 and 1183) and is the direct replacement of Paul of Caen's undercroft wall (W. 30). *RF 861* is a carefully cut voussoir with two curved faces; *RF 862* has a trapezoidal shape; and *RF 863* has solid ball moulding on a slightly curved face. Two insignificant fragments of oolite mouldings came from later medieval layers. A fragment of an early Norman circular shaft (*RF 2053*) and an early Norman hood-moulding of Barnack stone with a simple nicked impost and ball ornament (*RF 623*) came from eighteenth-century grave robbing (Final phase 35). There were three further pieces of oolite moulding from modern deposits, including *RF 6* with a keeled roll.

Limestone ashlars are thus very rare and pieces with significant moulding or shape especially so. Twenty-one of the recorded stones (3.8%) were oolitic limestone, of which five have significant shapes (0.9% of all recorded stone). Three of these come from an early wall and can only be derived from Paul of Caen's chapter house or undercroft. Together with the sandstone they show that one or both buildings was covered in plaster on at least one face and that there were arched openings, one with bold ball moulding. The Barnack hood-moulding was from a late layer and may not derive from the chapter house. Clunch was not used in another of the apsidal chapter houses.

No window glass or windowlead was found in any layers earlier than Final phase 27, dating from the end of the fourteenth century. If there had been glass in most windows, some ought to have been found in earlier deposits. The absence of glass is not a certain negative but does suggest that it is unlikely that there were large windows with glass in Paul of Caen's chapter house.

The use of the first apsidal chapter house

Few layers could be associated with the very short-term primary use of the first chapter house. The most important event was the burial of Abbot Paul of Caen in 1093. His grave was dug in the apse on the central axis, immediately above and to the east of the step dividing the interior into two parts, the most prominent place inside the chapter house (Illus. 2.3.1: G. 9). When his body was translated soon afterwards into the apse of the enlarged chapter house, a large pit (F. 559) was dug for the translation.[10] Splinters of Barnack limestone found in this pit suggest that Paul was originally buried in a monolithic coffin of Barnack stone which was damaged upon removal.

There would have been room in the first chapter house for about 56 monks, allowing about 0.46 m (18 in.) for each place. This would give about 24 places inside the curve of the apse, allowing a double space for the abbot's seat, and 32 to the west of the step. These figures suggest the maximum size of the community for which Paul had planned. The actual number may at first have been considerably smaller, but the subsequent extensions of the chapter house suggest a rapid expansion in the size of the community throughout the first half of the twelfth century.

II. THE SECOND (APSIDAL) CHAPTER HOUSE

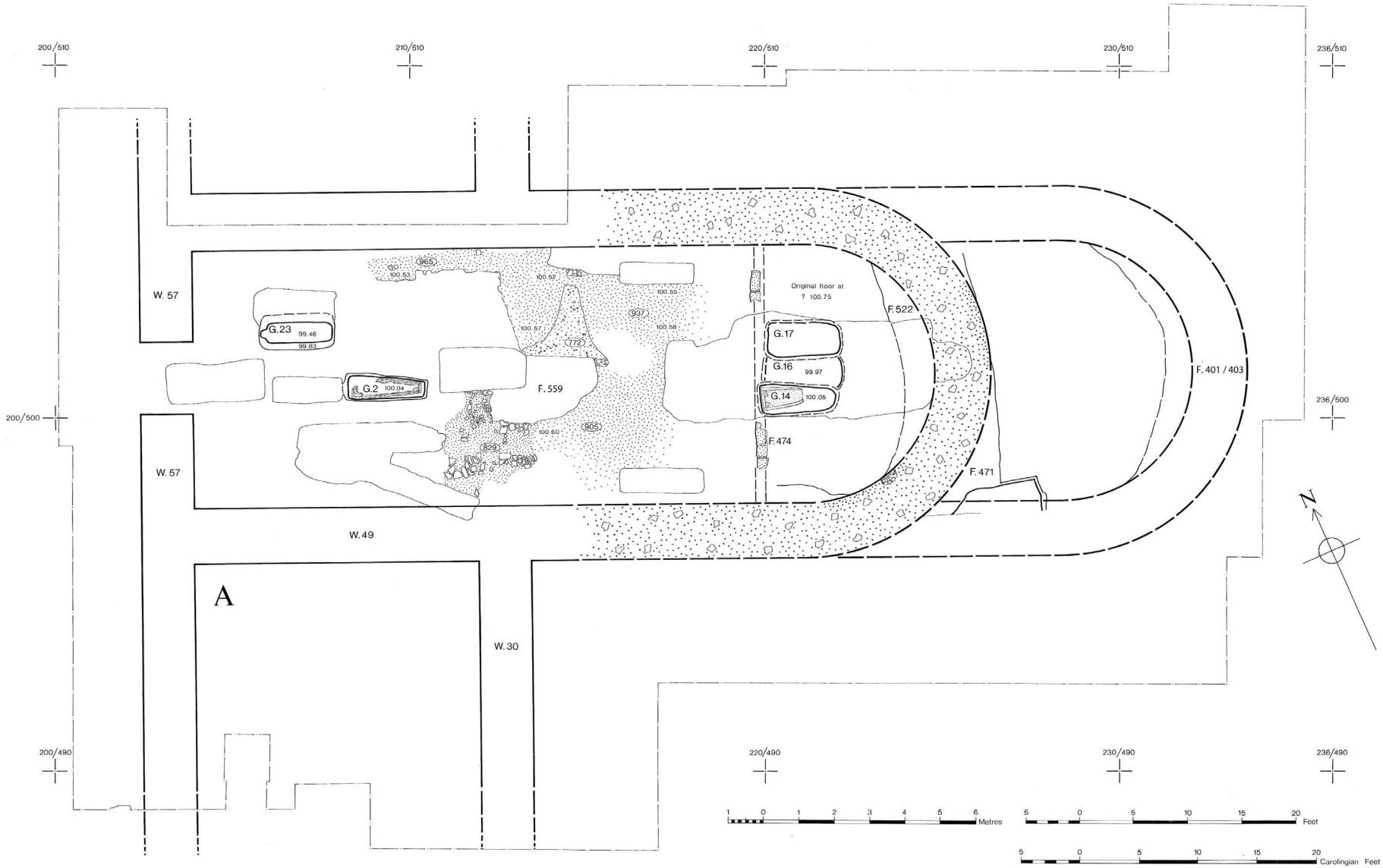
Final phases 12–14, 1088–1151, Illus. 2.3.2

Abbot Paul's chapter house had a short life, during which it was twice extended eastward before it was completely rebuilt in 1154/9. The first extension happened after Paul's death in 1093 and his burial in Grave 9, but before the burial of Abbot Richard d'Albini in Grave 14 in 1119.

The evidence for this first extension survived only in a very damaged robber-trench (F. 522 = F. 471). The length of the extended chapter house was about 24 m (78.8 ft) externally and 21 m (68.8 ft) internally. The apse was moved eastward by the internal length of the apse of the first chapter house, i.e. by the same distance as that between the east face of the tie-wall (W. 51) and the internal (west) face of the first apse

[9] See below, pp. 41.

[10] See Illus. 2.3.2, G. 16.



Illus. 2.3.2. The second (apsidal) chapter house built by Abbot Richard d'Albini and its proposed (apsidal) extension, with stage A of the dorter range.

(5.7 m or 18.75 ft). An extra layer of reused Roman tiles was laid in the western part of the first chapter house, bringing the floor up to the level of the area east of the step in the tie-wall (W. 51). A new step (Illus. 2.3.1, F. 474) was laid with its west face about 6 m (19.7 ft) east of the east face of the tie-wall (W. 51), and 5.4 m (17.7 ft) west of the supposed inner face of the new apse. The original surface to the east of the new step (F. 474) lay at a higher level than the area to the west (Section 4). The internal length of the extended chapter house at 21 m (68.8 ft) was thus divided in a ratio of about 1:4, apse to nave, at 5.2 m (17.2 ft) to 21 m (68.8 ft).

The stone coffin of Paul of Caen, which had been placed in the most prominent place in his own chapter house (Illus. 2.3.1, G. 9), was now translated to the corresponding and equally prominent place inside the new apse, on the central axis immediately to the east of the new step (Illus. 2.3.2, G. 16). Although this new grave (G. 16) was robbed after the Dissolution and later, in common with all the other graves in this area, the second (and final) position of Paul of Caen's coffin is thus reasonably certain.

Finds

From the robber-trench of the first apse and the construction levels and floors of the extended chapter house, there were few finds other than considerable quantities of reused and residual Roman material. Two fragments of Anglo-Saxon relief-decorated tiles[11] were found in the robber-trench, together with an iron-working furnace bottom, burnt clay, and animal bones. These finds are like those from the upper part of the middle ditch (F. 543). There were also fragments of the wall plaster and mortar found throughout, and chips of Barnack limestone from the empty grave-pit (F. 559) from which the body of Paul of Caen had been translated (Illus. 2.3.2). A splinter of RDFT (the type of relief-decorated floor tile used in the mid-twelfth century)[12] found amongst a group of greensand (clunch) pieces should be seen as contamination, since it had probably slipped into the loose areas between the stones, perhaps when the chapter house was refloored in the mid-twelfth century

The use of the second apsidal chapter house

There was room for about 76 monks in the enlarged chapter house. Abbot Richard d'Albini was buried in 1119 (Illus. 2.3.2, G. 14)[13] inside the apse, most probably to the south (that is to the right hand) of Abbot Paul, his predecessor. Since there was no other empty burial-pit within the first, unextended, chapter house, the burial of Abbot Richard in the extended apse shows that the extension must have taken place by the date of his death in 1119. If this is correct, Abbot Geoffrey de Gorron was buried on the north side of Paul in 1146 (G. 17). All three graves were thoroughly robbed after the Dissolution but the head end of a Barnack oolite coffin had survived in G. 14, pushed slightly to one side, but basically still *in situ* (Illus. 4.4.1). The coffin was crudely shaped: the bottom of its angular head-niche was level with the bottom of the rest of the coffin which became gradually thinner towards the foot end. The coffin is 0.68 m wide at the head end and 0.52 m at the break. The slightly splayed sides are 70 to 80 mm wide. Although some fragments of human bone were found in and around these graves, they had all been disturbed and cannot be allotted to any one burial.

We are, however, in a much better position with the last abbot buried in the chapter house, Ralph Gubion (1146–51). As there was no longer any space for coffins in the apse, Abbot Ralph was buried in a coffin of Barnack oolite (Illus. 2.3.2, Illus. 4.4.1, G. 2) on the central axis of the main body of the chapter house, with the head of the coffin at the mid-point of the western or 'nave' compartment of Paul's chapter house. This suggests that the line of the original step in the tie-wall (W. 51) was still visible in the floor, even if it was no longer in use. The grave was robbed twice, by F. 134 and by F. 348. The remains found in these features were very fragmentary but enough survived to establish that a 30- to 40-year old man with a healed fracture of the fibula had once lain in this coffin.[14]

The coffin (Illus. 4.4.1, G. 2) was 2.08 m long and tapered from *c*.0.6 m at the head to 0.4 at the foot end. The coffin was beautifully made. The sides splay out a little at the ends, and very noticeably at the long sides. The head-niche is carefully rounded with a bevel (in spite of the hardness of the stone) and the bottom of the niche seems to have been at the same level as the rest of the coffin. The coffin sides are only between 70 and 80 mm wide, except to the north and south of the head-niche where it measures 0.13 m.

The proposed extension to the second apsidal chapter house (Final phase 15, 1151–54/9, Illus. 2.3.2)

It was probably during the abbacy of Ralph Gubion (d.1151) that the next extension was planned and foundation trenches dug for yet another eastern apse (Illus. 2.3.2, F. 401/403; the eastern robber-trench). When Abbot Ralph died, the second chapter house was still clearly in use. New works had begun, but the existing apse had not been demolished. It is possible

[11] *RF 897* of Type B and *RF 898* of Type A, see below, pp. 74–6.
[12] See below, Table 3.2.2, pp. 106–7.
[13] Richard d'Albini could have been buried to the north of Abbot Paul, but the way the coffins fit into Robert of Gorham's chapter house makes it clear that G. 14 was placed in position before G. 17, which is much less central (Illus 2.3.3 and 3.2.19).
[14] See Table 2.3.2

that the new foundation-trench had been dug on the orders of Abbot Robert of Gorham (1151–66) after the death of Abbot Ralph but that would mean that Abbot Robert had completely changed his mind and having at first been satisfied with an enlargement of the apsidal, tile, and lime-stone-built chapter house, had decided that a totally new concept in plan and detail was required. Not just that, but new quarries were to be used, different stone carvers, different flooring. It involves fewer assumptions and is most economical to accept that the third extension should be seen as a continuation of the old, and that the new started with the next abbot. The third apsidal chapter house would have been able to seat about a hundred monks, a large community, and a clear indication of the size it had reached or was expected to reach by the middle of the century.

The finds in the unused foundation-trench were residual Roman and Anglo-Saxon sherds which can give no more than a *terminus post quem* for the construction of the chapter house.

III. THE THIRD (RECTANGULAR) CHAPTER HOUSE

The demolition of the second apsidal chapter house (Final phase 16, 1151–54/9, Illus 2.3.2 and 2.3.3 and Section 4)

The robbing of the earlier structure was very thorough: wherever the wall-foundation was not exactly reused, the flint and mortar foundations were removed, leaving robber-trenches such as the shallow irregular robber-trench (F. 471 = F. 522), which is the only indication of the position of the apse of the first proposed extension. Any stone floor was taken from its mortar bedding without leaving a trace. There does not seem to have been much levelling inside the old chapter house, where the floor-bedding survived to varying degrees over most of the interior. To the east, in the area intended to be enclosed by the third apse, no floor-bedding has survived, and none was probably ever laid in preparation for the enlarged apsidal building.

The finds from the demolition

The finds from the robber-trench (F.471 = F.522) are entirely residual. They include a facetted ceramic square (46 x 46 mm, *RF 777*) which, although unglazed, could be an unusual type of tile. In Trench 3, Layer 580, a small charnel of human bone contained remains which cannot have been derived from any of the Anglo-Saxon graves excavated further to the west, since none were disturbed by the robber-trench of the second apse. The bones must therefore have come from the earlier cemetery, either from the Anglo-Saxon burials of Generations 1 and 2 or from Anglo-Norman burials of Generation 3. The bones were probably disturbed by the extensive works involving the complete reconstruction of the chapter house carried out by Abbot Robert of Gorham, Ralph Gubion's successor.[15]

Construction (Final phases 17–18, 1154/9–66)

Having demolished the apsidal chapter house, and in the process ignored the intended eastern extension, Robert of Gorham (abbot 1151–66) rebuilt the chapter house *a fundamentis* (see Tables 2.3.6 and 2.3.7).[16]

Table 2.3.6. Robert of Gorham's chapter house: the main dimensions. The measurements rounded by at most 1 per cent of the length.

Dimension	Metres	Imp. ft
Chapter House: external E–W	30.5	100.5
Chapter House: internal E–W	27.6	90.5
Chapter House: external N–S	12.5	41
Chapter House: internal N–S	9.1	30
Distance to E face of Cellarium at 496 N	45.4	149

Table 2.3.7. Robert of Gorham's chapter house: the ideal internal proportions

Between internal wall faces	Prop.
Length to width (90:30 ft)	3:1
Vestibule to main area (20:70 ft)	2:7
The main area was (35:35 ft)	1:1
Vestibule to the parts of the main area (20:35:35 ft)	4:7:7

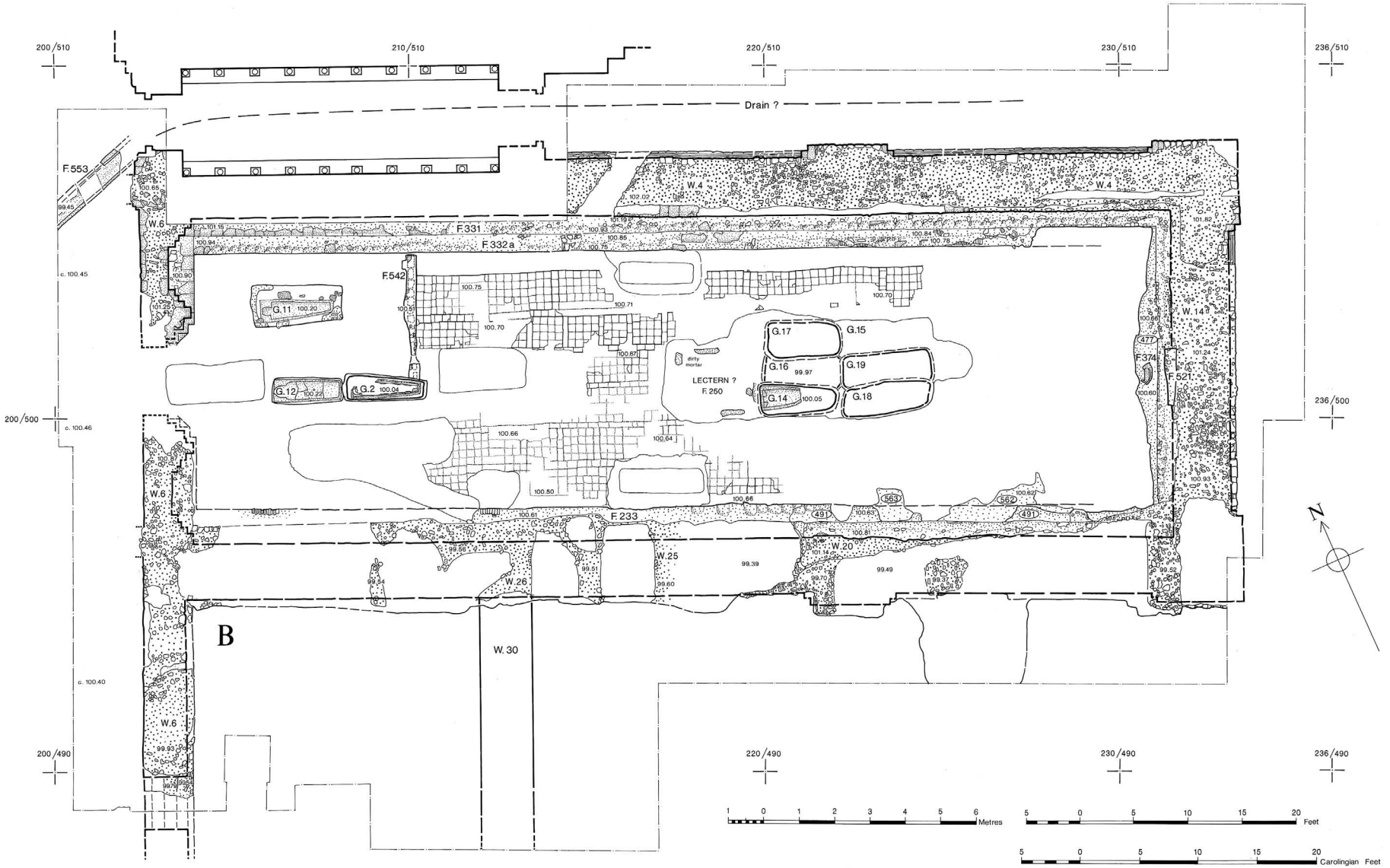
The site

Robert of Gorham was thus presented with a prepared site which he used to the full (Illus. 2.3.3). The way the new chapter house was fitted upon the old shows clearly that already at this early stage in the life of the medieval claustral buildings there were severe restraints upon the site:

1. The east faces of the eastern angle buttresses of the new chapter house fall no further east than the crown of the apse of its intended predecessor, as near as can be calculated.
2. The new west wall (W. 6) lay on the same line as its predecessor (W. 57) and reused the earlier foundations from ground-level down.

[15] For a contemporary reference to Abbot Robert's disturbance of burials during the rebuilding of the chapter house, see above, p. 494–5. The implication of which seems to be that by the 15th cent. the pre-conquest abbots were believed to have been buried 'in the chapter house' i.e. on the site of the then late 15th cent. chapter house.

[16] See above, p. 20.



Illus. 2.3.3. The third (rectangular) chapter house built by Abbot Robert of Gorham, with burials to 1195, with stage B of the dorter range.

3. The south wall (W. 26) was moved 1 m further south.
4. The north wall (W. 4) was moved 0.8 m further north.
5. The east face of the east wall of the slype was moved only about 0.2 m further east.
6. The east wall of the undercroft (W. 30) was reused.

Foundations

The new walls had trench-built foundations 2.4 m wide at floor-level and going down to about 0.90 m below floor-level. The walls were constructed of hard dark orange-yellow mortar flecked with large pieces of chalk and flint, with the occasional reuse of a limestone ashlar, presumably from the earlier chapter houses.[17] Some reused Roman tiles were identified in the edges of the foundations, but not many; below ground, mortar and flints were mainly used, as can be seen in several sections. The bottom bed of the south wall (W. 25), for example, survived up to almost 0.35 m thick but was composed solely of mortar and flint (Sections 7 and 8). By the mid-twelfth century, supplies of Roman tile were apparently already less ample than they had been in the time of Paul of Caen.

Grave 23 (Robert of the Chamber)

Grave 23 (Illus. 2.3.2, Section 6, and Illus. 4.2.1) seems to have been dug while the new chapter house was being built. The pit of G. 23 cuts into G. 36, an Anglo-Saxon grave, through the floor of the first chapter house (Trench 1, Layers 444, 514, and 491), and through the floor of the extended apsidal chapter house (Final phase 13; Trench 1, Layer 443). Grave 23 was, however, sealed by the primary floor of the new rectangular chapter house and was in turn cut by the insertion of the grave of Adam the Cellarer (d.1167/76, G. 11, Illus. 4.2.1).[18] The pit of G. 23 was itself coffin-shaped; it had a head-niche and it tapered towards the foot, with ledges to either side upon which planks had been placed (Illus. 4.2.1). When the planks decayed, the fill above collapsed into the void below as can be seen in the section across the grave (Section 6). The finds in the fill of the grave are discussed below.

The only find which was certainly contemporary with the burial in Grave 23 was a pewter chalice (*RF 281*) which had been placed on the right side of his chest. It was completely decayed but it left enough of a stain to show that it lay with its mouth to the north having fallen over in this position before the planks collapsed. The body was that of a man, but the preservation was poor and incomplete. Green and black flecking was present on many of the bones apart from the spine, the skull having the most. The skull was heavy and large, while the skeleton was slight. An injury above the left knee and the way the musculature had developed suggest that he walked with a limp. The skull is asymmetrical and hyper brachycephalic. The two other skulls where the cephalic index could be obtained (Graves 7 and 13) were mesocephalic, as is usual for the medieval population.[19] This suggests that the body in G. 23 may be of a different ethnicity. His age, using conventional ageing methods, suggests that he was at the most 50.[20]

Interpretation of Grave 23 (Robert of the Chamber)

All ten abbots from Paul of Caen (d.1093) to John of Hertford (d.1265) were buried in the chapter house. During these two centuries only two men who were not abbots were buried in the chapter house. One of these was Adam the Cellarer (d.1167/76) whose grave was visible throughout the Middle Ages and readily identified on excavation.[21] As already stated, Adam's grave (G. 11) was cut into G. 23, an earlier earth-grave which contained the burial of a priest, his status identified by a pewter chalice (Illus. 4.2.1).[22] The body in G. 23 was covered by wooden boards which rested on ledges left about 40 cm above and to either side of the deeper pit for the body and the grave was sealed by the tiled floor of the rectangular chapter house.

The green and black flecking on the bones was probably caused by the slow decay of cloth while there still was a void above the body and the cloth was not in direct contact with the earth. Although the crisp, wafer-like fragments of relief-decorated tiles could be primary in the fill of G. 23 (Table 4.4.2),[23] they and the other finds, apart from the pewter chalice, must be regarded as having fallen into the grave when the filling collapsed through the decayed boards into the void below.

The upper walls and floor of the chapter house (Illus 2.3.3 and 3.2.19)

Along the inside of the north, west, and south walls, a bench for seating and a foot bench were built forming an integral part of the new walls, with the foot benches upon the offset of the foundations (Section 6–8). In the centre of the east wall (W. 14), a recess marked the position of the abbot's seat (F. 521), with steps leading up to it (F. 374). The benches were 0.91 m (3 ft) wide overall (seat, 0.4 m; foot bench 0.5 m) and were built in a crumbly chalky mortar. The seating benches were

[17] See above, p. 42.
[18] See below, p 48 and Table 2.3.1.
[19] See p. 319.
[20] See below, pp. 372–5.
[21] See below, p. 341
[22] See this page.
[23] See above, p. 387.

Table 2.3.8. St Albans Abbey coordinates used in calculating distances between the major elements of the claustral complex

Letter	Description	Easting	Length	Distance
Line A	W face of Paul of Caen's and Robert of Gorham's chapter house	202.40/*c*.496		
Point B1	E face of 11th cent. western buildings	166.13/496	A–B1	36.27 m = 119 ft
Point B2	E face of 11th cent. western buildings	165.95/488.60	A–B2	36.45 m = 119.59 ft
Point B3	Possible junction of western and ?southern 11th cent. western buildings	165.82/488.02	A–B3	36.27 m = 119 ft
Line C	E face of cellarium	156.97	A–C	45.42 m = 149 ft
Line D	W face of W cloister walk	157.4	A–D	45.00 m = 147 2/3 ft
Line E	E face of bench along W cloister walk	157.8	A–E	44.60 m = 146 1/3 ft
Line F	W face of E wall of Romanesque W cloister walk	161.77	F–D	4.37 m = 14 1/3 ft
			F–E	3.97 m = 13 ft
Line G	W face of E wall of Gothic W cloister walk	162.51	G–D	5.11 m = 16 3/4 ft
			G–E	4.71 m = 15 1/2 ft
Point H	Junction between S aisle and S transept	*c*.201.5/524.2	H–B3	50.8 m = 166 3/4 ft
Line J	Possible W face of possible SW tower	*c*.140	H–J	61.5 m = 201 3/4 ft
Line K	Cord of east apse	*c*.244.1	J–K	104.1 m = 341.54 ft
Line L	Point of transept apses	*c*.226.4	J–L	86.4 m = 283.46 ft

formed of two courses of clunch ashlars, the upper angle chamfered, as shown by the upper course which survived only as a single stone at the extreme west end of the north bench (F. 331 on the north side, see Illus. 3.2.18). The foot bench was almost entirely rebuilt in the thirteenth century (Final phase 24; F. 332b) when it was probably also provided with chamfered ashlars. In its primary form (F. 332a on the north side and F. 233 on the south (Section 8), its front edge was formed of a row of a distinctive type of Roman tiles set on edge. These were small oblong tiles, approximately 130 mm by 63.5 mm (5 in. by 2.5 in.) used here for constructing herring-bone pavements, several hundred of which must have been used to form the primary foot benches, and were presumably taken from a stockpile, which came from the robbing of one or more such pavements in the Roman city.[24]

The preparation for the floor

The lower chalky mortar of the primary foot bench (F. 332a) was a continuation of the upper bedding layer of the mortar floor which lay immediately below the mortar on which the tiles were set. The direct continuation between the floor and the foot bench survived in only one area (Section 7, Layer 630), having been destroyed elsewhere by the building of the foot bench (F. 332b) and by the relaying of the tiles immediately alongside (F. 465). Below the upper chalky spread, several thin mortuary spreads (i.e. Section 7, Layers 631–2, 912, 944 and 947) levelled up the unevenness of the earlier chapter house's floor (Section 7, Layers 634–6 and 975). These bedding layers varied in thickness between 0.2 m (as seen on Section 4) above F. 543 at 215 E., Layers 142–6, 770–1) and 0.02 m (i.e. Layer 496 at 222 E.). East of the robbed apse of the second chapter house, there was of course no earlier floor to be levelled (Section 3 and 4).

Four stone coffins would have had their covers at floor-level in the new surface (Illus. 3.3.19; G. 2, G. 14, G. 16, and G. 17), and one earth-grave was covered by the floor (G. 23).[25] A rectangular pit to the west of the eastern group of graves is probably the site of a lectern, surviving only as the robbing hole (F. 250, *c*.0.9 by 0.9 m) left after its foundation was robbed after 1539.

At the eastern end of G. 2, the chapter house was divided in two by a north–south screen that defined the western limit of the vestibule (F. 542). All traces of this feature had been removed south of G. 2 by later events, but north of G. 2 (Illus. 2.3.3) a mortared foundation survived, 0.24 to 0.26 m wide, bearing the impressions of clunch ashlars each measuring about 0.3 by 0.18 m (1 ft by *c*.7 inches). The north end of the foundation of the screen butted against the foot bench on the north wall and its south end against G. 2. About 0.2 m south of the north end

[24] Frere 1972 and 1984.

[25] See above, p. 44.

of the northern screen, the imprint of a pilaster had survived on the west face of the screen. Above ground this pilaster may have measured about 0.15 m by 0.25 m (6 in. by 10 in.). About a metre further south, there is a more diffuse imprint of a pilaster which could have had the same measurements as the northern pilaster and the distance between them would then have been 0.91 m (3 ft).

The standing walls of the chapter house above the benches were 1.67 m (5.5 ft) wide, apart from the west wall which was only 1.5 m (5 ft) wide (or 1.2 m or 4 ft if the thicknesses of the west wall of the slype and undercroft were followed). The inner faces of these walls were dressed in clunch ashlars. Externally they were finished in horizontal beds of reused Roman tile separated by mortar beds almost as thick as the tiles. The outer east face of the east wall was built from the ground as follows: four level courses of four tiles, followed by two courses of flint or limestone, then one tile-course, a flint course, and another tile-course (Section 3 and 4). There were double-stepped buttresses 0.30 m (1 ft) deep clasping the north-east and south-east corners (at the south surviving only in a robber-trench). Externally (Illus. 3.2.18) there were opposing buttresses with centre-lines one-third of the internal distance from the east end. The outer faces of the buttresses were 2.8 m (7.25 ft) wide, their inner faces 2.6 m (8.5 ft). On the west face of the chapter house, opposite the lines of the north and south walls, the buttresses were about 1.5 m (5 ft) wide and projected about 0.15m (6 in.). At around 0.5 m (say 1.5 ft) above ground-level there was a chamfer on the west wall. This was created by stepping back the tiles or by chamfering the top edge of the clunch ashlers on the buttresses, the angles of which were all turned in finely jointed clunch ashlar. The decorative elaboration of walls will be described below.

The floor

After the walls, benches, and screens had been built, an elaborate floor of 0.23 m (9 in.) square, glazed, relief-decorated tiles (RDFT) was laid. The tiles were of five basic patterns (Types A to E) with in addition oblong border tiles of one pattern (Type F). About 3,550 tiles would have been needed to cover the whole floor (Illus 3.2.18 and 3.2.19). Of these only about 250 (seven per cent, counting fragments of tiles *in situ* as one tile) were found in their undisturbed, primary position. The original mortar bedding had, however, survived over large areas where the use of the narrower border tiles showed what the basic original layout had been. In several further several cases, where a small part of the floor had been re-laid, it is clear that the same tiles were used and the pre-existing pattern re-created. These tiles could sometimes therefore provide a guide to the original design.

The original floor or its bedding survived mainly in the middle of the chapter house, from immediately east of the screen as far as north and south of the lectern and the eastern group of graves (Illus. 3.2.18 cf. Illus. 3.2.19). The pattern of survival shows where the use had been heaviest (Illus. 2.3.3 cf. Illus. 2.3.4):

1. All the tiles in the vestibule had been re-laid on a fresh mortar bed.
2. The tiles in narrow strips along the benches had been re-laid.
3. Along the central 2 m strip east of the screen up to the lectern the original tiles had gone, but the mortar had survived immediately to the west of the lectern (Illus. 2.3.3).
4. To the south of the eastern graves the tiles and the mortar had gone.
5. To the east of these eastern graves no tiles or mortar had survived. This lack of tiles at the east end can scarcely be due to heavy use but could be explained by the tiles and their mortar bedding lying here directly on the hard natural clay cap, which may have made them more vulnerable, while further to the west the tiles lay on deep beds of earlier well bonded mortar.

The tiled floor of this enlarged chapter house is described in detail and discussed below.[26]

Finds

Only residual Roman finds plus human and animal bone and iron nails were found in Final phase 16 (1151–54/9), the demolition-spreads from the last apsidal chapter house. An exception is a hard fired, fine grained pale grey ceramic square (*RF 777*), with sides about 46 mm long at the flat top, and a thickness of 20 mm, which was found in the robbing of the south wall of the first chapter house (F. 450). Its bottom surface is about 20 mm square. The piece narrows in two well defined facets from top to bottom. A curious tile which looks pre-Norman, it is of a similar fabric to the relief-decorated Anglo-Saxon tiles, but no exact parallel has been found. It is possible that *RF 777* could be part of a complex mosaic pattern. No trace of glaze had survived.

Main construction activity (Final phase 17, 1154/9–66)

The pewter chalice (*RF 281*) from G. 23 (Illus. 2.3.2) is the most important find but is too decayed to give any hint as to its date. From the fill of G. 23, which is a mixture

[26] See below, pp. 108–45.

of primary fill and later layers collapsing into the void, and therefore phased as spanning Final phases 17 to 24 (1154/9 to *c.*1300), came human and animal bone, oyster, four fragments of Roman tile, five fragments of relief-decorated floor tile of the type used in the new chapter house floor (two wasters of Types A and G and three fragments which were worn), as well as one fragment of medieval clay roof tile. From the many other layers excavated came animal bone, iron nails, plaster, a lead cramp, RDFT wasters, and residual Roman finds including a Roman moulding (*RF 653*). There were also two fragments of an Anglo-Saxon glazed relief-decorated tile, of which *RF 806* was of Group II, Type A and *RF 849* of Group I, Type A. The hill slope to the east of the chapter house was levelled up to the south but no finds were found in the levelling layers. There are six cases of contamination, all immediately explicable by the later features cutting the relevant layer or layers.

To the south, the dorter undercroft continued to be the same as before, re-using the west wall (W. 30), [27] but the roof and upper floors must have been totally remodelled, because the west wall was rebuilt from foundation level. No internal arrangement survives from this period.

To the north, the slype was rebuilt,[28] and survived in this shape, with its internal decoration largely intact, until demolished by Lord Grimthorpe in 1886–7 (Illus. 2.4.1 cf. B and C). The arcading of the slype and its decoration will be described below, but it was more difficult to establish the sequence and plan of the medieval slype than of any other part of the structures excavated in 1978 because of its transformation by Lord Grimthorpe.

Interpretation

The plan

The external length of the rebuilt chapter house was 30.6 m (100.5 ft) and the width 12.5 m (41 ft). The internal length was 27.57 m (90.45 ft) and the width 9.1 m (30 ft). Clearly it is the internal dimensions which matter here, the chapter house being three times as long as it is wide. The screen (which was at most 0.30 m (1 ft) wide) across the western area creates a vestibule 9.14 m (30 ft) wide and 6.10 m (20 ft) long. The distance between the pilasters on the screen could be 0.91 m (3 ft). There was probably a wide opening at the centre, perhaps measuring 3.05 m (10 ft), so that the monks could pass to north and south of the grave of Ralph Gubion, but there could also have been openings between the pilasters at the northern and southern ends. The wear of the floor may support the idea of a central opening but this could have been caused by heavy passage during the demolition, when carts were driven down the centre of the chapter house and out through the west door.

The interior of the chapter house was elaborately decorated in carved clunch. The west door was very elaborate (cf. Illus. 2.4.3) and the walls were decorated with zig-zag and bead carving as well as deeply cut flowers. There was probably a blind arcade above a blank lower wall, as for example in the chapter houses at Bristol and Gloucester.[29] Externally the west face, protected by the cloister walk, had deeply cut geometric patterns, which were also carved in clunch. The carving is of exceptional quality, achievable in the soft clunch, but is not unique in twelfth-century England.

The floor of tiles with patterns in high relief and glazed in colours ranging from deep brown to dark green is, however, unique. It is necessary to go into detail as to how the tiles were found, and how they were recorded and excavated, and were thereafter handled and interpreted.[30]

Burials

Final phase 19, 1154/9–66

Abbot Robert died in 1166 and was placed in a stone coffin (G. 19) immediately to the east of the coffin of Paul of Caen in its translated position (G. 16).[31] The coffin had been removed by F. 321 in the first half of the seventeenth century (Final phase 33) and nothing had survived (Illus 2.3.5 and 2.3.3 and Section 3), not even splinters of the stone coffin large enough to be identified.

Final phase 20, 1166–83

Simon, the next abbot, in post from 1166 to 1183 and was buried in the chapter house in a stone coffin (G. 18, Illus. 2.3.3) to the south of Robert of Gorham. Here again there is no surviving evidence about the coffin or the body of the man himself. The coffin was robbed at the same time as G. 19. The south edge of the insertion pit (F. 490) for the coffin lies below tile patch F. 467 (Illus. 2.3.4). This area of tile may have been slightly undermined and loosened at this stage and need not have been replaced at once, but it was replaced in its original layout perhaps during Final phase 21 or 22.

Another grave was now dug (G. 11, Illus. 2.3.3, Section 6, 4.2.1, 4.4.1) in the north half of the vestibule, to the

[27] See above, Illus. 2.3.1 and 2.3.2.
[28] See above, Illus. 2.3.3 and 2.3.4.
[29] For a drawn reconstruction, see Illus. 2.4.1 and 2.4.2, pp. 146–73. For a description and discussion of the Romanesque carvings, see Zarnecki and Kahn, pp. 146–73.
[30] See below, pp. 108–45 for a detailed description of the tiles and their types.
[31] For the documentary evidence, p. 338.

north of the grave of Robert of the Chamber. Like that of Robert this too was not the burial of an abbot, but of Adam the Cellarer who died between 1167 and 1176. A pit (F. 538, 0.50 m deep, 1 m wide, and 2.5 m long) was dug precisely north of and cutting into the grave of Robert of the Chamber (G. 23). A tapered stone coffin was placed in a pit which was just deep enough to take it. On Section 6 it can be seen that the fill of G. 23 to the south had only partially collapsed into the void above the body at this stage since the south edge of F. 538 was pushed southwards with the final collapse of Trench 1, Layers 424, 426, 430, 432, and 441 into G. 23. The resulting hollow along the south side of G. 11 was eventually filled by Trench 1, Layers 421–3 during Final phases 25–6 (Section 6).

Adam the Cellarer's coffin was carved in soft clunch, not oolitic limestone. Externally, it tapered from 0.68 m at the head end to 0.4 m at the foot. The head-niche was angular and the bottom of the niche only 20–30 mm above the inside of the coffin, the sides of which were almost vertical. There were two drainage holes in the bottom which was 0.18 m thick. A 35- to 45-year old[32] man lay on his back, with his arms straight along his sides. The bone condition was generally poor. The head lay in the head-niche pressed firmly against the bottom and the upper jaw had slipped onto the right shoulder, the mandible was found upside down over the cervical vertebrae (these bones probably moved during decomposition or less likely when the cover-slab was replaced).[33] A copper-alloy book-clasp (*RF 250*) was found with leather enclosed (Illus. 5.9.1). Several fragments of ?leather thongs (*RF 257*, *RF 259*, *RF 262*, and *RF 275–6*) were also found spread over the upper part of the body.

The grave was covered by a large slab of Purbeck marble which projected well above the floor. This slab later became an object of superstition, fragments of which would be taken to heal ailments.[34] At some stage, probably during the fourteenth century the slab was removed and placed against the wall of the chapter house, and a smaller slab which people would not trip over was placed over the coffin.[35] It was at this stage that the coffin was filled with loose earth and mortar (Section 6, Layer 374).

Abbot Simon died in 1183 and was buried in a stone coffin (G. 18) placed to the east of the grave of Abbot Richard d'Albini (G. 14). The coffin was removed in the post-Dissolution robbing, and nothing further is known of it.

[32] See below, pp. 362–4.
[33] ibid.
[34] See above, p. 44.
[35] See below, pp. 362–4.

Final phase 21, 1183–95

Abbot Warin of Cambridge died in 1195 (G. 12, Illus. 2.3.3, Section 4, Section 3, Section 5, Illus. 4.4.2). He was not placed at the east end of the chapter house with his immediate predecessors, where there would have been room for him to the north of Robert of Gorham (G. 19) and east of Geoffrey de Gorham (G. 17). He was placed instead just inside the door of the chapter house at the head of Abbot Ralph Gubion (G. 2), in a coffin of Purbeck marble (G. 12). His was the only coffin of that splendid stone in the chapter house; it was 0.75 m wide at the head and had only a slight taper to 0.6 m at the foot. The sides are vertical and slender with the top of the facetted niche at the west end measuring only 30 mm thick.

Adam the Cellarer's grave (G.11) was robbed twice, the contents disturbed and the coffin broken into many pieces in the sixteenth century and again in the eighteenth (F. 300, Final phase 35). The scattered bones in the robbing pits were those of a very robust man with an exceptionally heavy skull who died when he was 35- to 45-years old. Amongst the bones were fragments of an ivory crozier (*RF 103–4* and *RF 741–2*), an iron ferrule (*RF 633*), and a gold braid (*RF 620–1*).

Final phase 22, 1195–1214

At the beginning of the thirteenth century the interior of the chapter house was changed. The screen separating the vestibule from the main area of the chapter house was demolished and the tiled floor in the vestibule was re-laid. There were apparently several reasons for this. The fill over the burial of Robert of the Chamber (G. 23) had been collapsing gradually into the grave as the timbers placed over the body had decayed and there would by then have been a depression over the grave some 2 m long east–west and 0.2 m deep.[36] This sinkage in the floor ran along the south side of the Purbeck marble slab over Adam the Cellarer (G. 11) which was raised above the level of the floor. These two obstacles could have forced some route into the main area of the chapter house to the north of G. 11, where the monks would have had only about a metre between the Purbeck marble slab and the foot bench. And at the opening in the screen there would have been less than a metre between the depression and the grave slabs to the south over G. 12 and G. 2. Areas of the floor must have become very worn by then and the central opening in the middle of the screen difficult to use.

The damaged floor was lifted and the tiles preserved, even the broken ones, as could be seen because some of the re-laid tiles were in fragments when replaced. Some cleaning of the damaged mortar bed must have

[36] See p. 343.

taken place because a layer of chalk was spread over the cleared area of the vestibule and a new layer of yellow-brown to orange mortar with clunch chips was spread over the chalk to level it. On this mortar the tiles were re-set. On Section 6 the chalk levelling can be seen in Layers 213 and 434 below the mortar of Layers 351 and 365. The new floor sealed the insertion pit for G. 12 (Warin of Cambridge, d.1195) but was itself earlier than the relaying of the tiles along the foot benches perhaps 50 years later during Final phases 23–4.[37]

The reconstruction of the original twelfth-century floor (Illus 3.2.19 and 3.2.20) suggests that the tiles in the vestibule were re-laid more or less in their original pattern. This cannot be proved, but if it was not the case a supply of new tiles must have been at hand since the pattern as re-laid is distinctively different from the floor in the eastern part of the chapter house. The re-laid floor, for example, used a much higher proportion of the narrow border tiles of Type F. This could be seen not only from the few narrow tiles *in situ*, but also from the mortar impressions of the narrow tiles which had survived extensively. If they were not reused from the original floor, where had they come from? The fill within the borders could have been replaced in a different way to the way they were originally laid, but there is no reason to suggest this, since the evidence from other repairs to the floor in RDFTs shows that as far as possible the existing pattern continued to be followed.[38] This use of broken tiles strongly suggests that there was no source of new tiles of the same type and that none of the original batch were left.

John de Cella, the next abbot, was buried in 1214. His grave (G. 15), the last in the east end of the chapter house, was in a coffin placed to the north of Abbot Robert (G. 19) and to the east of Abbot Geoffrey (G. 17) (Illus. 2.3.4). His burial, like the other graves in the same area, was robbed and neither his coffin nor his body has survived.

Final phase 23, 1214–35

William of Trumpington, the next abbot, was buried in 1235 on the central axis in G. 5, immediately to the east of G. 2, the grave of Ralph Gubion (Illus. 2.3.4 cf. 4.4.1). Graves 5 and 4 (in which Abbot John de Hertford was to be buried in 1265) were disturbed in the sixteenth century and robbed together in the eighteenth when their bones were mixed up. Abbot William of Trumpington's coffin in G. 5 (Illus. 4.4.2), cut in clunch and excellently preserved, is two metres long and tapers from 0.65 m to 0.48 m. The sides are vertical and 88 mm thick. The head-niche, the bottom of which is higher than the bottom of the coffin, is well rounded and closes in around the neck.

The skeletal remains found in G. 4 and G. 5 were of two individuals, with many more bones surviving from one than the other. One was a very robust 50- to 60-year old man, 175.5 m ±4.05 cm tall, who had suffered much pain and would have had hardly any movement of his 'kyphotic thoracic' spine. The other remains were those of a smaller, 70- to 80-year old man who was almost toothless at death. The abbots of St Albans tended to have long incumbencies, around 20 years being the norm, but John de Hertford (G. 4) had an unusual 28 years as abbot (1235–63), while William of Trumpington (G. 5) was abbot for 20 years and three months. It is perhaps likely that he was the very robust man who would have been in such discomfort, which may partly explain why he is said to have been so bad tempered.

Final phase 24, 1235–c.1300

John de Hertford, the next abbot, was buried in G. 4 on the central axis of the chapter house to the east of William of Trumpington in G. 5. It is possible that John de Hertford is the smaller, 70- to 80-year old man, whose bones were found mixed with those of the very robust younger man (described above under G. 5).

The coffin in G. 4 (Illus. 4.4.2) was of Barnack limestone, of which only the eastern (foot) half had survived, with three large fragments of a broken lid showing that this coffin had a fitting lid rather than a cover-slab. The lid was flat, about 100 mm thick with a bevel along the edges. The coffin had a clear taper to *c*.0.4 m at the foot. The sides were almost vertical and quite slender, about 50 mm thick.

Apart from John de la Moot who died on 11 November 1401, John de Hertford was the last of the abbots to be buried in the chapter house. All the other abbots were buried in the presbytery of the abbey church.

Final phases 23–4, 1214–c.1300 (Illus 2.3.4 and 3.2.18; Section 6 and 7)

After the floor in the vestibule had been re-laid at some stage towards the middle of the thirteenth century, the foot bench was repaired throughout the chapter house and the floor tiles again re-set in a two-foot strip along the benches. This repair involved lifting the outer three rows or lines of tiles and laying down a layer of crushed chalk covered by soft chalk-flecked orange mortar as the bedding for the re-laid tiles. The repair of the foot bench entailed the removal of the stones and the laying of peg-tiles horizontally, near the front of the bench, on top of which a dark-yellow mortar with coarse sand admixture was laid as a bedding for the new or reused stone. In some areas rammed chalk, like the layer below

[37] See below, Section 6, pp. 522–3.
[38] See below, p. 74.

the re-laid tiles, was placed below the bench-stones, perhaps where the stone to be used was too small or broken. In at least two places along the south side of the chapter house, oblong Roman tiles set in rammed chalk formed the front of the bench (Illus. 3.2.18), which was finished with a smooth pale yellow plaster. The full sequence of bench repair only survived in a few places and can be seen on Sections 6 and 7 (F. 332a is the first foot bench and F. 332b the second). The re-laid tiles and their chalk bedding can be clearly seen on Section 6.

The tiles of the floor were now re-set so that their pattern followed more or less the general pattern of the floor both in the western area where the tiles had been re-laid and in the rest of the chapter house where the original floor to a large extent still survived.

The floor tiles found in the reconstruction layers included printed tiles as well as broken RDFT, many clay roof tiles (several with peg holes), iron nails, and a piece of Norman pelleted moulding (*RF 2060*). There was also a fragment of medieval window glass, the earliest context to contain any window glass from the chapter house.

Final phases 25–6, c.1300–96

The slab projecting above the floor over Grave 11, the burial-place of Adam the Cellarer, was now moved and placed vertically against the wall of the chapter house. It was replaced by a smaller slab, also carved in Purbeck marble, with a design of crossed keys. The old slab became an object of veneration from which pilgrims would remove fragments of Purbeck marble that would be ground down and used as medicine.[39] The new slab was narrower and presumably was laid flush with the floor. To the south of this slab, the depression over the grave of Robert of the Chamber grave (G. 23, see Illus. 2.3.2) had again developed and was re-filled (Section 6).

Final phase 26, c.1350–96

Two laymen were buried in the chapter house, both exactly at the mid-point: G. 6 by the north wall and G. 7 by the south wall (Illus. 2.3.4; Section 8).

Grave 6 contained the body of Adam Rous, physician to King Edward III, who died in 1379 (Illus. 4.2.1).[40] The grave was about 0.9 m deep and the body had been placed in a wooden coffin, fastened with iron nails. The grave was marked by a Purbeck marble slab which had once held a brass (Illus. 4.6.1). The body, which had not been disturbed, was that of a 40- to 50-year old man with a delicate skeleton (who was likely closer to 50, given he had been appointed to crown service as a physician between 1349–59, and it is unlikely he took up this appointment at just 20 years old), only 156.72 ±3.27 cm tall, who had unusually bad teeth with many caries and abscesses.

Grave 7 contained the body of Prior Adam Wittenham who died after 1349. The grave was 0.9 m deep and if the body had been in a coffin it had left no trace (and had therefore not been nailed). The grave was marked by a Purbeck marble slab. The body, which had not been disturbed, was that of a robust, 50- to 60-year old man, 178.92 ±2.99 cm tall, who had suffered from gout.

Final phase 27, 1396–1402

John de la Moot was buried in G. 13 just inside the west door, to the west of G. 12 (Illus. 2.3.4; Section 3). This was the last available space on the central axis of the chapter house, given that the area to the east of the six eastern graves was not used for burial. The grave was a 1.1 m deep stone-built shaft into which a wooden coffin held together with iron nails had been placed (Illus. 4.2.1). The grave had not been disturbed but bone preservation with the exception of the skull was generally poor. The man was over 60 at death and 184.8 m ±3.27 cm tall. Two copper-alloy tacks were found, perhaps originally for nailing a parchment to the coffin. The stones lining the grave included several fragments of Romanesque figure sculpture of the highest quality, some with surviving paint (see *RF 2430–1* and *RF 2147–79*).[41]

IV. THE FOURTH (VAULTED) CHAPTER HOUSE

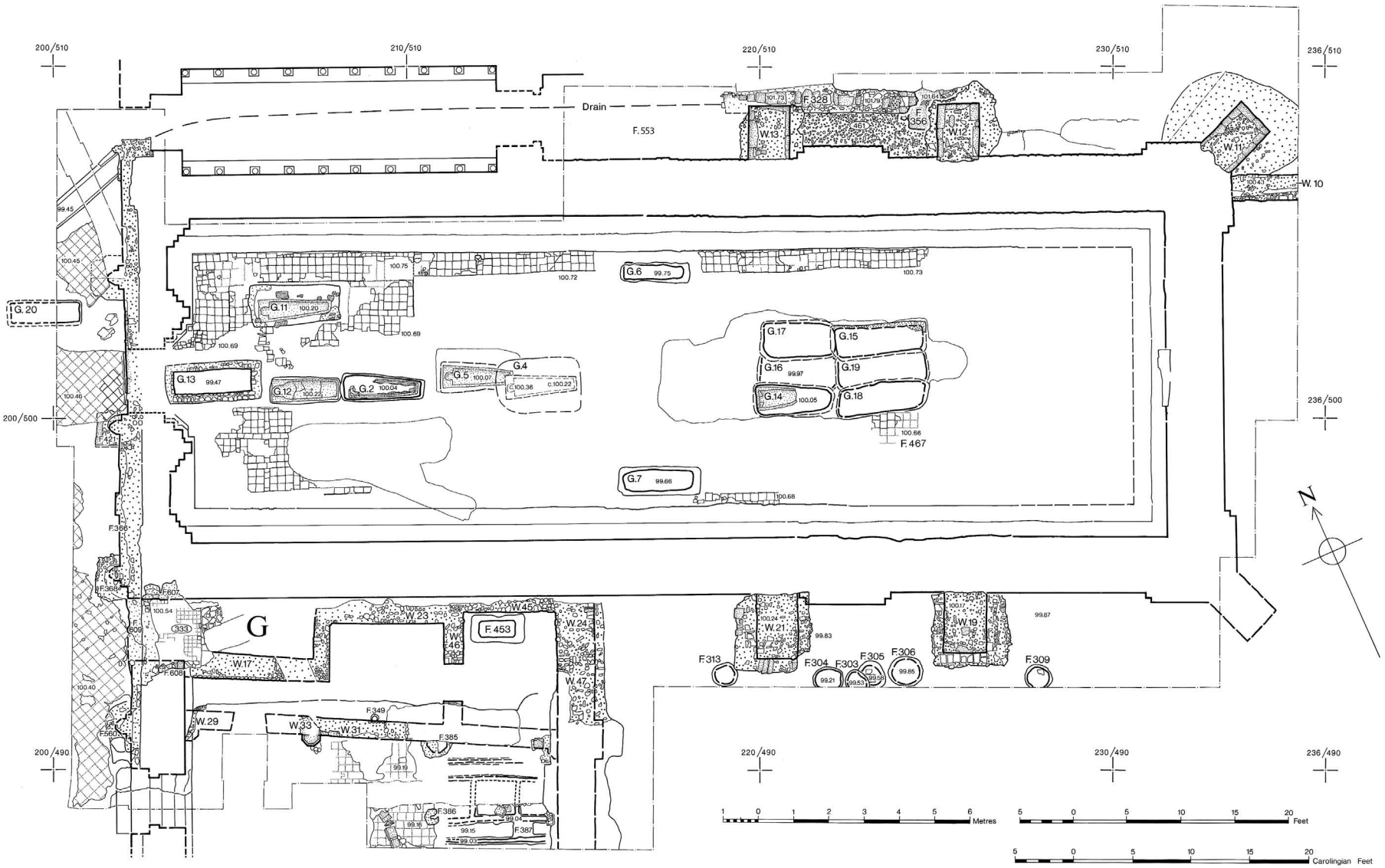
(Final phase 29, c.1450–c.1500, Illus 2.3.4, 3.2.18–3.2.20)

The chapter house was repaired by Abbot John of Whethamstede when he was abbot for the second time in 1452–65.[42] The work was completed by Abbot William Wallingford (1476–92) at a substantial cost that indicates that the chapter house must have been virtually rebuilt, and probably reflects the construction of the fan vault for which the many carved fragments recovered in the 1978 excavation provide extensive evidence.[43]

The buttresses

The shallow original stepped buttresses at the north-east and south-east corners and along the outer faces of the north and south walls of the Romanesque chapter house were left in position but their function was re-enforced by rectangular buttresses with massive

[39] See above, p. 341.
[40] For details on Rous's career and dealings with St Albans, see pp. 355–7.
[41] For details on John de la Moot's life and abbacy, see p. 341.
[42] See above, p. 7.
[43] See below, pp. 186–238.



Illus. 2.3.4. The fourth (vaulted) chapter house rebuilt by Abbots Whethamstede and Wallingford, with burials to 1410, with stage G of the dorter range.

foundations at the north-east and south-east corners of the chapter house and along the outer faces of the north and south (Section 10 and Illus. 2.3.4, W. 12, W. 13, W. 19, and W. 21). The south-east buttress (W. 32) was completely robbed away, and the two along the south side (W. 19 and W. 21) were robbed to foundation level, but the north-eastern buttresses (W. 11) and the two along the north side (W. 12 and W. 13) survived up to 0.85 m above the contemporary ground-level. The buttresses were set on trench-built pads around 2.2 m by 2.2 m (7.2 ft) for the buttresses added to the north and south walls and around 2.6 m by 2.8 m (8.5 by 9.2 ft) for the diagonal corner buttresses. The standing fabric of the northern buttresses (W. 12 and W. 13) measured 1.2 m (4 ft) in width and 1.5 m (5 ft) in length. The north-east diagonal buttress (W. 11) had the same width but was about 1.7 m long (5.5 ft). The buttresses had a rubble core of flint, tile, and clunch fragments in a pink-white mortar and were faced in stone ashlars. The three buttresses which survived above foundation to the north had a total of 34 facing stones:

2	reused Roman tiles
6	smallish clunch ashlars, with the same height as the twelfth-century clunch ashlars on the inner face of the chapter house, now probably reused
1	larger clunch ashlar
2	small shelly limestone inserts
23	shelly limestone blocks, two of which were over a metre long and stepped, and thus clearly reused. All were taller than the ashlar courses inside the chapter house.

Many of these clunch ashlars carried mason's marks. Of the seven ashlars noted above, one mark was almost completely broken away, but of the remaining six, four carried mason's marks, one of which is very similar to a mason's mark on a limestone ashlar. Two of the limestone ashlars were broken, but 11 of the remaining 21 had mason's marks, one of which (which may also occur on a clunch ashlar) is repeated seven times. None of these mason's marks are amongst the many seen on the original internal clunch face of the chapter house. It seems clear that although most of the clunch ashlars were reused, some may have been freshly quarried and all were re-set, using new mason's marks as a guide in the reconstruction. Most of the limestone ashlars were probably new. The large blocks with steps were probably reused, but not perhaps from the chapter house.

Architectural analysis of the fallen stones carried out by Dr Richard Morris shows that the fifteenth-century chapter house probably had a fan vault in its three eastern bays and a large window at the east end.[44] Window glass from this stage of the chapter house was found in a layer of broken glass outside the east window (Trench 3, Layer 287), where it had been knocked out at the Dissolution. Some fragments of glass from the side windows were found but in nothing like the same quantity.[45]

Final phases 26–30, c.1350–1539

During these last two centuries, the floor of the chapter house was constantly patched and mended: over G. 11 and G. 23, where the ground continued to sink, in areas along the benches, and also in the middle. These patches and mends, unless an adjacent repair happened to have sealed one of them, were sealed only by the primary demolition rubble. Inside the chapter house the first printed tiles appear in these patches, which means that the printed tiles were not usually found in a context earlier than *c.*1300. Only one printed tile was found in an earlier context, in Trench 1, Layer 211, in that part of a repair to a foot bench (see Section 6) which has been placed spanning Final phases 23–4 (1214–1300).[46]

Final phase 30, c.1500–1539

Grave 20, the latest medieval grave excavated in 1978, was found in the cloister walk west of the chapter house (Illus. 2.3.4). This was perhaps the grave of Bartholomew of Wendover who is suggested to have been aged around 40. Only his lower legs and feet lay inside the excavation. The bones show signs of rodent gnawing which indicates that the body had probably been buried in a coffin of which no trace was found.

V. THE CHAPTER HOUSE IN ITS FINAL STATE

The robbing of the chapter house

Before discussing the robbing of the chapter house, it is necessary to summarize what is known about the building state immediately before the Dissolution.

The building consisted of a square-ended structure, north wall (W. 4), south wall (W.2), east wall (W. 14), and west wall (W. 6) (Illus 2.3.4 and 3.2.18). The structure was divided into bays emphasized by buttresses (W. 12 and W. 13 to the north and W. 19 and W. 4 to the south) and strengthened by angled corner buttresses to the north-east (W.11) and south-east, the latter of which was destroyed, but there is no evidence for vaulting responds on the inner face of W. 4 at W.20 (Illus 2.3.4 and 3.2.18). Evidence for windows between the

[44] See below, pp. 186–238.
[45] For the glass, see below, pp. 239–88
[46] For discussion of the printed tiles, see below, pp. 289–308.

buttresses and at the east end comes from smashed glass and the large quantities of window mouldings. There is no evidence for the roof. A few nails lying on the floor may have come from the leading of the roof but lead sheeting was rare in the destruction levels although fairly common in the external northern levels. Clay roof tiles from the destruction layers are mainly covered with mortar on both sides and were probably used in walling. There were also clay roof tiles in the make-up of the floor and in the 'foot bench' (F. 332). The 'foot bench' (F. 332a) extends along most of the length of W. 4, and along the whole south side (F. 233), but the bench itself runs around the whole of the building and is of one build with it.

THE INTERIOR OF THE CHAPTER HOUSE

Tile floor (Illus. 2.3.5)

Traces of tile floor extend over two-thirds of the length of Trench 3, but all details of the floor have been totally destroyed at the east end. The tiles had been dislodged in several areas but apparently not removed (loose tiles in Trench 3, Layer 310). The absence of tiles at the east end, even under what appeared to be undisturbed rubble, is surprising. There were also no traces of mortar bedding or of earlier floors here, neither of which were robbed elsewhere, except during the robbing of the graves.

The foot bench

At the west end of the building, facing stones of greensand remained in place in the north half of the west wall, but in Trench 3 with one exception these had been totally removed. There is a mortar bedding on top of the bench in Trench 1, but this does not survive in Trench 3. There is thus no convincing proof of the nature of the upper surface of the benches, but whatever it was it had been totally robbed out in Trench 3.

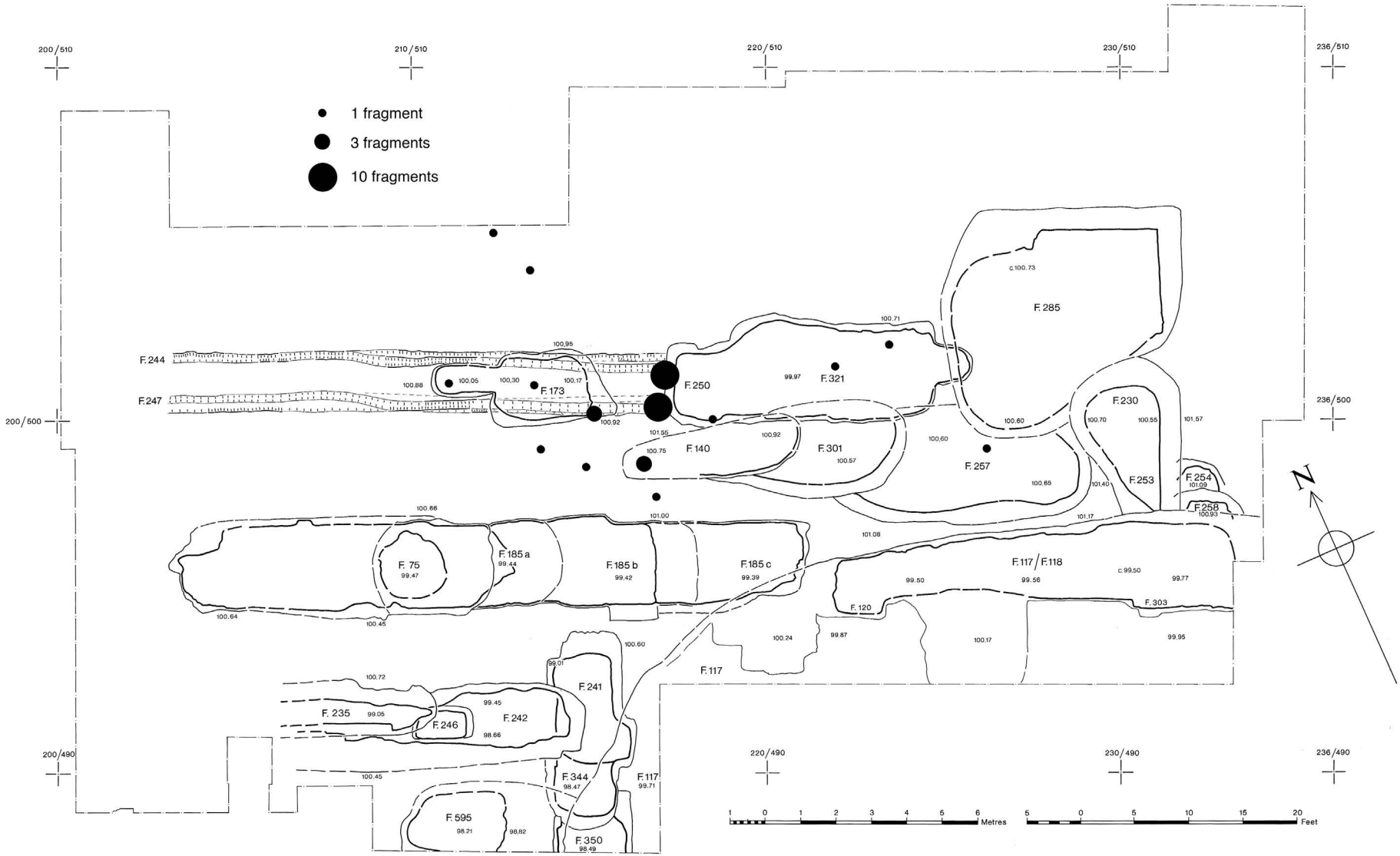
The bench

Along the north and east walls, the bench (F. 322 and F. 374) is represented only by its rubble core and the holes from which stones had been robbed away. The stone holes showed that the facing had been tooled ashlar, probably greensand.

The graves

The six abbots whose graves were robbed by F. 250 (Final phase 31), F. 321 (Final phases 32, 33, and 34), and F. 406A (Final phase 33) and associated features were those of:

Paul of Caen (d.1093), Richard d'Albini (d.1119), Geoffrey de Gorham (d.1146), Robert of Gorham (d.1166), Simon (d.1183), and of John de Cella (d.1214). See Illus 2.3.4, 2.3.5 and Table 2.3.1.



Illus. 2.3.5. The demolition and robbing of the chapter house from *c.*1540 to the eighteenth century, with the distribution of fragments of Anglo-Norman glazed floor tiles (ANGT).

PART 2

4. THE SLYPE

by MARTIN BIDDLE *and* BIRTHE KJØLBYE-BIDDLE

A slype is the passage which lies between the transept (usually the south transept) of a major church and the chapter house and leads to the monastic cemetery. The slype can also be called a *locutorium* or *parlor*, a place for conversation, and was suitably elaborate.

The slype at St Albans was built in the mid-twelfth century (Illus. 2.4.1A and Illus. 2.4.2). It survived essentially in this form and at the same level (Tables 2.4.1–2.4.3) until it was demolished and reconstructed by Lord Grimthorpe when he rebuilt the whole south wall of the south transept and the adjacent slype in 1886–7 (Illus. 2.4.1C). Grimthorpe's slype was slightly remodelled externally in 1982 (Illus. 2.4.1D).

The slype before 1886–7

The twelfth-century slype was recorded in its final form in drawings made in 1810 by John Carter, engraved and published by the Society of Antiquaries in 1813.[1] In its original twelfth-century form (Illus. 2.4.1A), the slype had been a through passage with its western (and perhaps its eastern) door set in an elaborately carved arch (Illus. 2.4.3),[2] but without openings or exits to either north or south. Internally the slype was covered by a tunnel-vault supported to either side by an arcade of ten columns with decorated capitals and bases of the highest quality (Illus. 2.4.4),[3] and was thus suitably elaborate for the important passage leading to the monastic cemetery. Sir Gilbert Scott (1811–78) described the decoration of the medieval slype, as a rich form of Norman architecture.[4]

By 1810, however, the slype was already blocked at both ends and could only be entered by a passage cut at an angle from the south-west corner of the south transept to the north-west corner of the slype (Illus. 2.4.1B). The wooden door decorated with scrolled ironwork that closed this passage at its north end in the south transept, which was drawn by T. Faulkner Lee in 1849 (Illus. 2.4.5), was set at slype level in a walled pit with steps leading down from the higher floor of the transept.[5] It seems unlikely that this fine door was made for such a secondary opening and much more likely that it came originally from either the western or the eastern opening of the slype. As reconstructed here (Illus. 2.4.1A), these openings are 1.52 m (5 ft) wide, approximately the same as the width of the wooden door.

The slype after 1886–7

An abbey guide of 1893, written in the aftermath of Grimthorpe's work (cf. Illus. 2.4.1C), noted in measured tones that 'this old slype has now been destroyed and a new entrance to the church with a vestibule takes its place'.[6]

[1] Carter 1813, plan Pl. II (C2, C3), and details Pl. XV (E, F), Pl. XVIII (O2), Pl. XIX (A–N); cf. Neale 1877, 14–15, Pl. 30.

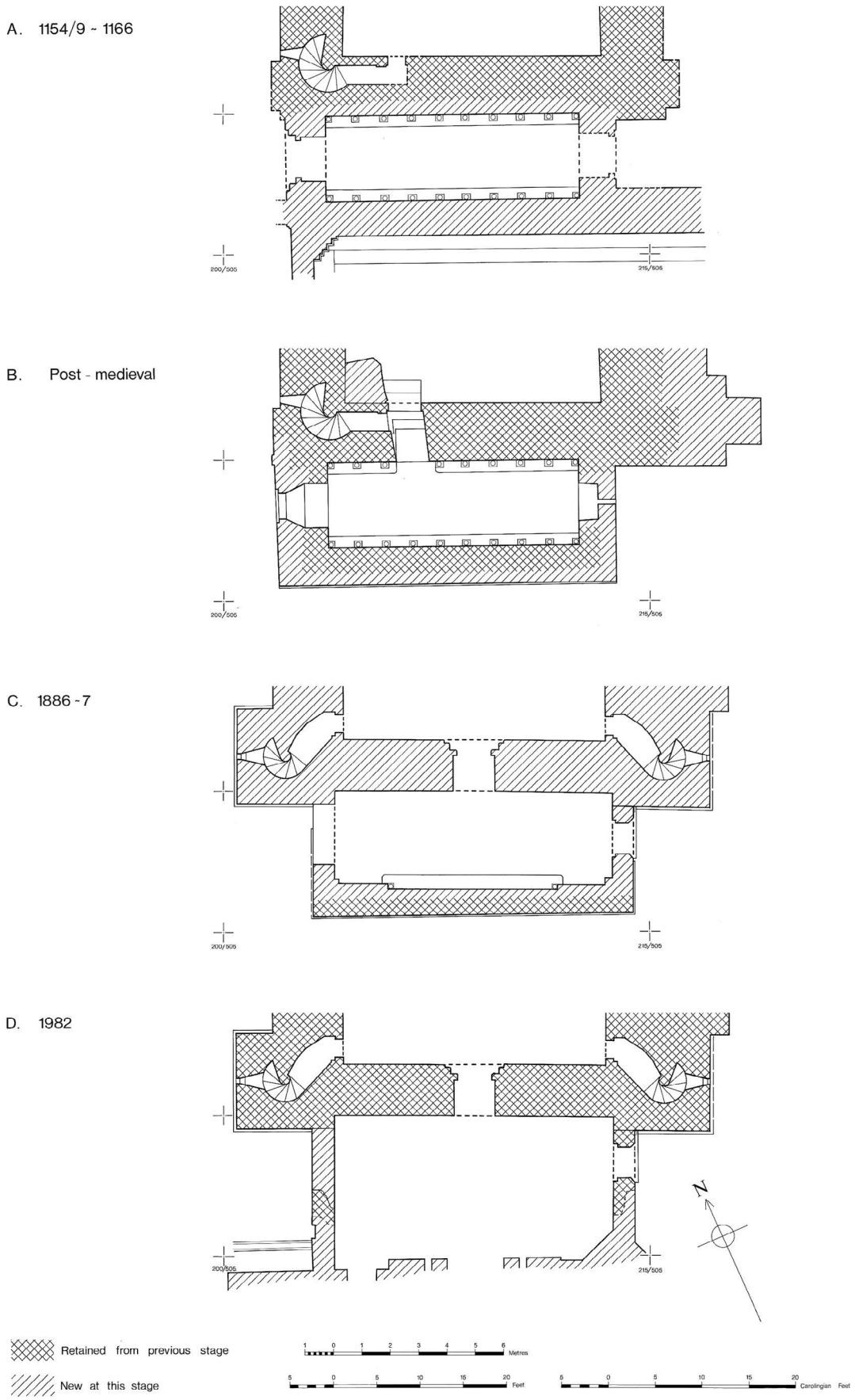
[2] It is assumed that the doorways to the slype were elaborately decorated at both ends. The splendid arch at its western (cloister) end was dismantled by Grimthorpe in 1886–7 and was moved by him, enlarged with a chamfered outer order, to its present position at the centre of the interior face of the south wall of the south transept; see Kelsall and Brisco 2002, 22–3.

[3] For images of the fourteen capitals, see Carter 1813, Pl. XIX (A–N). For the arcading on the south side of the slype, and an enlarged detail of one of the capitals, see Neale 1877, Pl. 30; see also Comyns Carr 1877, 19.

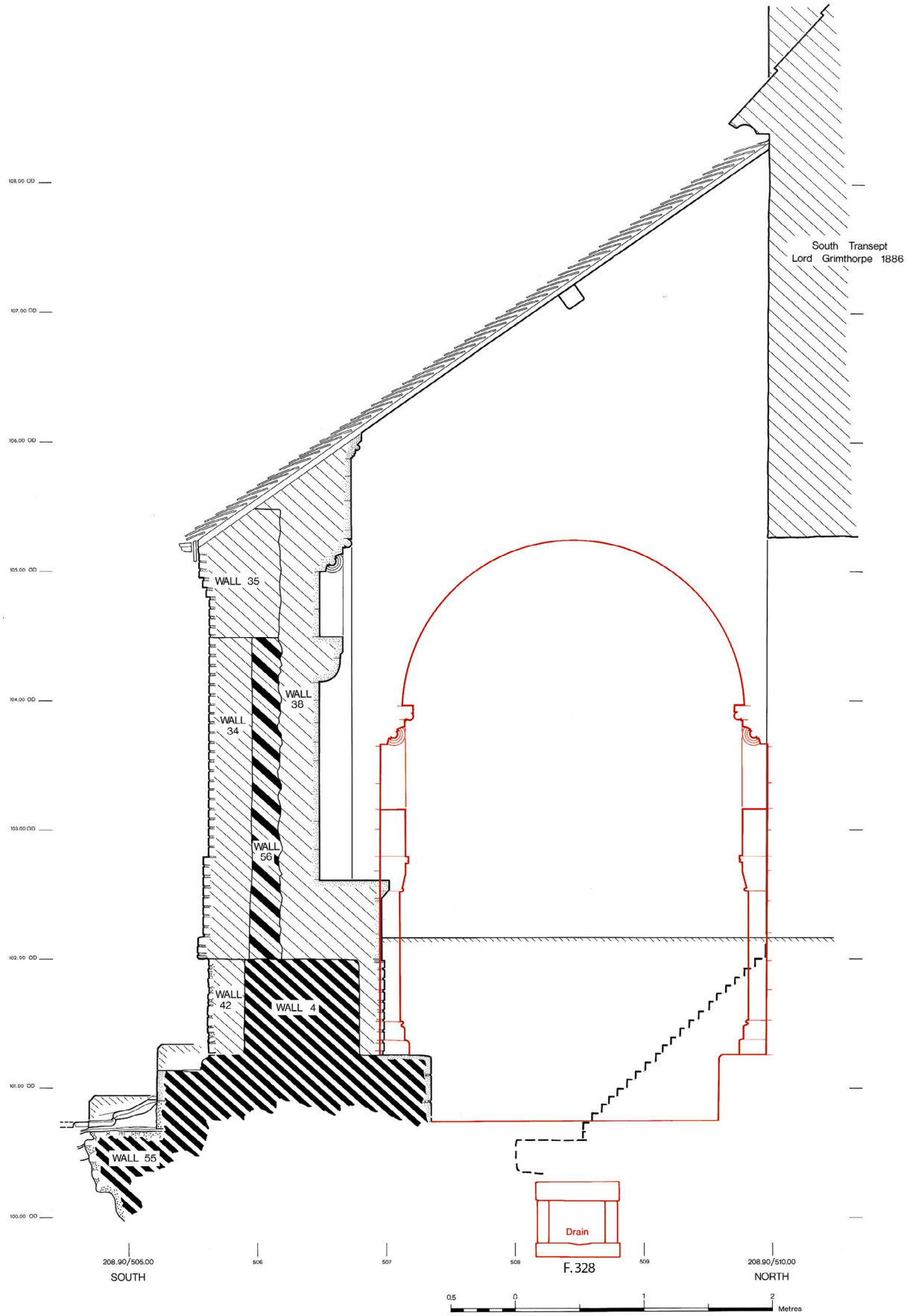
[4] Scott 1995.

[5] 'St. Alban's Abbey (in the South Transept.)', signed lower left, 'Revd T. F. Lee Del.1849'. At this date the door was set at the level of the slype and is therefore shown opening onto a level below that of the floor of the south transept.

[6] Mason 1893, 19.



Illus. 2.4.1. The architectural development of the slype.



Illus. 2.4.2. Cross-section of the slype as rebuilt by Lord Grimthorpe in 1885, showing the structural sequence revealed in the course of demolition in 1980.



Illus. 2.4.3. The west doorway of Abbot Robert of Gorham's slype, built between 1154/9–66, slype rebuilt by Lord Grimthorpe in 1886. Grimthorpe uncovered the stonework of the original west doorway to the slype and installed it in the south wall of the south transept. Looking south (NMR, BB80/2091).

Table 2.4.1. Levels in the area of the cloister west of the chapter house, Final phase 11 (1077–88)

Approximate easting (CH at *c*.201)	150	160 Below W range Cellarium	166 ?W walk	200 ?E walk
Approximate northings				
490	98.4	98.3	98.69	99.8
496	98.70+	99.43	99	100.19
500	?	?	?	100.3
505	?	?	?	100.28

Table 2.4.2. Levels in the area of the cloister west of the chapter house, Final phases 17–20 (1154–83)

Approximate easting (CH at *c*.201)	150	160 Cellarium	166 W walk	200 Garth E walk
Approximate northings				
490	98.7	100.3	99.75	100
496	98.7	100.3	99.75	100.3
500	?	?	?	100.3
505	?	?	?	100.28

Table 2.4.3. Levels in the area of the cloister west of the chapter house, Final phase 26 (1350–96)

Approximate easting (CH at *c*.201)	150	160 Below W range Cellarium	166 ?W walk	200 ?E walk
Approximate northings				
490	98.7	100.43	100.15	100.46
496	98.7	100.43	100.15	100.46
500	?	?	?	100.46
505	?	?	?	100.46



Illus. 2.4.4. The Romanesque slype, looking west, before its demolition by Lord Grimthorpe in 1886. The inside of the doorway cut through the south wall of the transept and can be seen to the right. Anagram RKT on stone block in foreground. (Comyns Carr 1877, 19. Copied from a book by John Kent, 1860, RKT = R. Kent Thomas 1816–84).



Illus. 2.4.5. Lithograph of the Romanesque west door of the slype, reused as the south door of the south transept, drawn by 'Revd T. F. Lee Del. 1849' ('St Alban's Abbey, in the South Transept' St Albans City Library, Local History Section Y2350 (V10)).

PART 2

5. THE EAST CLOISTER WALK

by MARTIN BIDDLE *and* BIRTHE KJØLBYE-BIDDLE

The late eleventh century (Final phases 11 to 16, 1077–1154/9, Tables 2.4.1 and 2.5.1)

There is no indication of how the area west of the chapter house in its first stage was treated. The top of the foundation of the first west wall (W. 57) was at 100.42 m OD on 501.25 N. This was about 80 mm above the contemporary ground-level on top of a ditch (F. 501) to the west of W. 57 and Layer 445 (Section 3 and Illus. 2.3.1). This level may have been partly created by terracing into the hillside as was certainly the case for the buildings at the western limit of the claustral area. But further to the east the Anglo-Saxon cemetery does not seem to have been sliced.[1] The levels are set out in Table 2.4.1.

It can be seen that at 490 m N a possible eastern cloister walk would have been almost half a metre higher than the contemporary level where the western cloister walk would have been, namely where the later garth was to be. The area east of the chapter house is flat at around 99.88 m OD for the southern three metres. It then steps down quite suddenly to 99.81 m OD and slopes up for the next two metres until the level is 100.05 m. From there the level slopes up again for the next five metres and reaches 100.30 m OD, a level which is more or less kept for the northern six metres. Any cloister walk would thus not only step up in an irregular manner from south to north by half a metre in the eastern walk, and by about half a metre in the western, but it would also be more than one metre higher in the eastern cloister walk than in the western. The buildings found below the later western cloister range are, furthermore, at a marked angle to both the contemporary chapter house and to the abbey church.

There is no evidence that there had been a southern range of buildings. On Illus. 1.1.5 a dashed line suggests where the original wall of the walk of the cloister may have run, but given the irregular levels it seems highly unlikely that there was a formal claustral arrangement in the primary layout created by Abbot Paul of Caen (1077–88).

[1] See above, pp. 19–32.

Eric Fernie has suggested[2] that the length of the nave, not including any western towers, may be the same as the diagonal length of the cloister. One side of the St Albans cloister at this stage was perhaps 36.6 m (120 ft) in length. William Page's excavation in 1896 showed a western front with towers ten bays from the crossing.[3] This is the position of the western towers drawn by him which we have used in the plans of the first abbey church. The length from the crossing to the suggested west face of the towers is 61.5 m (201 3/4 ft, Table 2.3.8H–J). Fernie's suggestion does not therefore work using the best dimension for any arrangement involving the first phase of the western range of buildings. This is not surprising given the irregularity of the layout and the changes in levels, and may support, however circumstantially, the suggestion that there was no cloister walk at St Albans in Paul of Caen's original layout.

The addition of the cellarium (Illus. 1.1.5)

The cellarium was built to the west of the primary range of the cloister, perhaps during Richard d'Albini's abbacy.[4] Given the attention paid to the custody of the kitchen store during Geoffrey de Gorham's abbacy, reflected in a discrete text that was later incorporated in the *Gesta abbatum*,[5] there is perhaps a stronger possibility that this work dates from his longer term of office. The new range was built on the same orientation as the church and chapter house, which was extended eastwards by the same abbot.[6] No archaeological evidence survives to indicate that a cloister walk was constructed at this stage, but the new orientation suggests that a regular layout was now planned. The east face of the cellarium (Table 2.3.8 Line C) from now on determines where the west range of the cloister is to be.

[2] Fernie 1987, Pls 1–4.
[3] Page 1898a, 21–6.
[4] Biddle and Kjolbye-Biddle 2001.
[5] For Latin text see *Gesta Abbat.*; for details of the text and its origin, Clark & Preest 2019.
[6] See above, pp. 33–7.

Table 2.5.1. St Albans Abbey: dimensions in the cloister and the contemporary dimensions of the church

Date	F.Ph.	Distance	Feet	Metres
1077–88	11	East–west, W face Chapter House to E face western buildings at 496 N (A–B1)	119	36.27[7]
		East–west, W face of Dorter range to E face western buildings at 488.60 N (A–B2)	119.59	36.45
		East–west, W face of Dorter range to possible SW junction of western and ?southern buildings[8] (A–B3)	120	36.58
		North–south, from S aisle plinth to possible SW junction of western and ?southern buildings (Point B3)	120	36.58
		Ideal diagonal across an area with the side 120 feet (Point B3 to junction between S aisle and S transept)	169.71	51.73
1154–66	17	East–west, W face Chapter House to E face cellarium (A–C)	149	45.43
1154–66	17	North–south, S face S aisle to SW angle of cloister walk	139 1/4[9]	42.44
		Diagonal	(203.94) 204 used	(62.16) 62.18
1077–1119	11–14	The church from junction between S aisle and S transept to possible W face of possible SW tower (H–J)	200.88 = 200 ft 10 1/2 in.	61.23
		From possible W face of W towers to the cord of the E apse[10] (J–K)	341.54 = 341 ft 6 1/2 in.	104.1
		From possible W face of W towers to the point of the larger transept apses (J–L)	283.46 = 283 ft 5 1/5 in.	86.4
1077–88		The use of √2. √2 x 120 ft (B3–H)	169.71	51.73
1097–1166		√2 x 149 ft (A–C) (= ideal diagonal)	210.72	64.23
		√2 x 210.72 ft	298	90.83
		√2 x 20.88 ft (H–J)	284.09	86.59

The works of Abbots Robert of Gorham and John de Cella (Final phases 17 (1154/9–66) and 22 (1195–1214), Tables 2.3.8, 2.4.2, 2.4.3, 2.5.1–2.5.3. Illus.1.15)

With the construction of the massive square-ended chapter house, a regular cloister walk was designed. The surviving level at the south end of the western walk is at 100.30 OD, and at the eastern 100.00 OD. Six metres to the north the level is at 100.30 in both walks. It is likely that there was a step down in the area of the stairs into the undercroft (Section 1). It is also possible, but unlikely, that flagstones were laid here, bringing the level up to 100.30. If so they left no trace. Apart from this area the cloister walk can be presumed to have been level all the way around.

The west door into the chapter house was finished in clunch and an elaborate stepped buttress was preserved below the fourteenth-century buttress north of the door. This buttress was deeply carved with a deep geometrical angular pattern outlined in two mouldings and small pellets.[11] At the west face there was another element but this has gone completely apart from a scar. A similar buttress presumably once existed to the south of the door, but all details there were entirely removed in the fourteenth century.

The western walk of the cloister was constructed by building a wall 0.83 m thick, 0.4 m of which is taken by the bench along the east face of the cellarium. The east

[7] The western range runs at a diagonal to the chapter house. At 490 N, further to the south the distance to the W face of the undercroft was about 363 m (1192 ft).
[8] There is no evidence for a southern range of buildings.
[9] Dimension given by Neale 1877.
[10] The cord used here is as in Fernie 1987, 65. Here the apse radius is drawn, and the high roofs stop, at St Albans this line also defines the straight eastern walls of the north and south eastern aisles.
[11] Zanecki and Kahn, see below, p. 146–9.

Table 2.5.2. Nave lengths of some major eleventh-century churches (excluding western towers)[12]

Place	Date	Length (ft)	Length (m)
Jumièges	1040s	140 ft 7 in.	42.86
Caen, St-Etienne	1060s	156 ft 8 in.	47.76
Rouen, cathedral	1030s	(*c*.160 ft?)	(*c*.50)
Canterbury, cathedral	1070s	*c*.160 ft	*c*.50
Lincoln	1070s	188 ft 6 in.	57.47
Canterbury, St Augustine's	1070s	189 ft	57.60
Toulouse, St Sernin	1070s	*c*.200 ft	*c*.60
St Albans	1070–80s	(*c*.201 ft 9 in.?)	(*c*.61.5?)
Westminster	1040s	(*c*.202 ft 7 in.?)	(*c*.61.76?)
Ely	1080s	220 ft 10 in.	67.32
Speyer	1030s	236 ft 6 in.	72.09
Cluny	1080s	*c*.246 ft	*c*.75.00
Norwich	1090s	254 ft 6 in.	77.60
Bury	1080s	255 ft	77.70
Winchester	1070s	265 ft 9 in.	81.00
Rome, St Peter's	329, re-built 1506	297 ft 3 in.	90.61

wall, which only survived to ground-level, had shallow buttresses facing the garth. These were at about 2.75 m (9 ft) intervals from centre to centre. In the south-west corner there was a clasping buttress at the inner angle. The internal width of the western walk was 3.97 m (13 ft) to the bench and 4.37 m (14 ft 4 in.) wall to wall (Table 2.3.8). The construction of this cloister walk was not a straightforward matter. As has been seen, the earlier buildings were at a much lower level and material had to be brought in from the middens of the Anglo-Saxon monastery, as the finds in the fill indicate.[13] Some levelling up was also necessary towards the south below the eastern walk of the cloister. The walks of the cloister are reconstructed on Illus. 1.1.5.

The widths of the cloister walks and their predecessors are set out in Table 2.5.3, which also incorporates the widths of the cloister walks given by Eric Fernie in 1994.[14] The width given for cloisters other than those at St Albans are not exact because it is uncertain whether the dimensions are measured between standing wall-faces or between the face of the bench and the opposite face of the wall. The latter is perhaps most likely. The mid twelfth-century distance between bench and opposite wall is only 3.97 m (13 ft) at St Albans, the same as that of the walk of the pre-Conquest New Minster in Winchester. The fourteenth-century St Albans widths are wider, even if that for the other churches is only between bench and wall. The mid-fourteenth-century walk at St Albans (4.63 m, 15.2ft) between the bench and the opposite wall is wider than that of any of the other walks.

The claustral complex now measured 45.42 m (149 ft) east–west from the chapter house to the cellarium (see Table 2.3.8 Line C) and 42.47 m (139 ft 4 in.) north–south from the south-west corner to the south aisle. The diagonal of this rectangle is 62.16 m (203.94 ft). The length of then nave to the east face of the possible west towers is about 61.23 m (200.88 ft), given the uncertainty of the position of the towers, let alone their standing faces. Combined with the uncertainty of what the ideal claustral layout may have been intended to be, the two lengths are remarkably close. That twice the nave length is equal to the length to the cord of the apse, as suggested by Fernie in 1994, does not work at St Albans, as is shown in Table 2.3.8.

The cellarium was now, or perhaps a little later under Adam the Cellarer, strengthened with massive rectangular buttresses inside and outside on the west wall, and with columns down the middle to take a stone vault. Small buttresses were added on the west face of the east wall to take the springing of the vault. The programme of works in the middle of the twelfth century was clearly massive.

[12] This table is an amended version of Fernie 1987, Table 3, 66, where St Albans is given as *c*.210 ft long.
[13] Biddle and Kjølbye-Biddle 1984c, 11.
[14] Fernie 1987, Table 1, 64.

Table 2.5.3. Internal width of the cloister walks at St Albans and other cathedrals in England and Scotland[15]

Place	Date	Width
Worcester (late 11th cent.)	14 ft	*c.*4.25 m
Westminster (extant)	14 ft	*c.*4.25 m
St Andrews	14 ft	*c.*4.25 m
Durham	15 ft	*c.*4.55 m
Norwich	15 ft	*c.*4.55 m
Ely	15 ft	*c.*4.55 m
Winchester, New Minster, wall to wall (mid-10th cent.)	13 ft	3.97 m
Winchester, Cathedral	?	?
St Albans (late 11th cent.)	? no cloister	
St Albans, E face to bench (mid-12th cent.)	13 ft	3.97 m
St Albans, wall to wall (mid-12th cent.)	14 ft 33 in.	4.37 m
St Albans, E face to bench (mid-14th cent.)	15 ft 2 in.	4.63 m
St Albans, wall to wall (mid-14th cent.)	16 ft 75 in.	5.11 m

In the south-west corner of the garth a rectangular lavatorium measuring about 7.52 m (24 ft 8 in.) long north–south, was constructed against the south wall. This is presumably the *lavatorium* attributed to Abbot Robert of Gorham, which was rebuilt as a circular structure in the mid-thirteenth century, when rectangular buttresses were added to the western walk of the cloister.[16] Only the robber-trench and a tiny fragment of the west wall survived to be excavated in 1982–4.

The use of the eastern walk of the cloister

During Final phase 25 (the first half of the fourteenth century), a stone drain was constructed (F. 553, Illus 2.3.3, 2.3.4, and 2.4.2, Section 5), with a clunch cover, sides, and bottom. Its stone bottom lay just under a metre below the cloister walk and the floor of the slype (Illus. 2.4.2). The drain runs below the slype floor and diagonally across the eastern walk of the cloister from the slype westwards, passing the north-west corner of the chapter house.

The reconstruction of the gothic cloister (Final phase 26, *c.*1350–96, Tables 2.3.8, 2.5.1, 2.5.3)

The level in the cloister walk was now raised to 100.43 m OD throughout. This is the level of the mortar bed for square printed tiles, the imprints of which had survived, but there were no tiles *in situ*. The western walk of the cloister was widened by cutting back the west face of the eastern wall and adding new stepped rectangular buttresses over the existing ones, with a new diagonal buttress at the inner south-west corner of the garth. Shallow buttresses were added along both inner faces at intervals of 2.1 m (7 ft) to carry a tierceron star vault. A contemporary sketch of the rib pattern of the vault was found scratched into the plinth of the Norman west wall of the western walk. The fallen vault, with many of its clunch ribs and almost all the stones which filled the space between the ribs, was found collapsed onto the walk. The areas between the ribs had carefully carved chalk ashlars: chalk is light and durable if kept dry, but not worth robbing for reuse. The fallen vault had not survived in the eastern walk, in part probably because the area in front of the chapter house was cleared during the sixteenth-century demolition so that it could be used as a workshop, with carts being driven in and out through the west door.

The cloister was vaulted for the first time in the mid-fourteenth century. The wall to the garth would have had wide openings over a dwarf wall between the buttresses. These openings were glazed by the end of the Middle Ages, but the glazing need not be primary in the gothic walk. It is attributed to Abbot John Stoke, who succeeded John Whethamstede at the end of his first abbacy.[17] Some of the glass fragments found pushed into the garth resembled the fifteenth-century glass from the chapter house. The circular lavatorium was demolished, and another presumably built further to the east along the south side of the cloister. The garth was organized with drains taking rainwater from the roof of the western walk. Paths, partly surfaced with crushed oyster and with Kentish rag-stone curbs, were seen along the walls in the south-west corner of the

[15] The width for the cloister walks of Worcester, Westminster (extant), St Andrews, Durham, Norwich, and Ely are as on Fernie 1987, 63–7. Table 1, 64.

[16] *ND* 7, f. 16r.

[17] *ND* 7, f. 36r. 2.5, p. 7, n. 12.

garth. The inner area of the cloister in the excavated areas seems to have been open and was presumably under grass.

The use of the walks of the late medieval cloister (Final phases 27–30, 1396–1539)

The area outside the west door of the chapter house was patched in the late fourteenth or early fifteenth century (F. 364), of which 13 tiles or fragments of tiles survived *in situ*.

Grave 20, only the lower legs of which fell within the excavation, lay in the eastern walk of the cloister (Illus. 2.3.4 and Section 5). The grave was dug into the walk half a metre north of the west door of the chapter house with the foot of the grave about a metre west of the west wall of the chapter house. The grave was 1.1 m deep (3.5 ft) and contained a wooden coffin held together with iron nails. The bones of the lower legs and feet were small and showed signs of arthritis; an age of death of around 40 is suggested.[18] The bones bore evidence of having been gnawed by rodents. The collapse of the coffin caused the fill to sink into the grave, as can be seen on Section 5 and the hollow was levelled up with mortar (Layer 482). This layer was still soft and loose when found, perhaps because a stone slab, which would have been re-laid after the collapse, had once covered the grave. A date in the early fifteenth century for the burial would fit with the finds and stratigraphic position, and the grave may be that of Bartholomew of Wendover, the rector of Shackerstone ('Schakreston' in MS), a Leicestershire parish. Bartholomew was an important benefactor, who was given a portrait in Cotton MS, Nero DVII. He gave 240 marks to the abbey in his lifetime to ease the cost of corrodies, and another unspecified sum towards the work of the cloister. He also made cash bequests to the abbot, the prior, and to priested and unpriested monks. The inventory of burials, which survives in BL, MS Harley 3775, records his burial in 'the middle of the cloister close to the chapter house doorway'.[19]

[18] See above, p. 18.
[19] *Gesta Abbat*.,I,435 and his biography in *ND* 7, ff. 106v–07r.

PART 2

6. THE DORTER RANGE

by MARTIN BIDDLE *and* BIRTHE KJØLBYE-BIDDLE

The dorter range was usually attached to the south side of the chapter house, and the northern five to seven metres of this range fell within the excavation. The rooms at the northern end of the undercroft were constantly changed so that there were some seven successive layouts which are shown in a simplified way in Illus 2.3.1 and 2.3.2 (shows Stage A), 2.3.3 (Stage B) and 2.6.1 (Stages C–G). For greater detail on Stage G, see Illus. 2.3.4. These changes did not involve a steady build-up of floors and features. The fourth set of changes (Illus. 2.6.1D) involved digging out the earlier floors and therefore nothing is known of the internal arrangements of Stages A, B, and C of the undercroft.

Undercroft A (Final phase 11, 1077–88, Illus 2.3.1–2.3.2)

The external walls

The original west wall of the chapter house (W. 57, Illus. 2.3.2) continued south beyond the south wall of the chapter house (Illus. 2.3.3). Only the lower two courses of the foundation of W. 57 survived below the later Romanesque west wall (W. 6), as can be seen on Section 1. Only a 0.20 m long sliver of the foundation of the east wall (W. 30) of the dorter range had survived (Illus. 2.3.1). The internal, east–west width of the range was about 8 m (26 ft 3 in.). The southern limit of the undercroft was not found, nor were there any traces of subdivisions. About 8 m (26 ft 3 in.) of the undercroft was uncovered.

The floor

The original floor had not survived but must have been higher than 99.45 m OD, since this was the level of undisturbed pre-chapter house deposits in the northern part of the undercroft.

The entrance

The entrance into Stage A, the first undercroft, had not survived. From Undercroft Stage B the entrance was in the west wall with the north face of the stairs, *c*.6 m south of the south face of the south wall of the first chapter house (Illus. 2.3.3). This and the later stairs had removed all signs of earlier steps (cf. Illus. 2.6.1).

Day stairs

Below the later day stairs in the north-west corner of the undercroft area (see Illus. 2.6.1 Stage D and Section 2), a plug of pre-chapter house layers had survived to 100.33 m OD. In the late eleventh/early twelfth century, W. 29 and W. 31 held back an area of higher layers within the north end of the undercroft 4 m east–west and 2 m north–south (Final phase 22). This high area might have extended further to south and east, or may have had more or less the same shape from the beginning. The existence of this reserved area can best be explained by the need from the beginning to have day stairs leading up over the chapter house into the south transept. If the day stairs had not been planned by Paul of Caen, there would have been no reason for leaving a high area. The existence of day stairs from 1088 onwards can therefore reasonably be suggested.

Undercroft B (Final phase 17, 1154/9–66, Illus. 2.3.3, Section 1, and Section 2)

The external walls

The new west wall (W. 6), using the lower foundation courses of its predecessor (W. 57), continued to the south. The east wall remained W. 30, but the northern metre or so had been cut down because the south wall of Robert of Gorham's chapter house was further to the south than that of its predecessor. The undercroft had the same east–west width (8 m, 26 ft 3 in.) as in Stage A, but no southern limit was found, and no subdivisions had survived. At this stage, the undercroft was therefore at least 7 m (23 ft) long north–south.

The floor and the entrance

The contemporary floor had not survived and may have been the same as before (higher than 99.45 m OD). This is supported by the evidence found in the entrance into the undercroft.

The scars of the bottom two steps for the entry in the west wall (W. 6) down into the undercroft had survived

at 99.79 and 99.54 m OD (Illus. 2.3.3). The stair had presumably been formed in stone. The interior floor-level by the stair was probably around 99.54 m. There is a hint that the floor could not have been much lower, because the area below the day stairs had its top at around 100.30 m OD (Section 2, on top of Layer 72) and only needed a retaining wall at Stage D of the undercroft, when the southern part of the floor was lowered.[1]

The day stairs

The day stairs leading over the vestibule of the chapter house must have been rebuilt, but would have started above the reserved plug, as they did before, at about 100.35 m OD above W. 6.[2]

Undercroft C (Final phase 19–20, 1154/9–83, Illus. 2.6.1 stage C)

The external walls

The only change discernable was the reconstruction of the east wall. W. 30 was demolished and W. 24 and W. 47 were constructed. The new wall had a 1.22 m (4 ft) wide shallow buttress on its east face, with its centre 4.09 m (13.5 ft) from the south face of the chapter house. The new wall incorporated several ashlars of Barnack limestone which must have been derived from buildings earlier than Robert of Gorham's rebuilding.[3]

The floor

Any changes to the internal arrangements, which there most probably must have been, had not survived, but it is possible that the floor was at this stage lowered to 99.45 m OD.

Undercroft D (Final phase 22, 1195–1214, Illus. 2.6.1 stage D and Section 1, 2, and 7)

The external walls

The external walls of the undercroft remained the same as before and were not later rebuilt.

The floor and internal arrangements

The excavation of the southern half of the area of the undercroft then went down to 99.06 m OD.[4] This area was separated from the northern area by a slightly diagonal east–west wall (W. 29 = W. 31) which was only 0.6 m (1 ft 8 in.) wide. It met the east wall opposite the shallow buttress. An opening in the wall, which survived almost solely as a robber-trench, is suggested towards the western limit of the wall. This opening would have led north into a 1 m (3 ft 3 in.) wide corridor (Room 1). This corridor led eastward into Room 2, which was 3.2 m (10 ft 6 in.) long east–west and 2.9 m (9 ft 6 in.) wide north–south. The partition wall (W. 46) between Rooms 2 and 3 was 0.5 m (1 ft 8 in.) wide with a door 1.07 m (3 ft 6 in.) wide leading east into Room 3, which measured 2.6 m (8 ft 8 in.) east–west and about 3.4 m (11 ft) north–south.

The north faces of Rooms 2 and 3 were formed by walls (W. 23, *c.*0.61 m or *c.*2 ft wide and W. 45 only a little over 0.30m or 1 ft wide) built along the rough south face of the foundation for the south wall of the chapter house. All these walls were built in a fairly soft bright orange mortar with two bottom courses of flint and upper courses of chalk, the corners and faces often finished in chalk blocks. The walls had one face, free-built down to foundation level. Normally this would be the face against the room, but even W. 31 was free-built this way to the bottom of the foundation and the wide foundation-trench filled in. The internal faces were well preserved, plastered, and whitewashed.

The whole of the southern area seems to have been one room, Room 4, 10.5 m (34 ft 6 in.) wide east–west of unknown length north–south (Illus. 2.6.1 Stage D). In the fourteenth century a vault was inserted (Final phase 26), three pads for the northern supports of which were found against W. 33, which itself replaced W. 31 (Illus. 2.6.1 Stage G). The floor in Room 4 was at 99.06 m OD, which is the height of the foundation-trench of W. 31 and the south side survived against the natural clay left in position (F. 600) in the next set of alterations in the middle of the thirteenth century.

The south end of the north–south section along 208.90 E (Section 7) cuts south–north across the undercroft from 495 N where the north wall (W. 23) of Room 2 appears. It continues south through the robber-trench (L. 779) of the west wall (W. 17) of Room 2 and through the wide foundation-trench (F. 447) along the north face of the south wall (W. 31) of Room 2 and the north wall of Room 4. This section continues south across W. 31. The narrow foundation-trench (F. 600) on the south side of W. 31 cuts through the natural left in position. The section continues south across the northern part of Room 4. There must have been at least two steps from Room 4 up into the corridor, where the floor was at 99.63 m OD, and there must have been one step down into Room 2, which had its floor at 99.44 m OD.

[1] See this page.
[2] See Section 2. Layer 236 may be the bedding in the entrance to the day stairs. The smooth mortar surface stops at *c.*203.30 where the first step may have been. Layer 72 is the uppermost pre-chapter house layer.
[3] See above, p. 42–47.
[4] We can tell that this must have been the floor level in Room 4 because the undisturbed natural subsoil reached this level, where it had been preserved because the later leveling down had created a bench (F. 600) by leaving the natural clay in position. See the southern end.

The area to the north of the corridor, an irregular rectangle, was now retained by the north wall of the corridor and the west wall of Room 2 (equals W. 17). It was above this plug that the day stairs continued to ascend over the vestibule of the chapter house (Section 2).

The rooms in the undercroft seem oddly irregular on plan (Illus. 2.6.1), but when in use this would have scarcely been noticeable. Both Room 1, the corridor, and Room 2 would have been very dark, as Room 3 may also have been although it may have been lit from a window cut into the east wall. Room 4 would have had light from the door into the cloister and perhaps also a window in the east wall.

The internal arrangements are unknown apart from a rectangular shaft (F. 453) against the north wall of Room 3. The shaft measures at the bottom 1 m (3 ft 3 in.) east–west and 0.5 m (1 ft 8 in.) north–south and was 1.5 m (5 ft deep). The shaft remained in use throughout the life of the undercroft and was filled with demolition rubble: large flints and clunch pieces. Nothing earlier than the demolition had survived and these sides had not been lined with anything which had left any trace. It was probably not necessary to line it: the heavy clay would have formed vertical edges if kept dry. The most likely explanation for this shaft is perhaps that it was used as a strong box. It was in a corner of the innermost room and may have been completely without natural light. Unless one knew it was there, it would not be easily found.

The finds

There were very few finds in the layers associated with the undercroft reconstruction. These were mainly residual Roman and a few fragments of RDFTs derived from the mid twelfth-century floor of the chapter house, which was re-laid in the vestibule at the same time as the undercroft was reconstructed.

Undercroft E and F (Final phase 24–5, Illus. 2.6.1)

Undercroft E

The next alteration in the undercroft was the lowering of the floor in Room 4 from 99.06 to 98.68 m OD, that is by 0.38 m (1 ft 3 in.). This lowering into the firm natural clay could have been done (see Section 7, south end) without exposing the south face of the foundation for W. 31 by leaving an 0.25 m wide strip along the south side. This strip (F. 600) then served as part of a bench 0.8 m wide (2.5 ft) against the north side of Room 4.

Undercroft F

Again, the only changes which left archaeological traces took place in Room 4. Flint and mortar walls were constructed on top of the clay bench along the north wall (Section 7, W. 53 = W. 54 on F. 600), perhaps because the clay benches were becoming worn: any damp on the clay would quickly have eroded them. The top of the stone addition was at 99.15 m. OD. Along the east wall a 0.61m (2 ft) wide bench (F. 347 = W. 50) was constructed with clay core and a flint west face. The surviving surface was damaged but was 99.05 OD at the highest point. A thin mortar floor (Section 7, Layer 887 with a thin grey trample, Layer 886, and burnt areas) was laid on top of deliberate infill (Layer 888), so that the floor surface was raised to 98.78. The distance between the top of the bench and floor was again 0.37 m (1 ft 3 in.). This height seems to have been required for some reason.

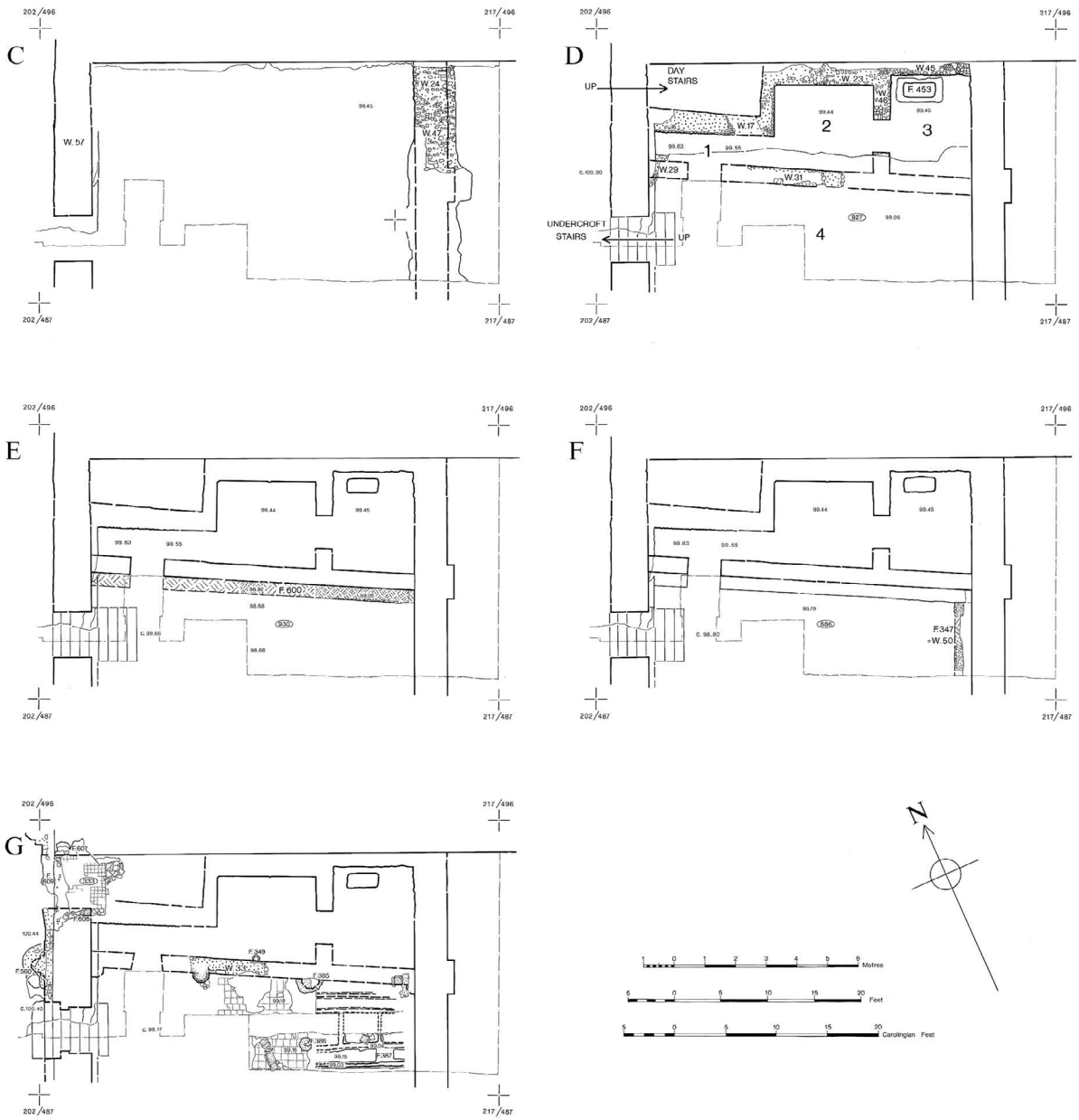
The finds

There were no finds in the few layers associated with the Undercroft VA alterations. In the infill (Layer 888) below the floor, much was found, mainly building débris such as clunch fragments, non-durable medieval window glass, glazed clay roof tile, yellow clay roof tile, medieval brick, plaster with whitewash and painted black stripes (*RF 851*), iron nails and lead waste. There was also domestic rubbish such as animal bones, snails, grey and red medieval pottery of thirteenth- and fourteenth-century date. The primary reconstruction can therefore only be fitted in between Undercroft IV and Undercroft VB. VB clearly belongs to the first half of the fourteenth century, whereas Undercroft VA only can be placed somewhere between the mid-thirteenth and the early to mid-fourteenth centuries.

Undercroft G (Final phase 27, Illus. 2.6.1)

Room 4 was now provided with a stone vault springing from three (presumably four) engaged columns along the south side of W. 33 (Section 7), which divided the room into three parts east–west. 2.1 m (7 ft) south of the two eastern columns a footing pad had partly survived against the east wall and in the floor (F. 386 south of F. 385, Illus. 2.6.1G).

The eastern third of Room 4 up to the vault pillars (F. 385–6, Illus. 2.6.1G) was provided with timber racking which left a pattern of 1.82 m (6 in.) wide east–west and north–south slots in the floor. The northern slot had its south edge about 0.61m (2 ft) from the wall and the next slot about 0.43 m (1.5 ft) south of the north slot. This slot is connected to a slot parallel to it 1.04 m (3.5 ft) to the south, but two north–south slots 1.22 m (4 ft) apart with the eastern slot 1.04m (3.5 ft)



Illus. 2.6.1. The structural development of the north end of the dorter range, stages C to G.

from the east face and the western 1.04 m (3.5 ft) face form the western limit of the racking. To the south 0.43 m (1.5 ft) distant was another east–west slot. To the west of the rack the floor was tiled with medieval floor tiles which had left good imprints in the mortar bed (Section 7, Trench 2, Layer 672). No tiles were found in situ. Several stones of major clunch ribs of late fourteenth-century date were found as they had fallen at the dissolution.

The rack is so wide that it is tempting to suggest that it may have carried wine or beer barrels, but it is of course impossible to tell what may have been stored here.

The finds

There were many finds of late fourteenth-century and earlier date. One piece of early stoneware (*RF. 795*) of fifteenth- or sixteenth-century date found in the floor-bedding must be later contamination; other than this, the finds support a date at the end of the fourteenth century for the final remodelling of the undercroft.

Final phases 28 and 29

In the first half of the fifteenth century the cloister walk and chapter house were rebuilt (Final phases 28 and 29) and finally the whole chapter house (Final phase 29).

PART 2

7. THE AREAS AROUND THE CHAPTER HOUSE

by MARTIN BIDDLE *and* BIRTHE KJØLBYE-BIDDLE

North of the chapter house

The present slype and its south wall cover the western third of this area. The remainder of the area north of the north wall of the chapter house was excavated as part of Trench 3 (Illus. 2.2.2). A stone-lined drain (F. 328, also F. 553) presumably continued west under the slype (Illus 2.3.3 and 2.3.4; cf. Section 5 and Illus. 2.4.2), draining to the west and ultimately around the north-west corner of the chapter house and out under the eastern cloister walk. Two buttresses (W. 12 and W. 13) were added to the north wall of the chapter house, and a third (W. 11) was appended diagonally at its north-east corner.

East of the chapter house

Only a very small area was excavated to the east of the east wall of the chapter house (Illus. 2.2.2), principally to the north in Trench 3, to a lesser extent to the south in Trench 4. The diagonal buttress (W. 11) added to the north-east corner of the chapter house was matched at the south-east corner by a similar buttress (Illus. 2.3.4), but this had been almost entirely removed and only the slightest part of its site lay within Trench 4. The line of the north wall of the chapter house was continued to the east by the addition of W. 10.

South of the chapter house

The area south of the eastern part of the chapter house, bounded to the west by the east wall of the dorter range (W. 30 / W. 47), was not excavated below the later medieval layers. The principal features (Illus. 2.3.4) were the foundations of two late fifteenth-century buttresses (W. 19 and W. 21), which were added to the south wall of the chapter house and corresponded respectively to the foundations of the buttresses (W. 12 and W. 13) attached to the north wall.

Four substantial post-holes, and F. 306 and F. 309 to the south of the eastern foundation (W. 19) and F. 304 and F. 313 to the south of the western buttress foundation (W. 21) probably represent the sites of vertical timbers associated with the construction of the two buttresses. The purpose of post-holes F. 303 and F. 305 is unknown. Illus. 2.3.5 shows the impact on the area of the robbing of the buttresses and of the adjacent south wall of the chapter house in the mid-sixteenth century.

West of the chapter house

This area includes the eastern half of the north end of the east range of the cloister and the exterior of the west wall (W. 6) of the chapter house including the west door. The development and use of this area from *c.*1077 to its demolition in 1539 is described and discussed in this book (See also Illus 2.3.3 and 2.3.4, with Sections 1, 2, 3, and 5).

PART 3. THE ARCHITECTURE AND DECORATION OF THE CHAPTER HOUSE

PART 3

1. THE BUILDING STONES

by the late F.W. ANDERSON[1]

The city of St Albans is on Chalk but there are small patches of Tertiary sediments (Eocene) in the neighbourhood, one of which is under the northern half of St Albans.[2] Flint is the local building material, bonded, as in the abbey, with Roman brick. The Chalk near Dunstable, about 14 miles to the north, has been quarried as a building stone (Totternhoe stone) and since it is much harder than the south country chalk, it has generally been used quite satisfactorily for interior work as in the present abbey.

Of the stone samples seen, the commonest was the local Tertiary sandstone, too soft to be of much use as a building stone but which may have been used for paving. There was some Lincolnshire Limestone (Barnack, Weldon, and Ketton) which with greensand was probably used for quoins, and window and door frames, as in the Abbey. The roofing material appears to have been Stonesfield Slate from Oxfordshire, some Devon slate, and perhaps also some Purbeck Limestone. There is a single fragment of Hertfordshire Puddingstone, either part of a quern or used as random rubble. The Tufa is likely to have been random rubble. The only two fragments of Caen Limestone both came from late fourteenth-century deposits.

Phasing of building stone samples

Caen Limestone

Final phase 26, *c.*1350–96 (P.ph. 38): Sample 66

Final phase 27, 1396-1402 (P.ph. 52): Sample 59, from G. 13

Carstone (a ferruginous sandstone from the local Tertiary)

Final phase 4, *c.*800?–*c.*1000 (P.ph. 123b): Sample 188, from F. 593.

Final phase 35, *c.*1725–*c.*1750 (P.ph. 280): Sample 10

Flagstone

Final phase 9, *c.*1000–77 (P.ph. 133): Sample 53, from G. 3

Final phase 2–10, pre-*c.*400?–1077 (P.ph. 3): Samples 54 and 168

Final phase 41, 1920–37 (P.ph. 93): Sample 25

Green, garnetiferous slate

Final phase 43, 1940–60 (P.ph. 675): Sample 156

Hertfordshire Puddingstone

Final phase 42, 1937–40 (P.ph. 664): Sample 1

Kentish Rag

Final phase 42, 1937–40 (P.ph. 664): *RF 1131.1*; *RF 1131.2*

Lincolnshire Limestone (Barnack)

Final phase 17, 1154/9–66 (P.ph. 487): *RF 2304* (from W. 14, pilaster buttress, north-east angle of the chapter house)

Final phase 19–20, 1154/9–83 (P.ph. 179): *RF 863*, from W. 24 (east wall of dorter range)

Final phase 42, 1937–40 (P.ph. 403): Sample 8

Final phase 42, 1937–40 (P.ph. 664): Sample 3

Lincolnshire Limestone (Ketton)

Final phase 42, 1937–40 (P.ph. 664): Sample 4

[1] We are grateful to Dr Robin Sanderson for kindly reviewing and where necessary updating the terminology used in the late Dr Anderson's report.

[2] For the geology of the site, see above, p. 18–19.

Lincolnshire Limestone (Weldon)

Final phase 8, *c.*1000–77 (P.ph. 6): Sample 167, from G. 36

Final phase 29, *c.*1450–*c.*1500 (P.ph. 544): Sample 22, from W. 12

Final phase 35, *c.*1725–*c.*1750 (P.ph. 257): *RF 847*

Final phase 42, 1937–40 (P.ph. 403): *RF 7*

Lower Greensand

Final phase 35, *c.*1725–*c.*1750 (P.ph. 257): Sample 68, from G. 12 (F. 300); (P.ph. 715): Sample 164, from F. 257

Final phase 41, 1920–37 (P.ph. 727): Sample 7, from F. 112

Final phase 42, 1937–40 (P.ph. 664): Sample 5

Purbeck Limestone

Final phase 17, 1154/9–66 (P.ph. 156): Sample 55

Purbeck marble

Final phase 35, *c.*1725–*c.*1750 (P.ph. 65): *RF 640*

Final phase 39, 1880–1900 (P.ph. 84): Sample 6

Purple Slate

Final phase 37A, *c.*1775–1800 (P.ph. 605): Sample 155, from F. 227

Final phase 44, 1960–70 (P.ph. 451): Sample 161, from F. 64

Final phase 43–45, 1940–78 (P.ph. 104): Sample 160

Sandstone (Tertiary), brown pink and yellow

Final phase 3, *c.*400?–*c.*800? (P.ph. 123a): Samples 173 and 217, both from F. 579; Samples 178, 200 (5 specimens), and 212–3, all from F. 571

Final phase 4, *c.*800?–*c.*1000 (P.ph. 123b): Samples 185–7, 209–10, and 214–5, all from F. 543; Sample 193, from F. 593; (P.ph. 124): Sample 189

Final phase 4–5, *c.*800?–*c.*1000 (P.ph. 5): Sample 61, from F. 501

Final phase 5, *c.*800?–*c.*1000 (P.ph. 127): Sample 181; (P.ph. 128): Sample 170, from F. 545

Final phase 6, *c.*800?–*c.*1000 (P.ph. 130): Sample 183, from G. 10

Final phase 8, *c.*1000–77 (P.ph. 6): Sample 165, from G. 36

Final phase 9, *c.*1000–77 (P.ph. 133): Samples 172 and 211, both from G. 29; Sample 179, from G. 8

Final phase 2–10, pre-*c.*400?-1077 (P.ph. 3): Samples 168-9

Final phase 10, *c.*1000–77 (P.ph. 8): Sample 56, from F. 502; Sample 58, from F. 498; (P.ph. 9): Sample 60, from F. 502; (P.ph. 135): Sample 64, from F. 239

Final phase 11, 1077–88 (P.ph. 12): Sample 216, from F. 591

Final phase 41, 1920–37 (P.ph. 412): Sample 65

Final phase 45, 1970–78 (P.ph. 462): Sample 159

Sandstone (Tertiary), shelly

Final phase 3, *c.*400?–*c.*800? (P.ph. 123a): Sample 176, from F. 579; Samples 205-7, all from F. 571

Final phase 10, *c.*1000–77 (P.ph. 8): Sample 62

Shelly Limestone (?Corallian)

Final phase 23, 1214–35 (P.ph. 187): Sample 192, from F. 550

Stonesfield Slate

Final phase 39, 1880–1900 (P.ph. 83): Sample 70, from F. 204

Final phase 42, 1937–40 (P.ph. 97): Sample 148

Tufa

Final phase 29–30, *c.*1450–1539 (P.ph. 549): Sample 67, from W. 10

Upper Greensand

Final phase 35, *c.*1725–*c.*1750 (P.ph. 257): Sample 151, from G. 5 (F. 173)

PART 3

2. THE TILED FLOORS OF THE CHAPTER HOUSE

by MARTIN BIDDLE, BIRTHE KJØLBYE-BIDDLE *and* MEGAN KIRKPATRICK

The tiled floors of the first and second (apsidal) chapter houses (Final phases 11–12, 1077–93 and Final phases 12–14, 1088–1151)

No floor tiles were found in position in either of these two earlier apsidal chapter houses, but this does not mean that neither had a tiled floor, not least because in addition to the relief-decorated floor tiles (RDFT) used to floor the third rectangular chapter house, two groups of fragmentary tiles of quite different types were found.

The first and earlier group of 17 fragments of relief-decorated Anglo-Saxon glazed floor tiles (ASGT, Types A–I, Illus 3.2.1–3.2.9 and Table 3.2.1) is of a type now well known, notably from the Anglo-Saxon Old Minster at Winchester.[1] Two of these St Albans fragments came from graves in the cemetery of Anglo-Saxon burials underlying the construction of the first chapter house by Abbot Paul of Caen, confirming their pre-conquest date. These fragments of ASGT probably come from a floor in a pre-Norman building, presumably ecclesiastical, somewhere close to or under the nave of the present abbey.

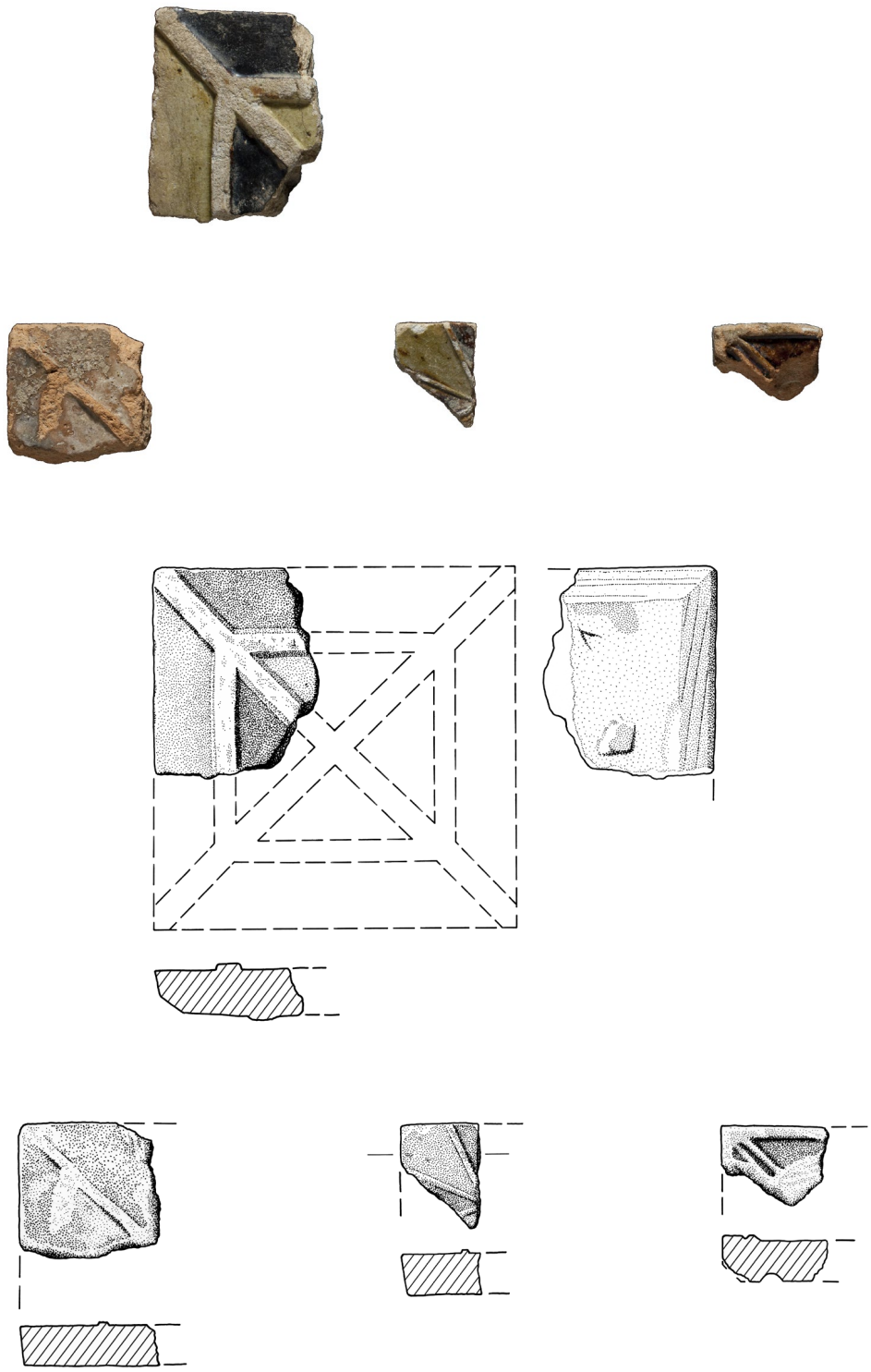
The second group of tiles consists of 26 fragments of a quite different type and fabric. These Anglo-Norman Glazed Tiles (ANGT, Types A–H) are of at least two different sizes, about 252 mm (9¾ in.) or 198 mm (7½ in.) square (Illus 3.2.10–3.2.17; Table 3.2.2). They include a single example of an oblong rather than a square tile (ANGT, Type G) and seven fragments are flanged (ANGT, Types C1–5). These tiles have complicated patterns of adjacent or intersecting circles (ANGT, Types A–C) or single circles (ANGT, Types D and E) enclosing animal devices, such as Type D2 with confronted birds set in a circular frame. Most of the fragments of ANGT Types A, B, and C are well worn suggesting that they lay flat but some of the flanged fragments of ANGT Type C are less worn indicating that they were perhaps used to cover the face of a step or steps.

All 26 fragments of ANGT were found in Trench 2 of the 1978 excavation (Illus. 2.2.2). This trench covered the greater part of the apse of the first apsidal chapter house, including the step into the apse, but not the step into the extended apse of the second chapter house. This suggests that tiles of the ANGT type were laid to cover the floor of the first chapter house and were retained and the tiling perhaps extended to cover the floor of the second chapter house. When this stage of the chapter house was extended and completely rebuilt in the years after the middle of the twelfth century these tiles (ANGT) were replaced with relief-decorated floor tiles (RDFT) of a quite different type.[2]

[1] Biddle 1964, 2)09–10, Pl. LIV.

[2] See below, pp. 108–45.

ASGT Type A



ASGT Type A (top: *RF 897*. Bottom, from left to right: *RF 4671*; SAM No. 53, F.7. 68; *RF 740*; all 1:3)

Illus. 3.2.1. Anglo-Saxon glazed floor tiles (ASGT) Type A. Photographed and drawn by Ian Cartwright and Simon Hayfield.

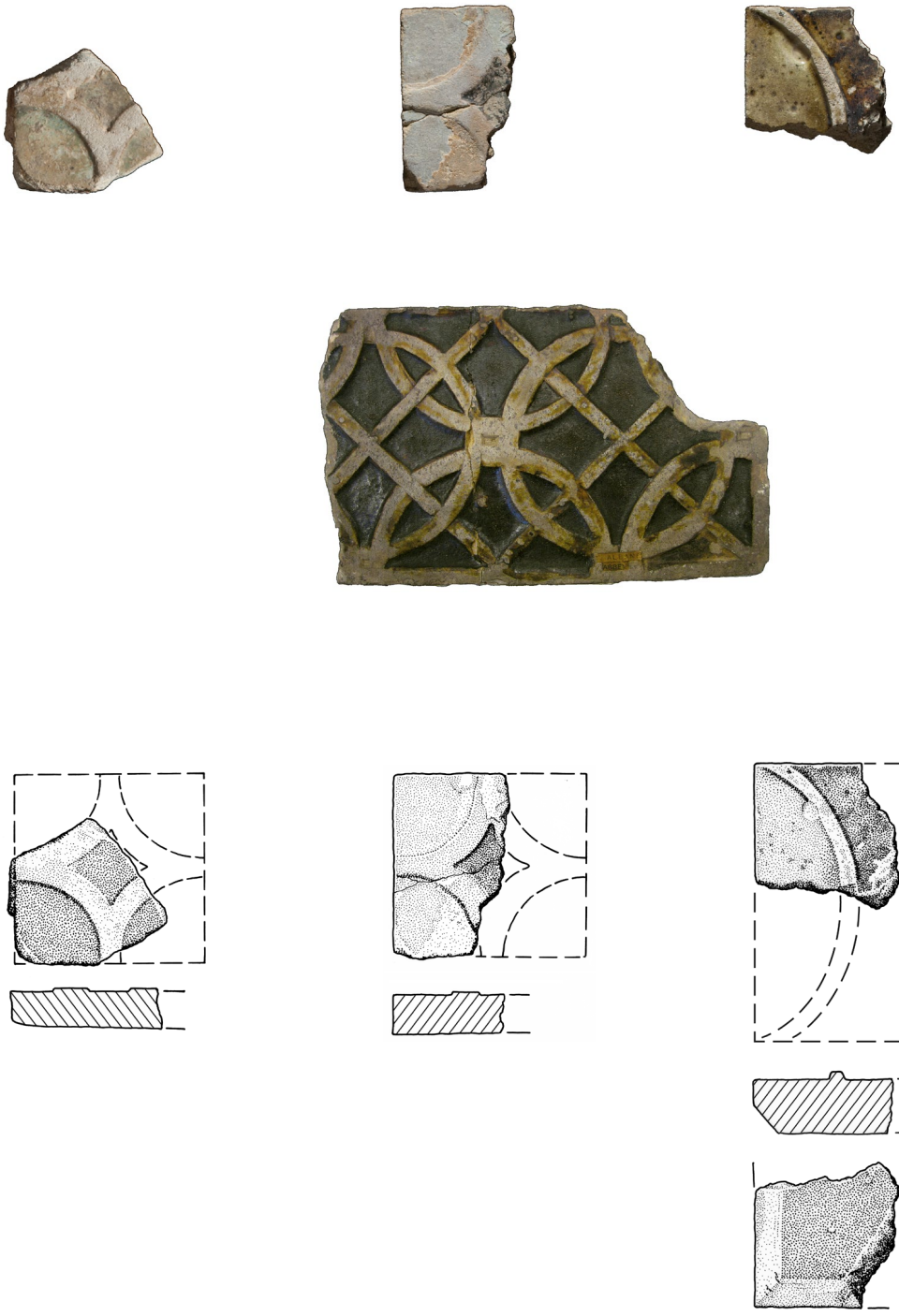
ASGT Type B



ASGT Type B (on the left: *RF 8940* and *RF 734*; on the right: *RF 7809*, all 1:3)

Illus. 3.2.2. Anglo-Saxon glazed floor tiles (ASGT) Type B. Photographed and drawn by Ian Cartwright and Simon Hayfield.

ASGT Type C



ASGT Type C (from left to right: *RF 727*; *RF 849*; *RF 8468*. Example in photo only: VAM No. C.65-1933; all 1:3)

Illus. 3.2.3. Anglo-Saxon glazed floor tiles (ASGT) Type C. Photographed and drawn by Ian Cartwright and Simon Hayfield.

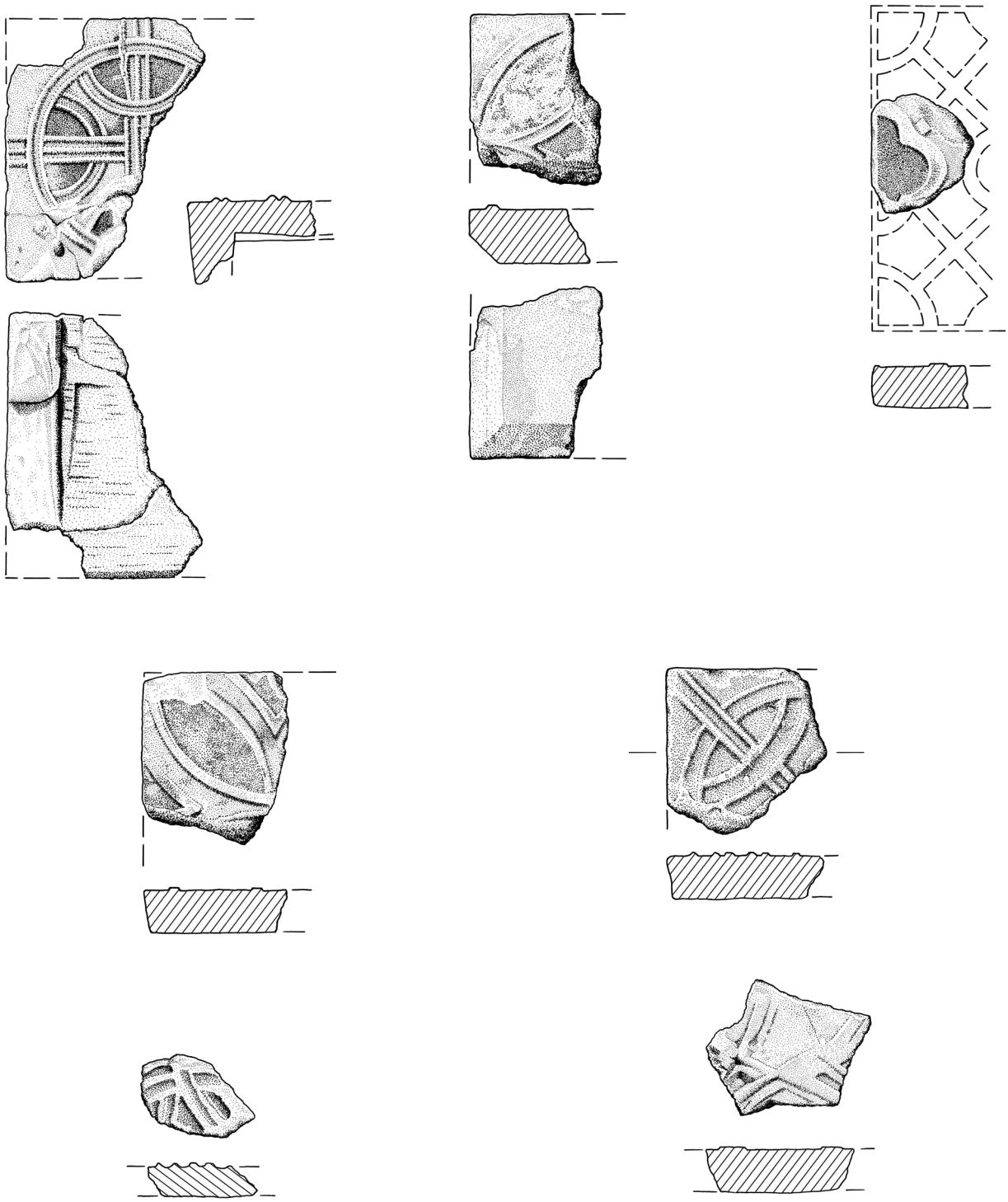
ASGT Type D



ASGT Type D photographs (top, left to right: *RF 8402* and *RF 8403*; *RF 7805*; *RF 667*. Middle, left to right: *RF 7807*; SAM No. 53, D.36. 64. Bottom, left to right: *RF 1811*; *RF 553*; all 1:3)

Illus. 3.2.4. Anglo-Saxon glazed floor tiles (ASGT) Type D. Photographed and drawn by Ian Cartwright and Simon Hayfield.

ASGT Type D



ASGT Type D illustrations (top, left to right: *RF 8402* and *RF 8403*; *RF 7805*; *RF 667*. Middle, left to right: *RF 7807*; SAM No. 53, D.36. 64. Bottom, left to right: *RF 1811*; *RF 553*; all 1:3)

Illus 3.2.4 *cont.*

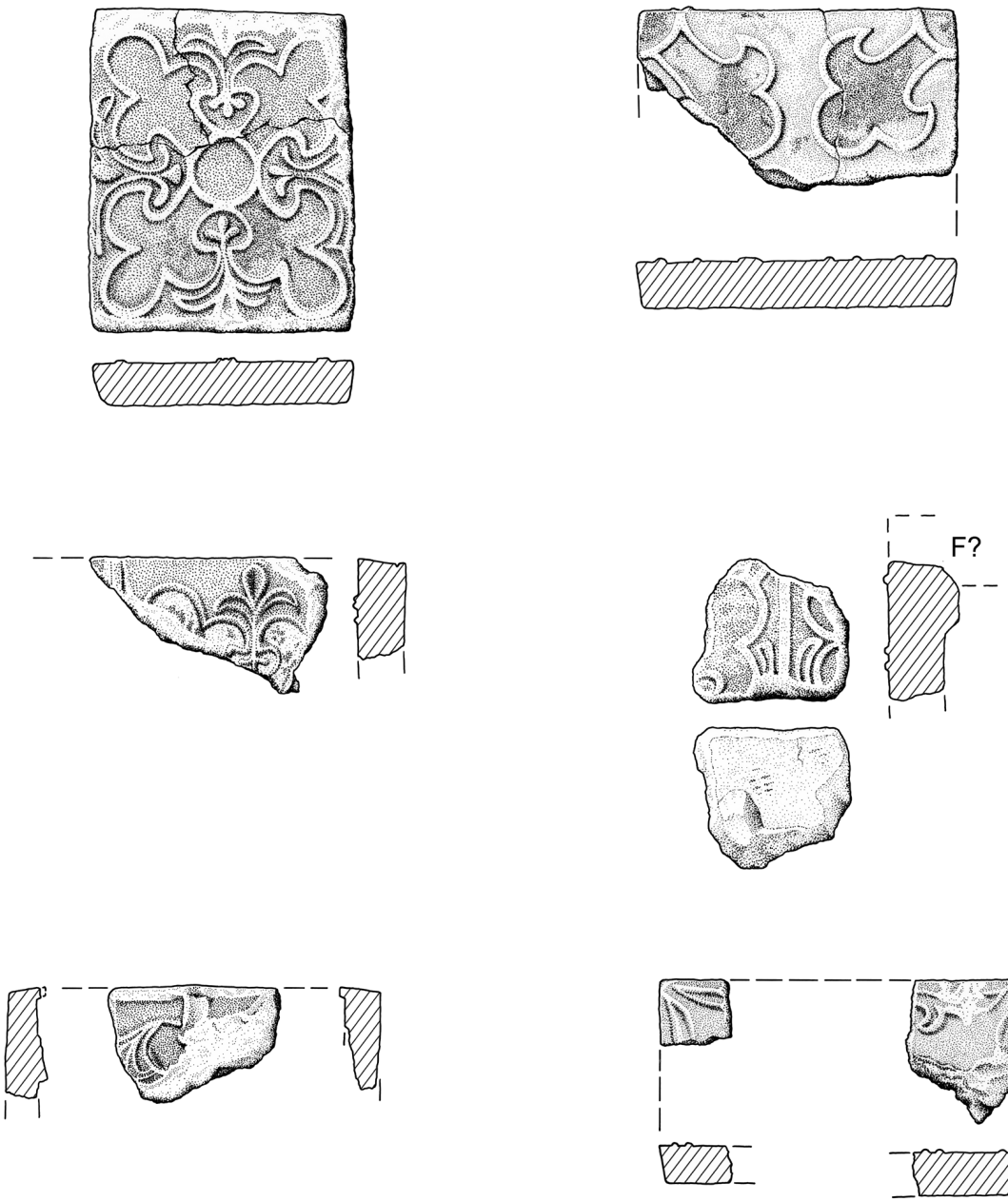
ASGT Type E



ASGT Type E photographs (top, left to right: SAM No. 81.2671, 43A, C-3042; *RF 8450*. Middle, left to right: *RF 4632*; *RF 1963*. Bottom, left to right: *RF 730*; *RF 729*; *RF 1805*; all 1:3)

Illus. 3.2.5. Anglo-Saxon glazed floor tiles (ASGT) Type E. Photographed and drawn by Ian Cartwright and Simon Hayfield.

ASGT Type E



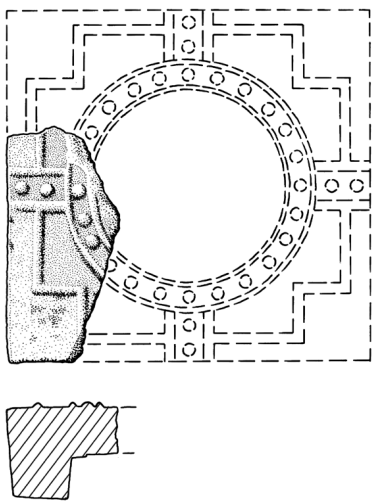
ASGT Type E illustrations (top, left to right: SAM No. 81.2671, 43A, C-3042; *RF 8450*. Middle, left to right: *RF 4632*; *RF 1963*. Bottom, left to right: *RF 730*; *RF 729*; *RF 1805*; all 1:3)

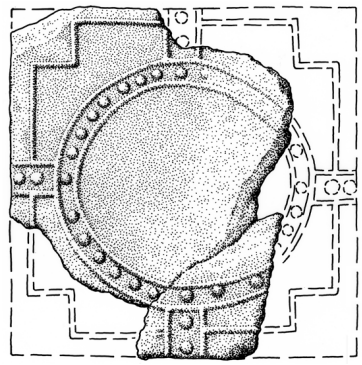
Illus 3.2.5 *cont*.

ASGT Type F



ASGT Type F (*RF 8004*; 1:3)





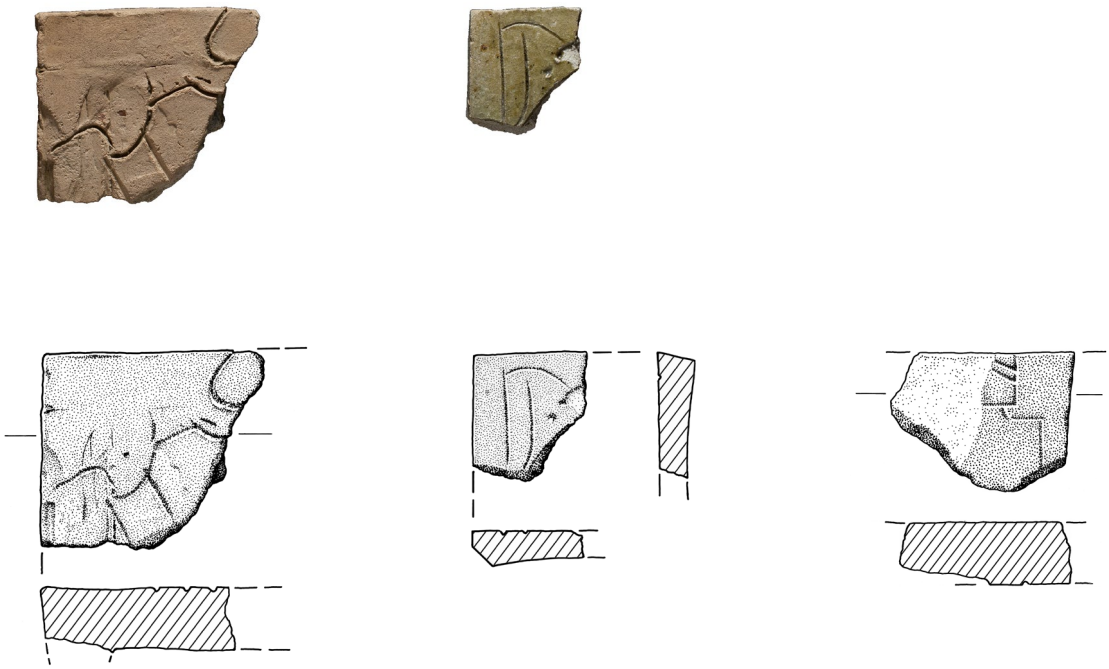
ASGT Type F (left to right: *RF 8004*; *RF 7806*; both 1:3)



ASGT Type F (*RF 8004*; 2:3)

Illus. 3.2.6. Anglo-Saxon glazed floor tiles (ASGT) Type F. Photographed and drawn by Ian Cartwright and Simon Hayfield.

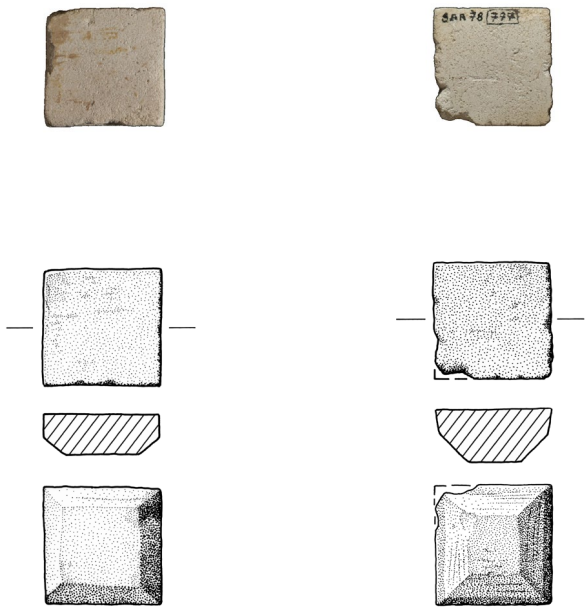
ASGT Type G



ASGT Type G (left to right: *RF 8381*; *RF 4340*; *RF 8369* (drawing only); all 1:3)

Illus. 3.2.7. Anglo-Saxon glazed floor tiles (ASGT) Type G. Photographed and drawn by Ian Cartwright and Simon Hayfield.

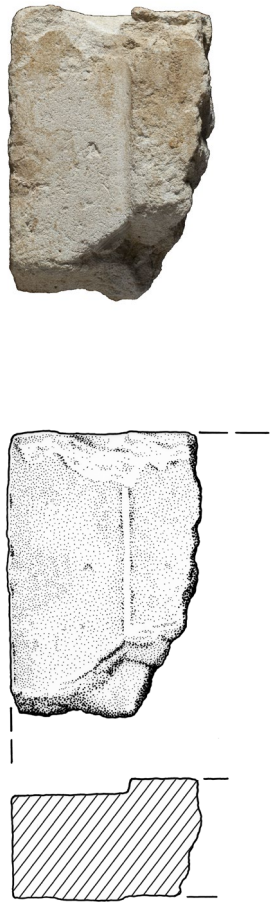
ASGT Type H



ASGT Type H (left to right: *RF 8405*; *RF 777*; both 1:3)

Illus. 3.2.8. Anglo-Saxon glazed floor tiles (ASGT) Type H. Photographed and drawn by Ian Cartwright and Simon Hayfield.

ASGT Type I



ASGT Type I (*RF 1318*; 1:3)

Illus. 3.2.9. Anglo-Saxon glazed floor tiles (ASGT) Type I. Photographed and drawn by Ian Cartwright and Simon Hayfield.

Table 3.2.1. Anglo-Saxon RDFT from St Albans Abbey.
Fragments without Final phase (P.ph.) are from Trenches 5, 6, and 8 (1982–4) and Trenches 10–13 and 17 (1994–5).

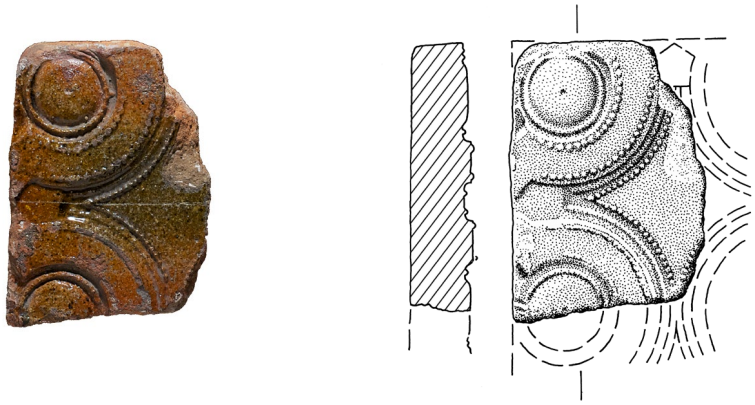
Type	F.ph.	P.ph.	RF no.	Tr. and Layer	Grave or Feature no.
A[3]	13	479	897	3, 619	-
A	26	39	737	1, 258	-
A[4]	1982–4	1982–4	4487	6, 303	-
A	1982–4	1982–4	4671	6, 325	-
A	1994–5	1994–5	8401	13, 116	-
A	1994–5	1994–5	8977	13, 52	-
A	1994–5	1994–5	8991	13, 52	-
A	-	-	740	1, u/s	-
B	9	133	220	2, 957	G. 8
B	27	52	734 cf. *RF 8940*	1, 273	F. 338/G. 13
B	1982–4	1982–4	4333	5, 208	-
B	1994–5	1994–5	7809	10, 82	-
B	1994–5	1994–5	8940 cf. *RF 734*	u/s, Victorian reconstruction	-
C	13	479	898	3, 619	-
C	17	491	849	3, 616	-
C	26	37	727	1, 304	F. 363
C[5]	26	37	728	1, 304	F. 363
C[6]	1994–5	1994–5	7800	10, 11	-
C	1994–5	1994–5	8468	17, 396	-
C[7]	-	-	-	-	-
C[8]	-	-	-	-	-
C[9]	-	-	-	-	-
C[10]	-	-	-	-	-
C[11]	-	-	-	-	-
C[12]	-	-	-	-	-
D	35–37A	630	1811	3, 318	-
D	38	642	553	3, 134	-
D	1982–4	1982–4	4322	5, 203	-
D[13]	1982–4	1982–4	4489	6, 301	-
D	1994–5	1994–5	7805	10, 57	-
D	1994–5	1994–5	7807	10, 71	-
D	1994–5	1994–5	7981	10, 66	-
D[14]	1994–5	1994–5	8402	13, 151	-

[3] SAM No. 90.815.
[4] Missing.
[5] SAM No. 90.817.
[6] Missing. Illustrated in finds register.
[7] From St Albans Abbey, found in 1871, presumably during building work in north transept. VAM No. C.65-1933. Bequeathed to the museum by Robert Garraway Rice F.S.A (d. 1933). Labels on tile read: 'St Albans Abbey, Herts. 26 July 1871, see newspapers for that month. R. Garraway Rice F.S.A.'; 'Tile from St Albans Abbey perhaps same date as red tile [RDFT Type F in V&A] see back of large red tile. RGR. July 26th 1871'. See Ward Perkins 1937, 146, Fig. 5, 4, which is said to be from the Lady Chapel, but probably from north transept.
[8] From St Albans Abbey. BM Reg. No. 1853, 0401.41. Collected by Augustus Franks and donated to the BM in 1853. BM Cat 11,155, Design No. 1. Illustrated in AC III, Tiles, The Large Scrapbook, 172. Parts of the accompanying text state: 'Tile found at St Albans', 'British Museum'. Same design as *RF 727* and *RF 849*.
[9] In floor of north transept, St Albans Abbey. Tiles found during building work in the north transept in 1871 and re-laid in the floor in 1874. Same design as *RF 727* and *RF 849*.
[10] As last.
[11] As last.
[12] As last, but same design as *RF 8468*.
[13] Poss. flange, broken off before/in firing.
[14] *RF 8402–3* are parts of the same tile.

Type	F.ph.	P.ph.	RF no.	Tr. and Layer	Grave or Feature no.
D[15]	1994–5	1994–5	8403	13, 210	-
D	1994–5	1994–5	8404	13, 210	-
D[16]	-	-	667	3, u/s	-
D[17]	-	-	-	-	-
D[18]	-	-	-	-	-
D[19]	-	-	-	-	-
D[20]	-	-	-	-	-
D[21]	-	-	-	-	-
E[22]	17	157	1805	2, 609	-
E	26	37	729	1, 304	F. 363
E	26	37	730	1, 304	F. 363
E	32	240	1963	2, 418	-
E	1982–4	1982–4	4348	5, 419	-
E	1982–4	1982–4	4632	6, 303	-
E	1982–4	1982–4	7505	u/s	-
E	1994–5	1994–5	7808	10, 71	-
E	1994–5	1994–5	8450	13, 52	-
E[23]	-	-	-	-	-
E[24]	-	-	-	-	-
F[25]	1994–5	1994–5	7806	10, 71	-
F[26]	1994–5	1994–5	8004 (larger piece)	11, 139	-
F[27]	1994–5	1994–5	8004 (smaller piece)	11, 139	-
F	1994–5	1994–5	8005	11, 139	-
G	1982–4	1982–4	4340	5, 371	-
G[28]	1994–5	1994–5	8369	11, 109	-
G	1994–5	1994–5	8381	12, 227	-
H	16	154	777	2, 862	F. 450
H	1994–5	1994–5	8405	13, 210	-
I	-	-	1318	u/s	-

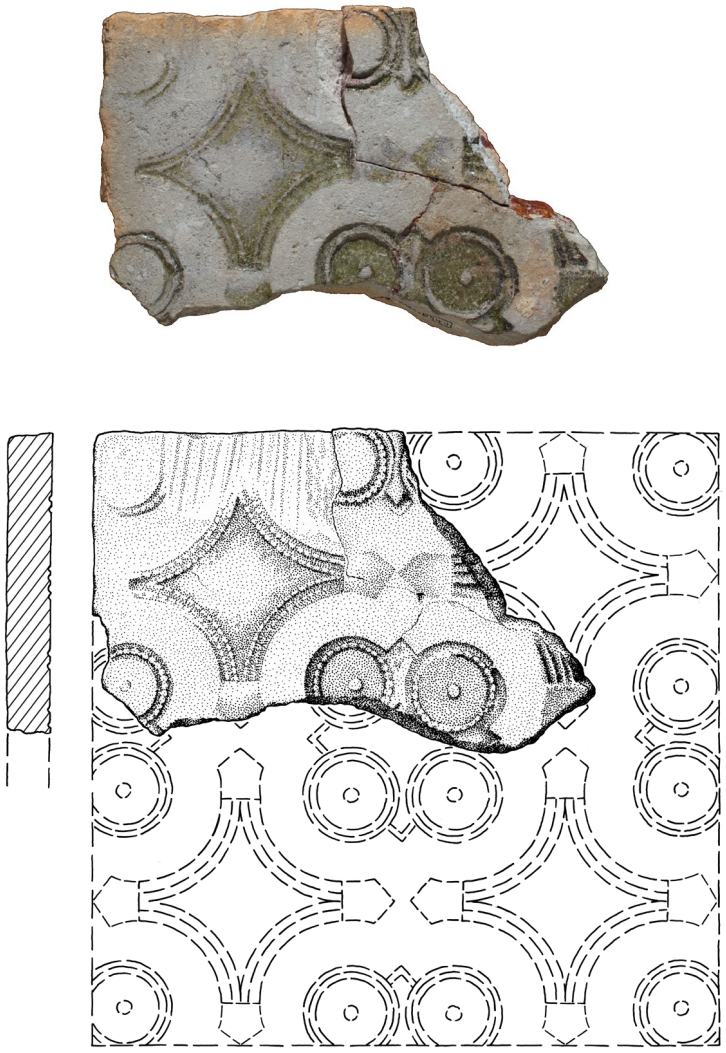
[15] *RF 8402–3* are parts of the same tile.
[16] SAM No. 90.814.
[17] From Blundells/Heritage Close, St Albans. SAM No. 53, D.36. 64.
[18] From St Albans Abbey (labelled on tile as 'St Albans Abbey Lady Chapel'). BM Reg. No. 1880, 0213.2. Donated by John Thomas Micklethwaite in 1880. BM Cat. 11,152, Design No. 2; Ward Perkins 1937, 146, Fig. 5, 1. PH, Watercolour ref. 117. Same design as *RF 667*.
[19] From SAHAS, Site 16 (Abbey Orchard), Tr. 9, Sq. 4 and 4b. 46. In SAM. Same design as *RF 667*.
[20] From Vintry Garden, SAM No. 74.7, BC. Saunders and Havercroft 1978, 32, Fig. 12, 32. Same design as *RF 667*.
[21] From Verulamium changing rooms. Fill of robber-trench of Insula XVIII, Bldg. 1 (adjacent to St Michaels Church). SAM No. 76.1, AG 2. Possible indication of use of ASGT in St Michaels Church?
[22] SAM No. 90.816.
[23] From St Andrew's Chapel, St Albans. SAM No. 81.2671, 43A, C-3042. PH, Watercolour ref. H28, drawing labelled 'From rubbing by P. Manning. 1907' 'Site of St Andrews Chapel. St Albans Abbey. Herts County Museum.' Presumably found in the 1896 work on the churchyard on the north side of the abbey, the site of St Andrews Chapel (Page 1898a).
[24] From St Albans Abbey. BM Reg. No. 1880, 0213.1. Donated by John Thomas Micklethwaite in 1880. BM Cat. 11,151, Design No. 3. Ward Perkins 1937, 146, Fig. 5, 2. PH, Watercolour ref. 118.
[25] Missing (except small fragment), illustrated in finds register.
[26] There are two tiles labelled as *RF 8004*, but they do not join.
[27] There are two tiles labelled as *RF 8004*, but they do not join.
[28] Missing. Illustrated in finds register.

ANGT A1



ANGT A1 (*RF 8942*; 1:3)

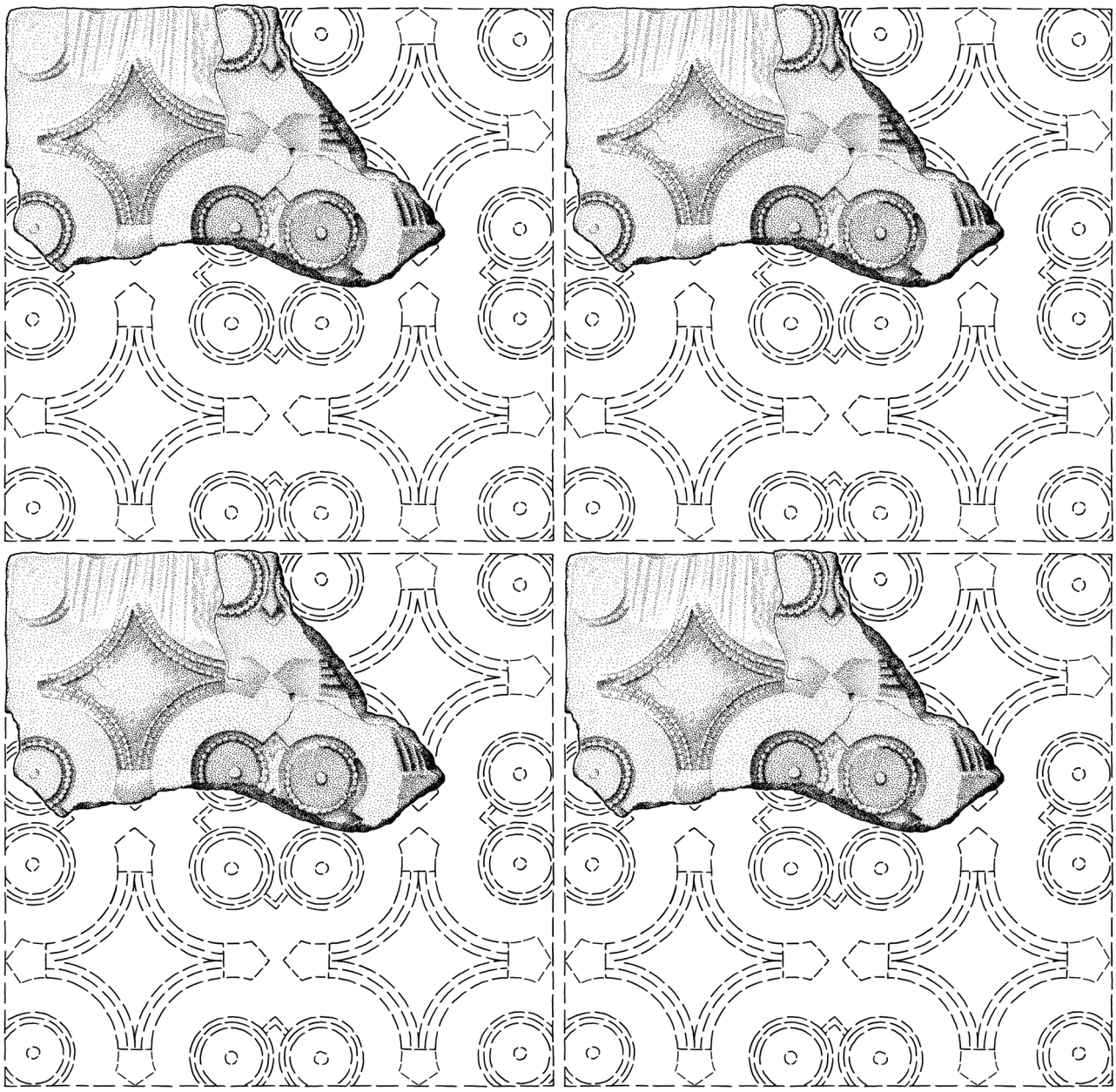
ANGT A2



ANGT A2 (*RF 8944*; 1:3)

Illus. 3.2.10. Anglo-Norman glazed floor tiles (ANGT) Type A1–3. Photographed and drawn by Ian Cartwright and Simon Hayfield.

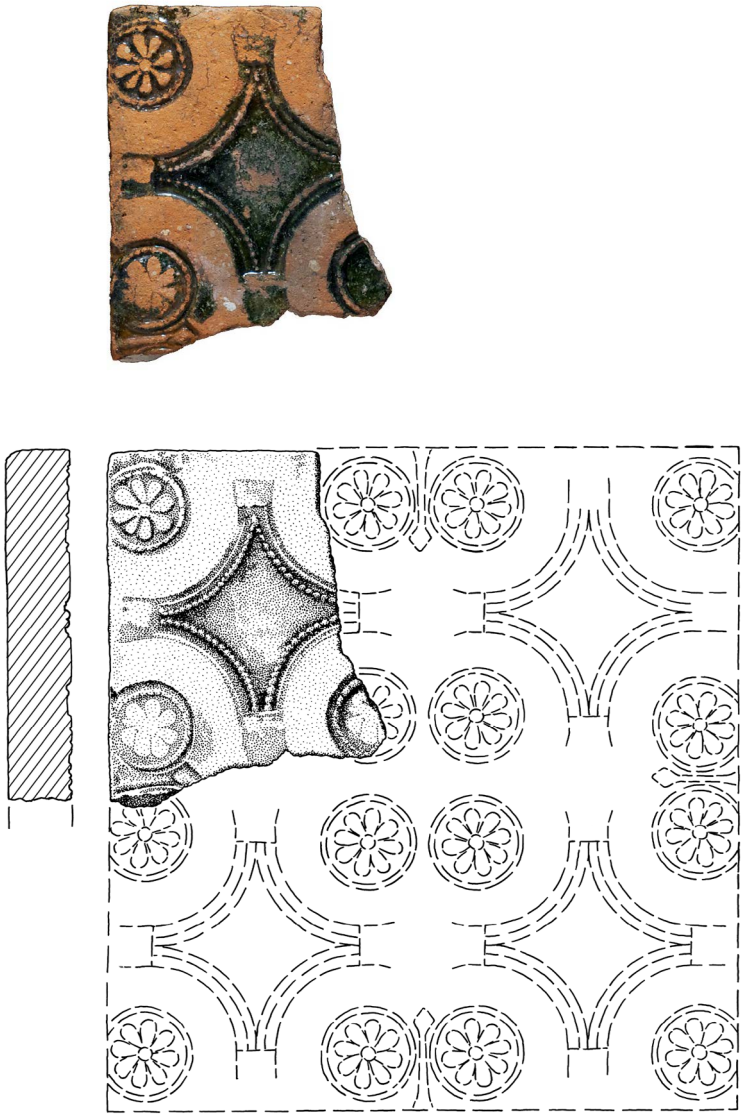
ANGT A2 cont.



ANGT A2: reconstructed four-tile pattern (1:3)

Illus. 3.2.10 *cont.*

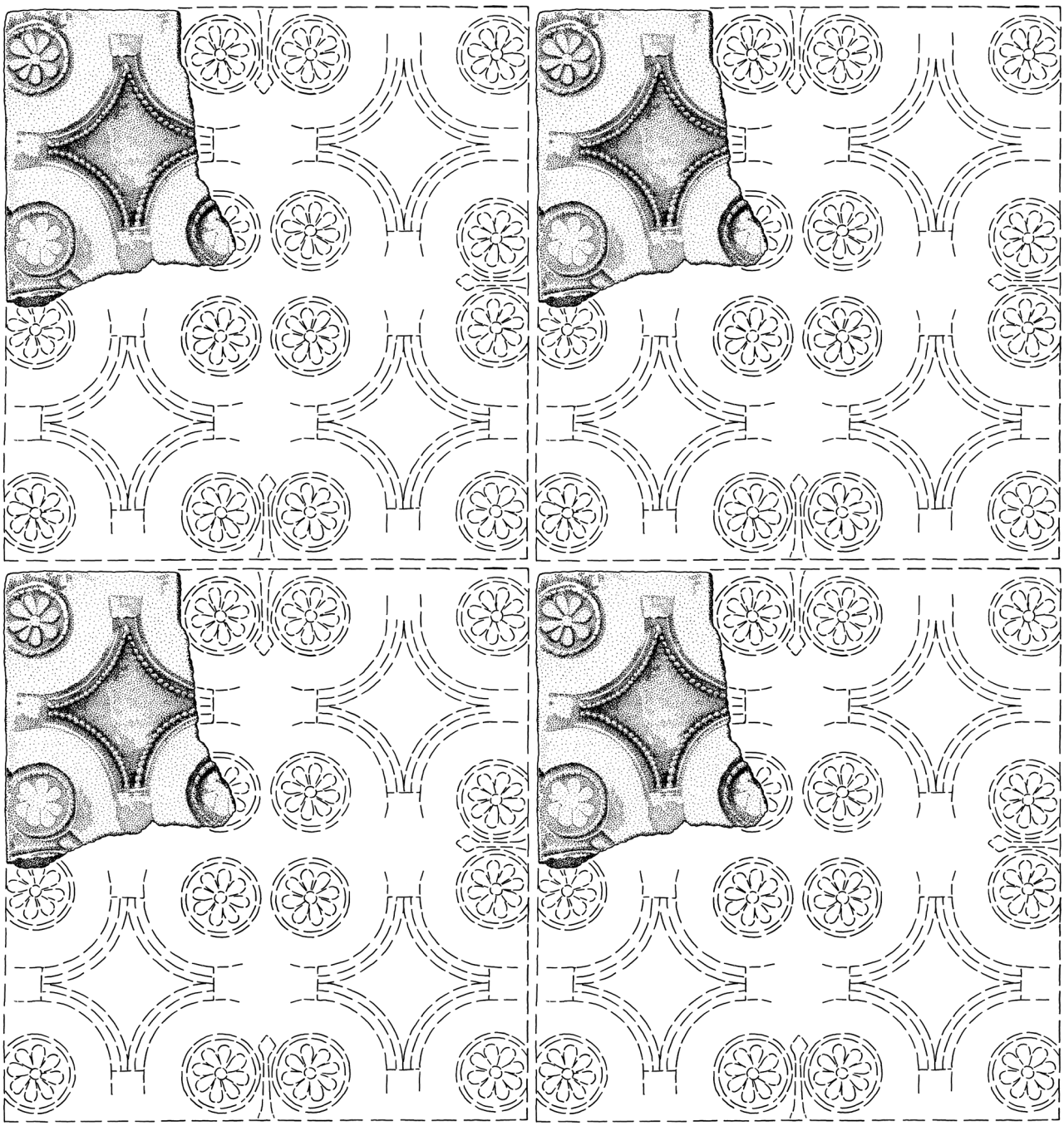
ANGT A3



ANGT A3 (*RF 3088*; 1:3)

Illus. 3.2.10 *cont.*

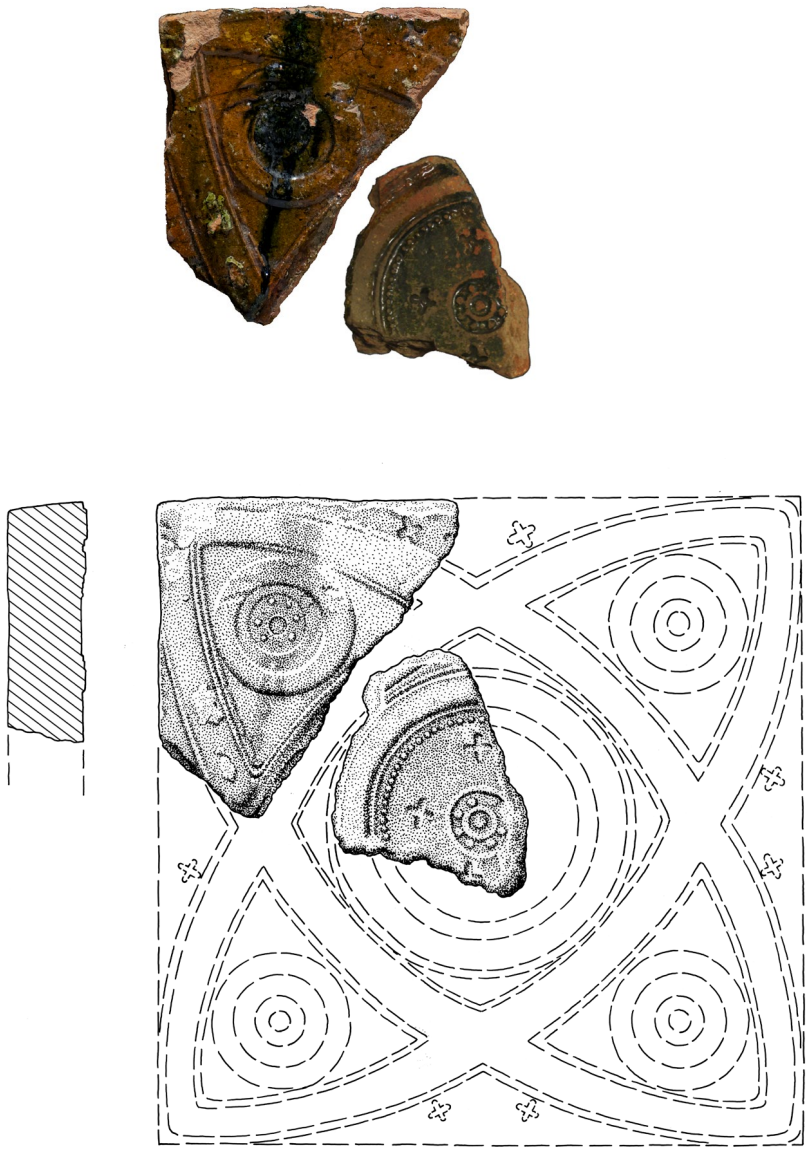
ANGT A3 cont.



ANGT A3: reconstructed four-tile pattern (*c.*1:3)

Illus. 3.2.10 *cont.*

ANGT Type B1



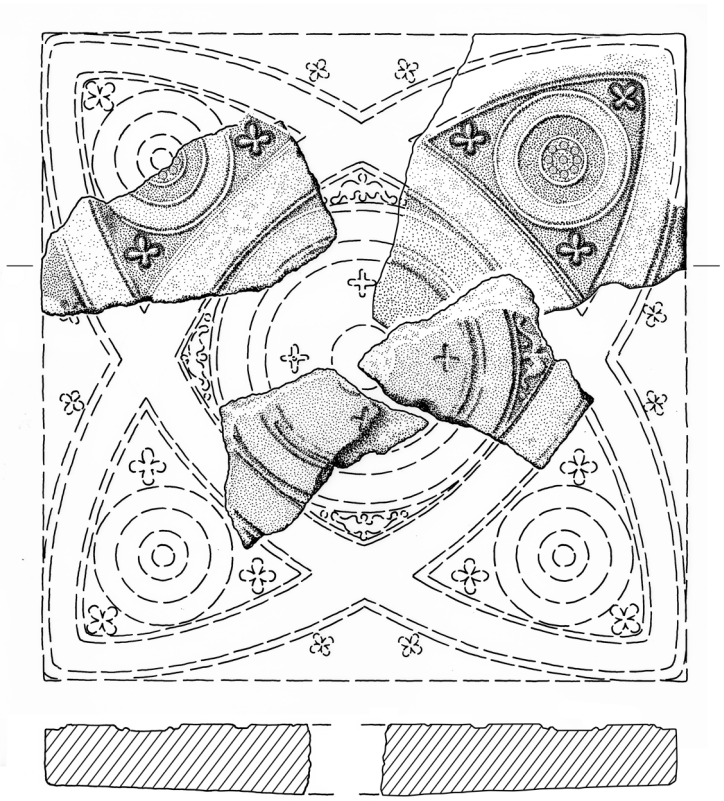
ANGT Type B1 (left to right: SAM No. C.81 MEH. 2; MOL No. 37.155/3; both 1:3)

Illus. 3.2.11. Anglo-Norman glazed floor tiles (ANGT) Type B1–2. Photographed and drawn by Ian Cartwright and Simon Hayfield.

ANGT Type B2

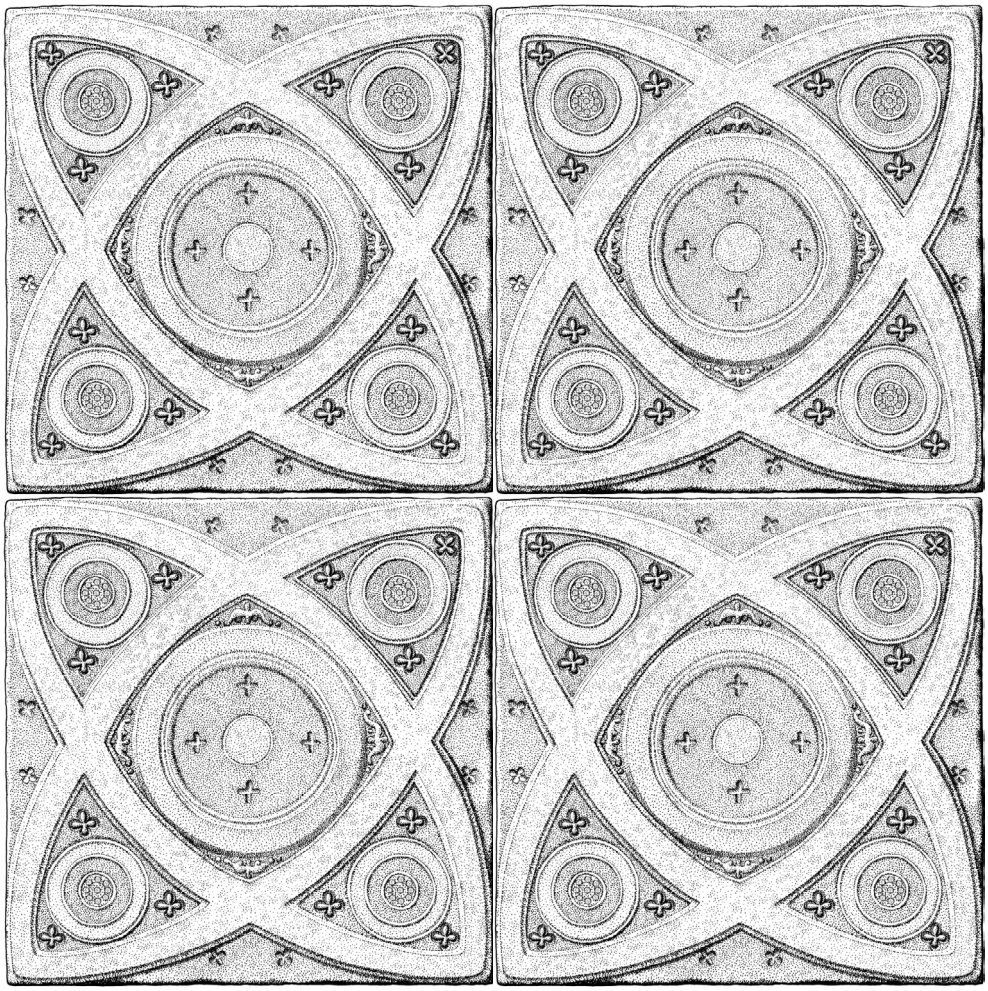


ANGT Type B2 (left to right: *RF 927*; SAM Nos 53.D.6.39–40; all 1:3)



ANGT Type B2 (left to right: *RF 927*; SAM Nos 53.D.6.39–40, top right corner based on drawing by L. Keen; all 1:3)

Illus. 3.2.11 *cont.*



ANGT Type B2: reconstructed four-tile pattern (1:4)

Illus. 3.2.11 *cont.*

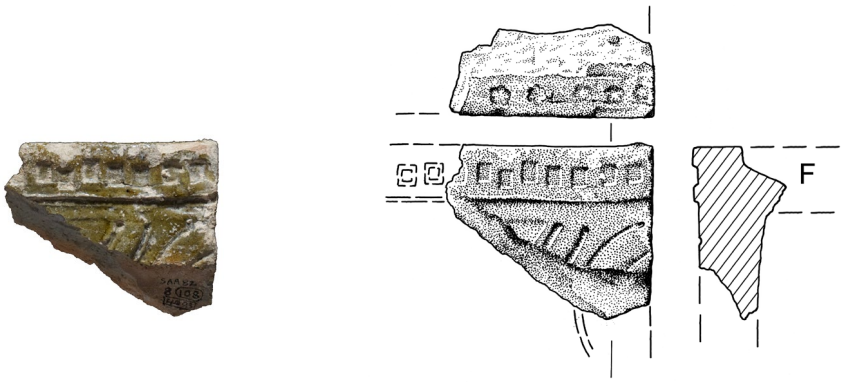
ANGT Type C1



ANGT Type C1 (top row, left to right: *RF 630*; *RF 624*; *RF 627* and *RF 629* (joined). Bottom row, left to right: *RF 817*; *RF 645*; *RF 245*; all 1:3)

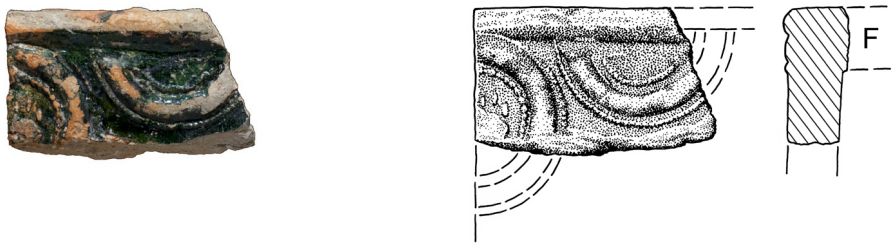
Illus. 3.2.12. Anglo-Norman glazed floor tiles (ANGT) Type C1–5. Photographed and drawn by Ian Cartwright and Simon Hayfield.

ANGT Type C2



ANGT Type C2 (*RF 4003*; 1:3)

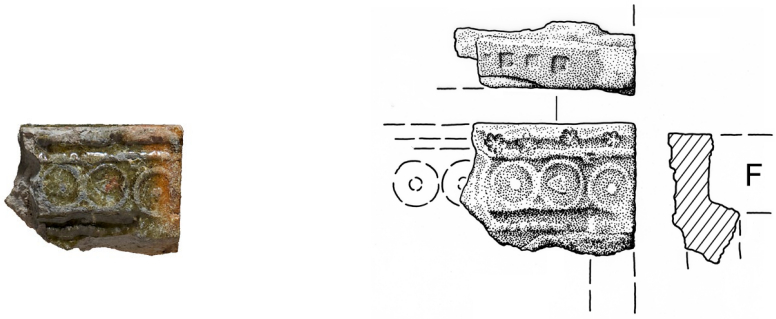
ANGT Type C3



ANGT Type C3 (*RF 598*; 1:3)

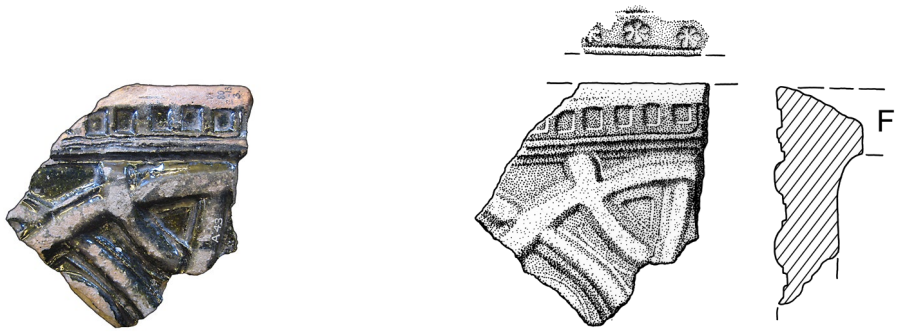
Illus. 3.2.12 *cont*.

ANGT Type C4



ANGT Type C4 (*RF 626*; 1:3)

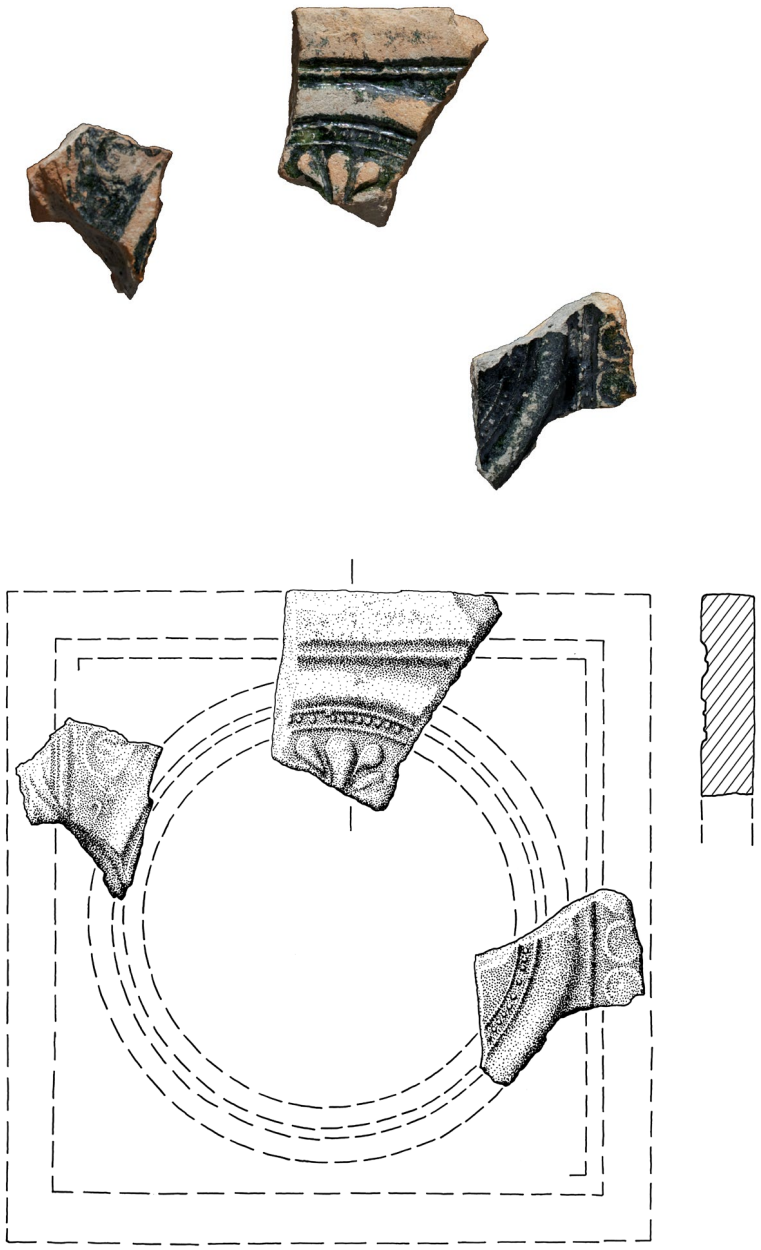
ANGT Type C5



ANGT Type C5 (BM Cat, 11,153; 1:3)

Illus. 3.2.12 *cont.*

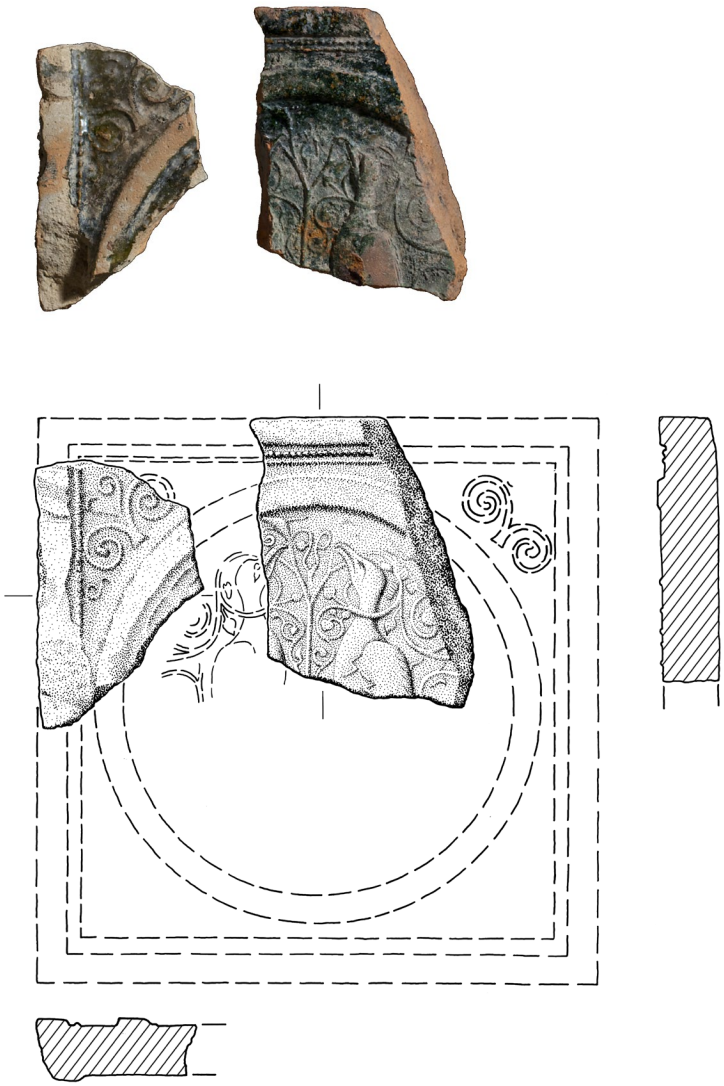
ANGT Type D1



ANGT Type D1 (left to right: *RF 592*; *RF 1946*; *RF 1806*; all 1:3)

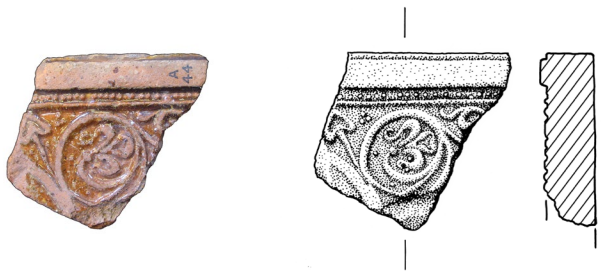
Illus. 3.2.13. Anglo-Norman glazed floor tiles (ANGT) Type D1–3. Photographed and drawn by Ian Cartwright and Simon Hayfield.

ANGT Type D2



ANGT Type D2 (left to right: SAM No. 53.C.(/11).63; SAM No. 2009.140, C. 81, DP. 2.8; both 1:3)

ANGT Type D3



ANGT Type D3 (BM Cat, No. 11,157 (but tile in BM labelled 11,154); 1:3)

Illus. 3.2.13 *cont.*

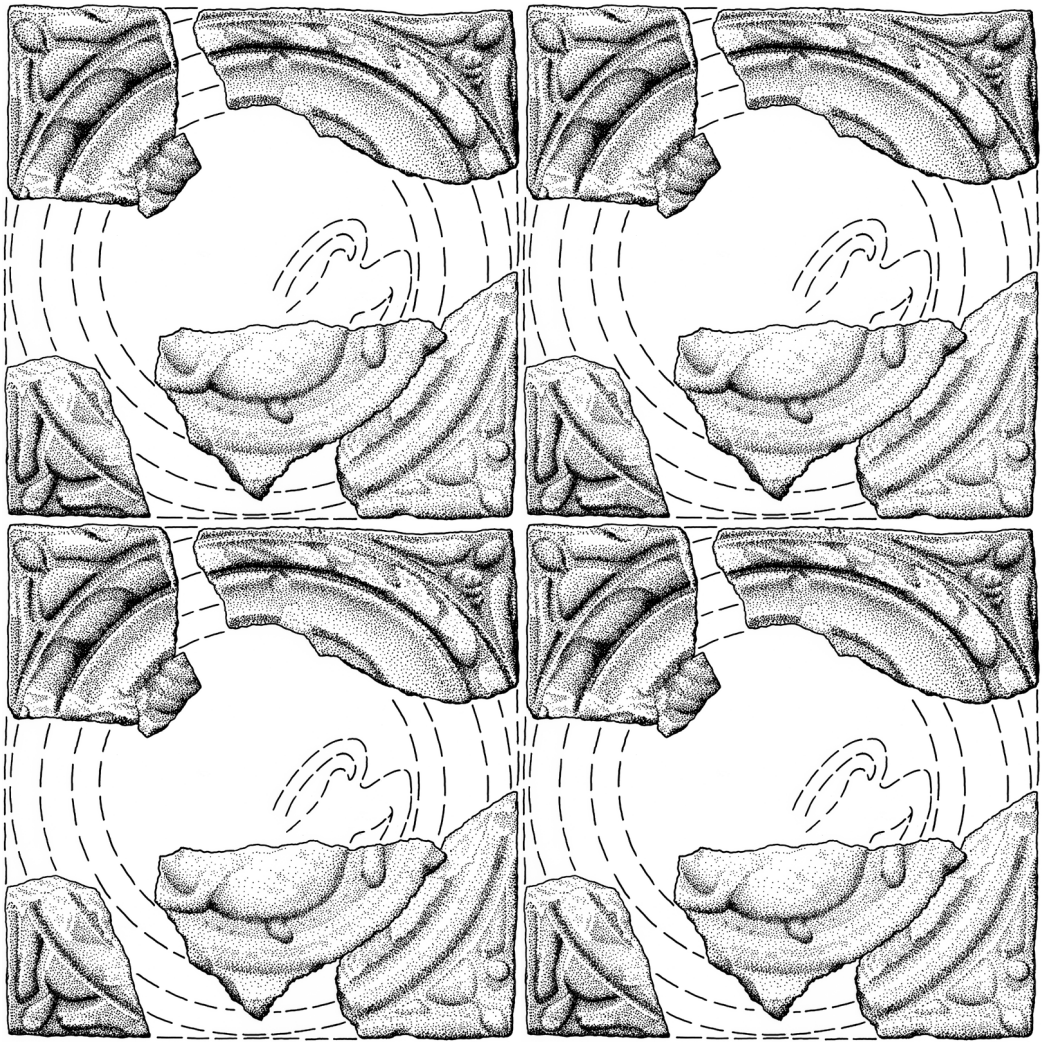
ANGT Type E



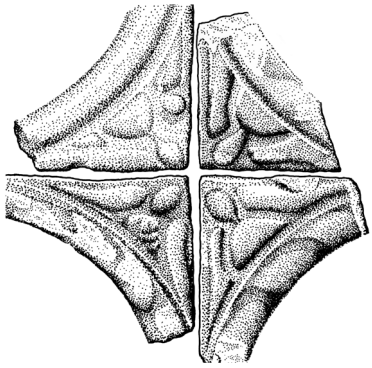
ANGT Type E (top, from left to right: overfired from Trench 2, Layer 418; overfired from Trench 2, Layer 420. Bottom, from left to right: overfired from Trench 2, Layer 137; underfired from Trench, Layer 386; underfired from Trench 2, Layer 310. Far right: overfired from Trench 2, Layer 626; all 1:3)

Illus. 3.2.14. Anglo-Norman glazed floor tiles (ANGT) Type E. Photographed and drawn by Ian Cartwright and Simon Hayfield.

ANGT Type E cont.



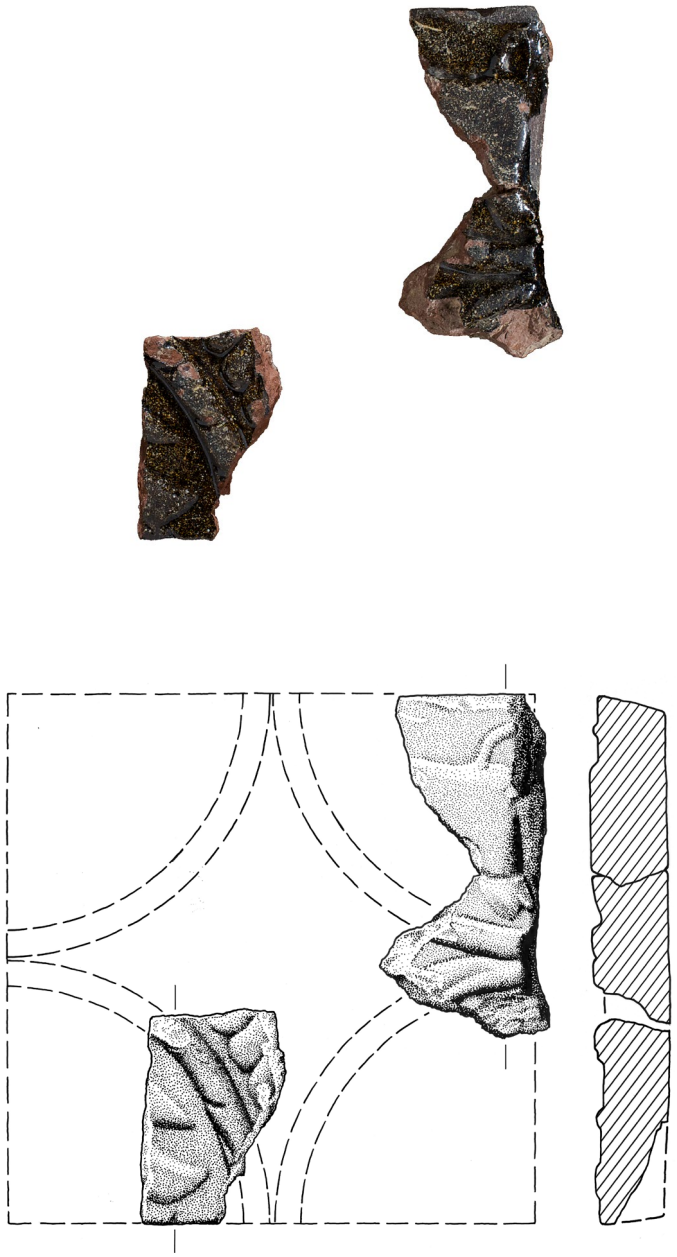
ANGT Type E: reconstructed four-tile pattern (1:3)



ANGT Type E: confronted corners (1:3)

Illus. 3.2.14 *cont.*

ANGT Type F



ANGT Type F, overfired (from left to right: from Trench 2, Layer 626; from Trench 2, Layer 626 (upper of the two joining fragments); from Trench 2, Layer 544 (lower of the two joining fragments); all 1:3)

Illus. 3.2.15. Anglo-Norman glazed floor tiles (ANGT) Type F. Photographed and drawn by Ian Cartwright and Simon Hayfield.

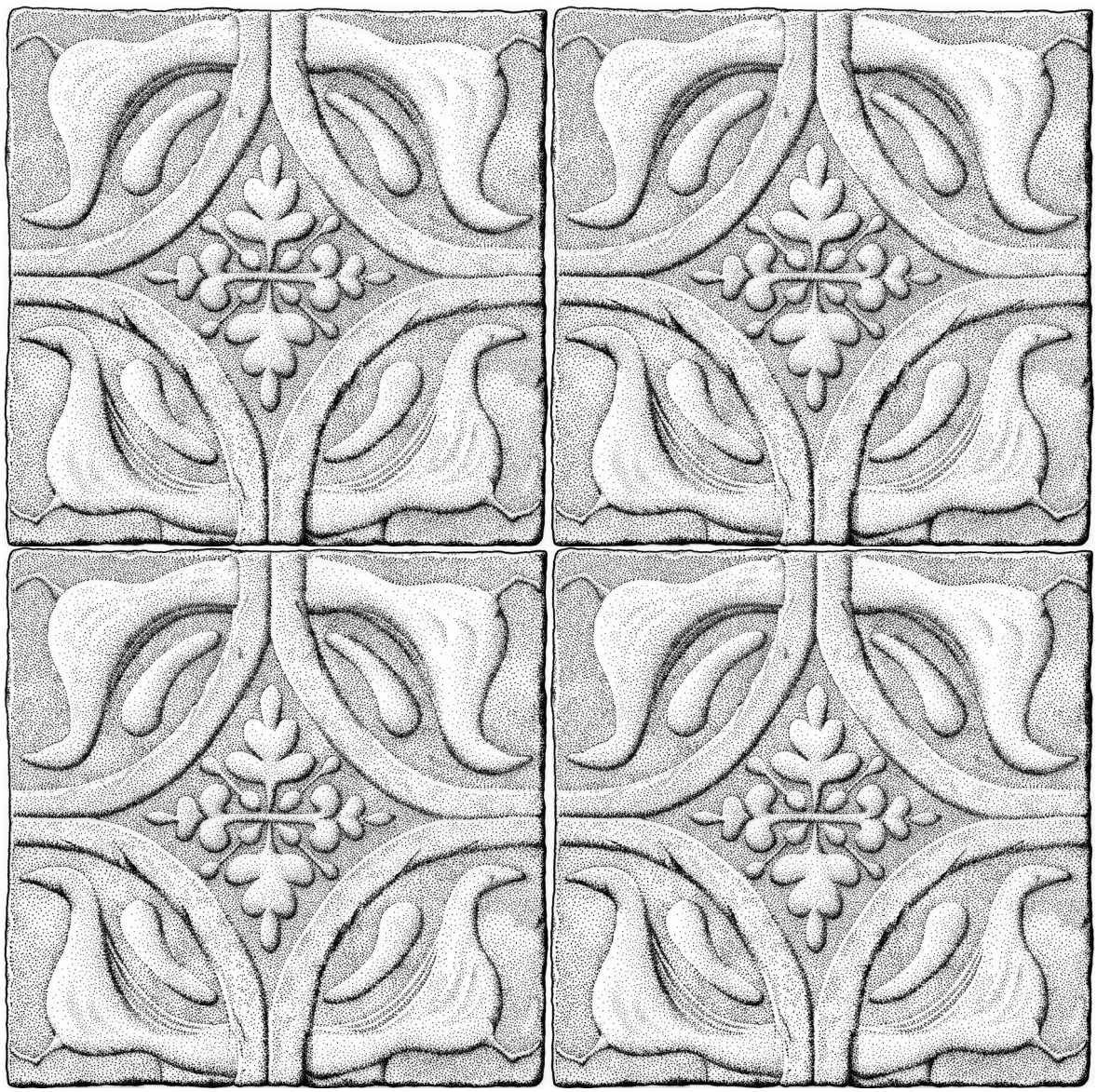
ANGT Type F cont.



ANGT Type F, well fired (from left to right: from Trench 2, Layer 544; from Trench 2, Layer 420 (largest fragment); from Trench 2, Layer 626; fragment far right, from Trench 3, Layer 631; all 1:3)

Illus. 3.2.15 *cont.*

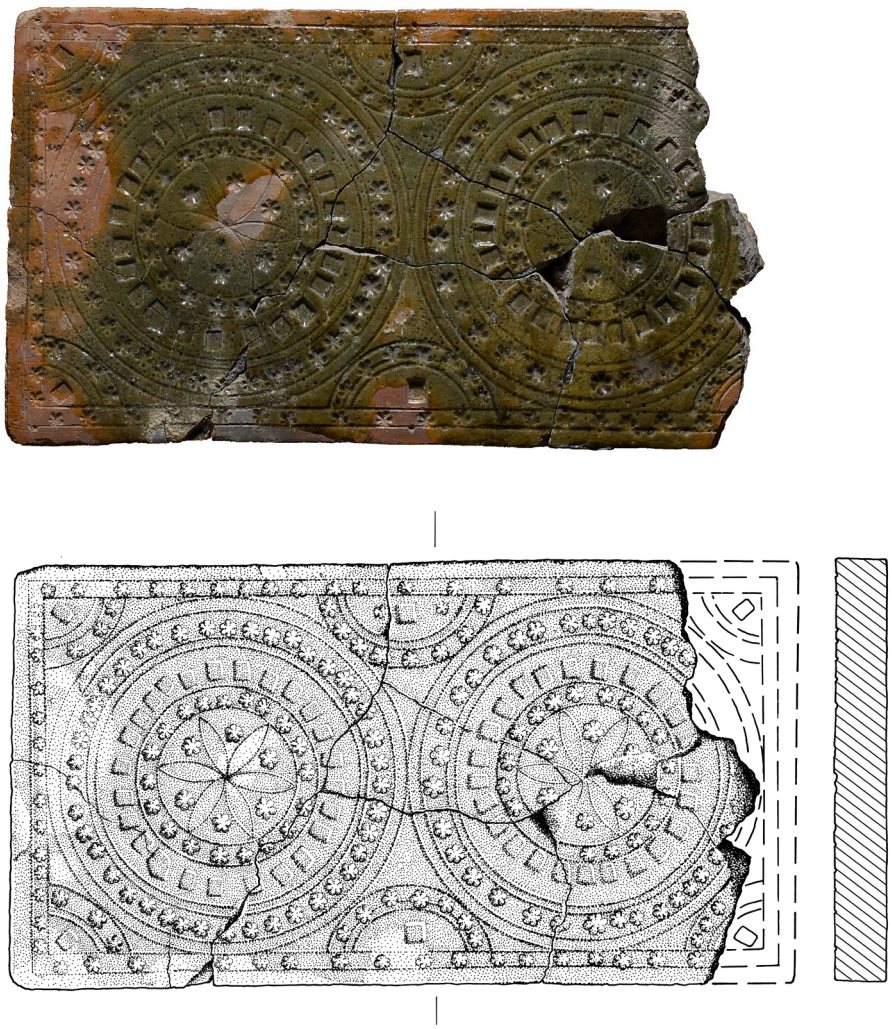
ANGT Type F cont.



ANGT Type F: reconstructed four-tile pattern (1:3)

Illus. 3.2.15 *cont.*

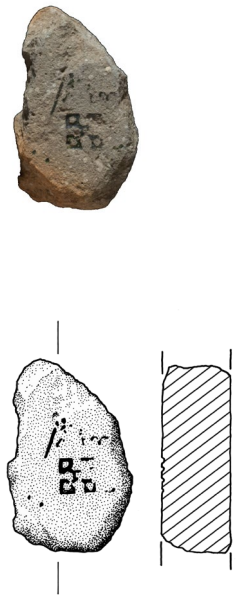
ANGT Type G



ANGT Type G (SAM No. 2009, 139. C. 81, DP. 2.6; 1:3)

Illus. 3.2.16. Anglo-Norman glazed floor tiles (ANGT) Type G. Photographed and drawn by Ian Cartwright and Simon Hayfield.

ANGT Type H



ANGT Type H (Blundells/Heritage Close, St Albans. SAM No. 53.D.(3).72; 1:3)

Illus. 3.2.17. Anglo-Norman glazed floor tiles (ANGT) Type H. Photographed and drawn by Ian Cartwright and Simon Hayfield.

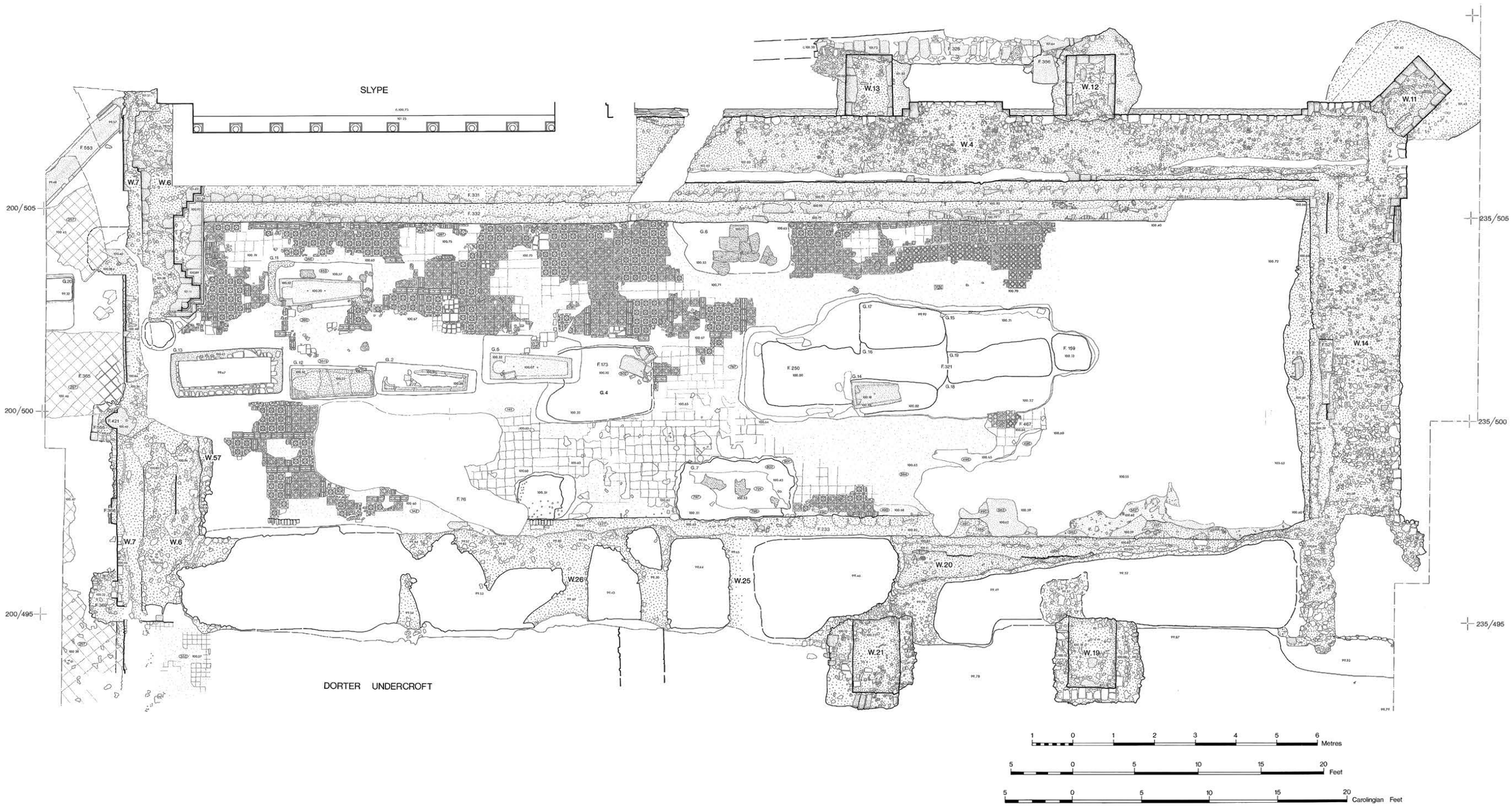
Table 3.2.2. Anglo-Norman RDFT from St Albans Abbey.
Items without Final phase (P.ph.) are from Trenches 5, 6, and 8 (1982–4) and Trenches 10–13 and 17 (1994–5)

Type	F.ph.	P.ph.	RF no.	Tr. and Layer	Grave or Feature no.
A1	31	248	806	2, 681	F. 250
A1	-	-	8941	u/s Victorian reconstruction	-
A1	-	-	8942	u/s Victorian reconstruction	-
A1	-	-	8943	u/s Victorian reconstruction	-
A1	-	-	8945	u/s Victorian reconstruction	-
A2	-	-	8944	u/s Victorian reconstruction	-
A3	-	-	3088	u/s 'North churchyard: picked up on surface'	-
B1[29]	-	-	-	-	-
B1[30]	-	-	-	-	-
B2	-	-	927	u/s 'from outside chapter house'	-
B2[31]	-	-	-	-	-
B2[32]	-	-	-	-	-
C1[33]	9	133	245	2, 957	G. 8
C1	31	246	515	2, 626	F. 247
C1[34]	31	246	607	2, 626	F. 247
C1	31	246	608	2, 626	F. 247
C1	31	246	644	2, 626	F. 247
C1	31	246	645	2, 626	F. 247
C1	31	248	624	2, 677	F. 250
C1[35]	31	248	627	2, 682B	F. 250
C1	31	248	628	2, 682B	F. 250
C1[36]	31	248	629	2, 682B	F. 250
C1	31	248	641	2, 682B	F. 250
C1[37]	31	248	643	2, 682B	F. 250
C1	31	248	817	2, 682B	F. 250
C1	31	249	319	2, 544	-
C1[38]	32	239	630	2, 420	Above G. 7. Possibly spread from F. 250
C1	35	257	516	2, 502	F. 173
C1[39]	35	268	979	2, 343	-
C1[40]	-	-	4009	8, 71	-

[29] From St Albans Abbey ('beneath the floor of the nave'). Found by Rogers in 1937. MOL No. 37.155/3. Ward Perkins 1937, 146, Fig. 6, 4.
[30] From Chequer St., St Albans 1981. From a 14th–15th-cent. post-hole. SAM No. C.81 MEH. 2. Photo no. PX 4894.
[31] From Blundells/Heritage Close, St Albans. SAM No. 53.D.6.39-40 (two joining fragments).
[32] From St Albans Abbey. Recorded by P. Manning in 1907 and was then in County Museum. Illustrated in PH, Watercolour ref. H109, labelled as 'St Albans Abbey, PM.' L. Keene 1971, Catalogue of Tiles in St Albans Museum (unpublished catalogue), No. 9. Not located for this study.
[33] Earliest stratified fragment.
[34] Joins to *RF 643*.
[35] Flanged. Joins to *RF 629*.
[36] Flanged. Joins to *RF 627*.
[37] Joins to *RF 607*.
[38] Flanged.
[39] Pattern shows as a firing shadow.
[40] Flanged?

Type	F.ph.	P.ph.	RF no.	Tr. and Layer	Grave or Feature no.
C2[41]	-	-	4003	8, 108	-
C3[42]	32	250	598	2, 269	-
C4[43]	31	248	626	2, 682B	F. 250
C5[44]	-	-	-	-	-
D1[45]	35	258	1946	2, 604	F. 171 / F. 173
D1[46]	36	716	592	4, 26	-
D1[47]	38	371	1806	2, 410	F. 189
D2[48]	-	-	-	-	-
D2[49]	-	-	-	-	-
D3[50]	-	-	-	-	-
E1[51]	31	246	-	2, 626	F. 247
E1[52]	32	239	-	2, 420	Above G. 7. Possibly spread from F. 250
E1[53]	32	240	632	2, 418	-
E1[54]	37B	351	-	2, 137	F. 124
E2[55]	34	584	-	3, 386	F. 321
E2[56]	41	660	-	3, 319	F. 159
F[57]	31	246	-	2, 626	F. 247
F[58]	31	246	-	2, 626	F. 247
F[59]	31	246	-	2, 626	F. 247
F[60]	31	249	-	2, 544	-
F[61]	31	249	-	2, 544	-
F[62]	31	578	-	3, 631	F. 250
F[63]	32	239	-	2, 420	Above G. 7. Possibly spread from F. 250
G[64]	-	-	-	-	-
H[65]	-	-	-	-	-

[41] Flanged.
[42] Flanged.
[43] Flanged.
[44] Flanged. From St Albans Abbey. BM Reg. No. 1880, 0213.3. Donated by John Thomas Micklethwaite in 1880. BM Cat 11,153, Design No. 263. PH, Watercolour ref. 122.
[45] Roundel.
[46] Roundel.
[47] Roundel.
[48] Roundel. From Chequer St., St Albans 1981. SAM No. 2009.140, C. 81, DP. 2.8.
[49] Roundel. From Blundells/Heritage Close, St Albans. SAM No. 53.C.(/11).63.
[50] ?Decoration from 'spandrel' outside roundel, as in Types D1 and D2. From St Albans Abbey. BM Reg. No. 1880, 0213.4. Donated by John Thomas Micklethwaite in 1880. BM Cat 11,157 (but tile in BM labelled 11,154), Design No. 266. Ward Perkins 1937, 146, Fig. 6, 3. PH, Watercolour ref. 120.
[51] Roundel.
[52] Roundel.
[53] Roundel.
[54] Roundel.
[55] Roundel. Joins to the other E2.
[56] Roundel. Joins to the other E2.
[57] Fabric A. Joins to fragment from II, 544.
[58] Fabric A.
[59] Fabric B.
[60] Fabric A. Joins to fragment from II, 626.
[61] Fabric B.
[62] Fabric B.
[63] Fabric B.
[64] From Chequer St., St Albans 1981. Large tile. SAM No. 2009, 139. C. 81, DP. 2.6.
[65] From Blundells/Heritage Close, St Albans. SAM No. 53.D.(3).72.



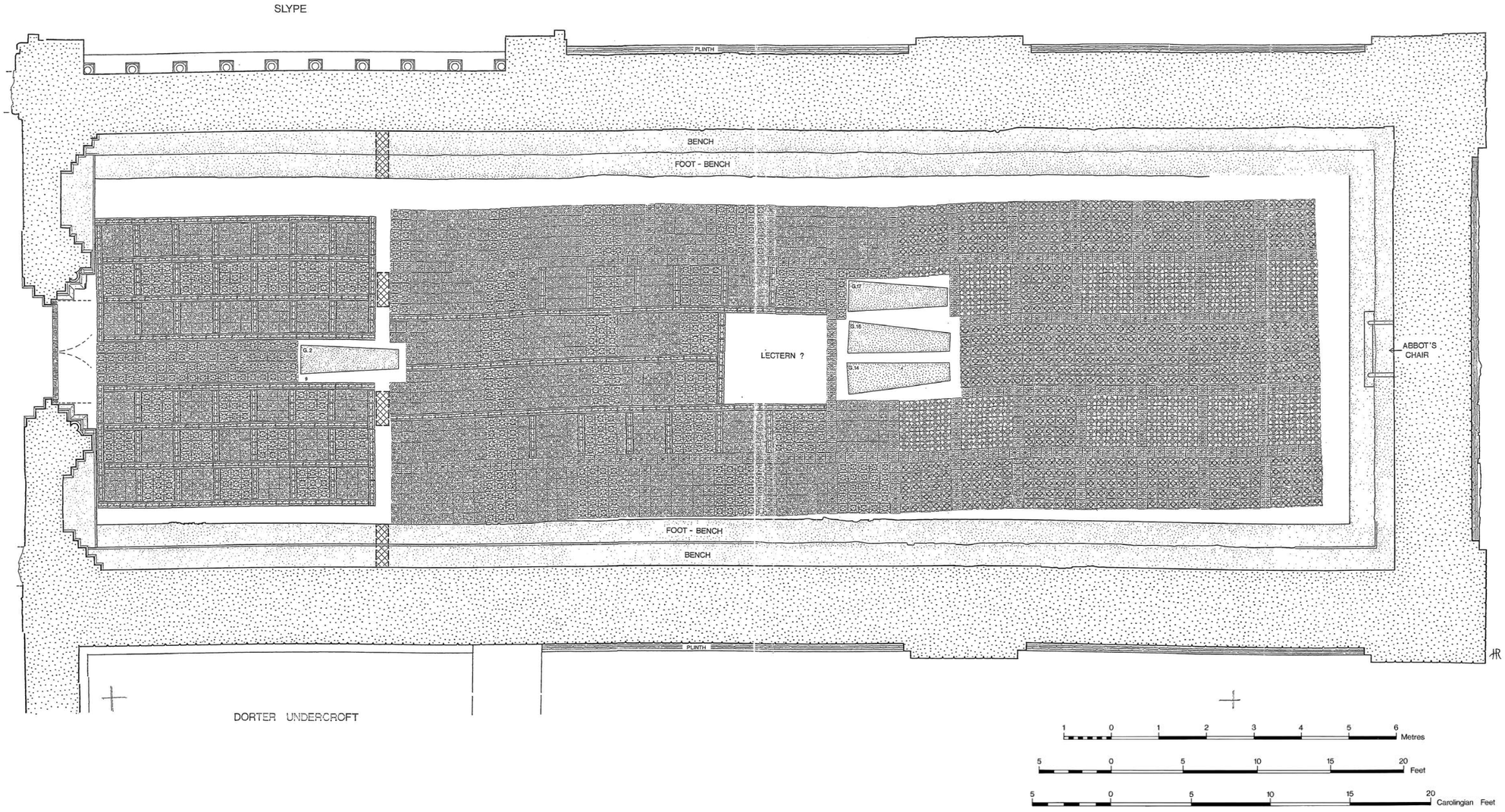
The tiled floor of the third (rectangular) chapter house

The third chapter house, a vast rectangular building, was built by Abbot Robert of Gorham between 1154 (or perhaps 1159) and 1166 (Illus. 2.3.3). The third chapter house was longer than the preceding two apsidal chapter houses, with a total internal length of some 27.5 m (90.5 ft) and a width of 9 m (30 ft), an almost exact proportion of 3:1 (Tables 2.3.4 and 2.3.6). The whole of this vast interior of some 247.5 sqm was floored with nine-inch square relief-decorated glazed floor tiles (RDFT) of which sufficient remained still in position in various areas to allow a tentative reconstruction of the entire floor (Illus 3.2.18, 3.2.19 and 3.2.20).

Illus. 3.2.18. The Romanesque tiled floor (RDFT) of the third chapter house: the evidence of the tiles found in position and the pattern of missing tiles left in the mortar bedding. See Illus. A.II.4 for link to high-resolution image online.



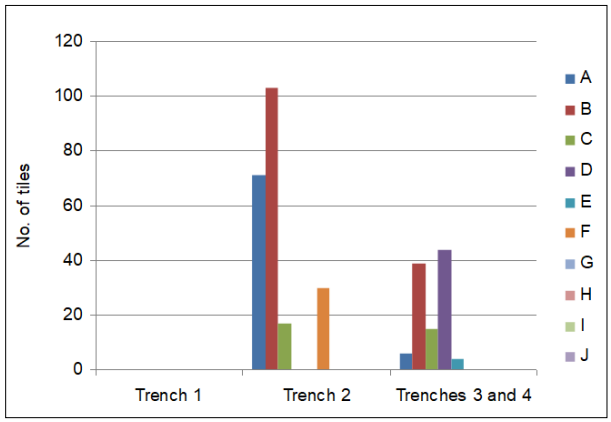
Illus. 3.2.19. The Romanesque tiled floor (RDFT) of the third chapter house: the extent of the tiles found in position.
See Illus. A.II.5 for link to high-resolution image online.



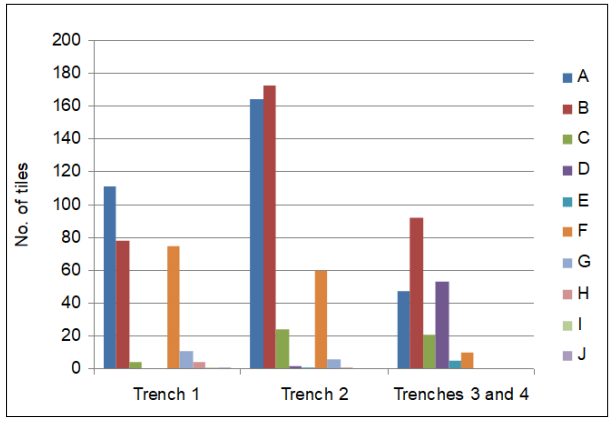
Illus. 3.2.20. The Romanesque tiled floor (RDFT) of the third chapter house: interpretation and reconstruction.
See Illus. A.II.6 for link to high-resolution image online.

The relief-decorated floor tiles (RDFT): number of tiles found (Illus 3.2.21–3.2.26), decoration and sizes (Illus 3.2.27–3.2.36 and Tables 3.2.3 and 3.2.7)[66]

These tiles are decorated in relief with patterns once averaging perhaps 4.5 mm in relief (but in almost all cases heavily worn down) and glazed green-yellow/ brown-yellow to dark green and very dark brown. Ninety-one per cent of the fragments (Table 3.2.6) are from square tiles of Types A–E with sides of between 200 to 250 mm (8 and 10 in.), averaging about 220 mm (8.5 in.). The remaining nine per cent are from oblong rectangular tiles of Types F, G, and H, averaging 155mm wide (6.15 in.) and 250 to 280 mm long (10–11 in.). The average thickness at the centre of these tiles is around 25 mm (1 in.), slightly less at the edges. Tiles of Types D and E are noticeably the thickest averaging 30 mm in the middle (1.2 in.) and a little less at the edge. The sides are normally straight, in a few cases bevelled. The number of tiles of Types A–J found in their primary position was greatest in Trench 2 (see Illus. 3.2.21). For an overview of the number of tiles and fragments of tiles of each type found in Trenches 1–4 see Illus 3.2.21–26.

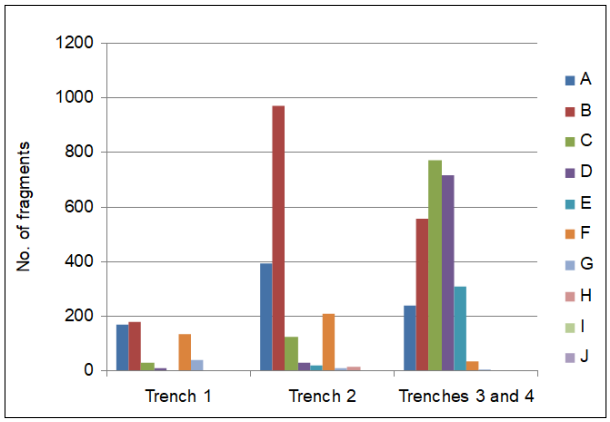


Illus. 3.2.21. Graph of the number of RDFT of each type found in primary position

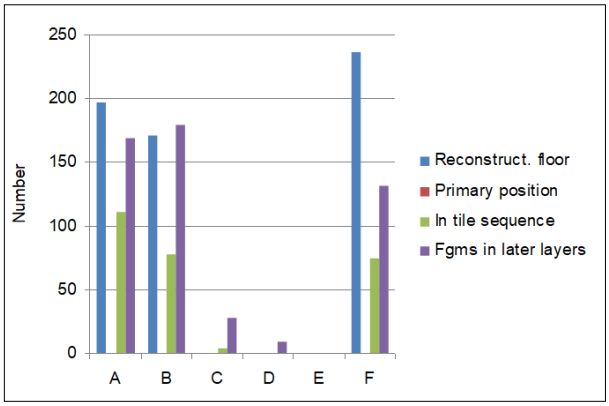


Illus. 3.2.22. Graph of the number of RDFT of each type numbered in the tile sequence

[66] For the chapter house itself, see above, pp.33–55. For tiles of types other than RDFT, see below, pp. 289–308.



Illus. 3.2.23. Graph of the number of fragments of RDFT of each type found in later layers



Illus. 3.2.24. Trench 1: Graph of the number of RDFT of each type in the reconstructed floor compared to the number of RDFT found in situ, and to the number of fragments found in later layers

Dating

Fragments of RDFT occur in dated contexts from the third quarter of the twelfth century onwards (Tables 3.2.4–3.2.6).

Fabrication

The tiles were fashioned in wooden frames, the grain of which is visible on the sides of a few tiles although the sides were normally scraped flat. The frames were set on a sanded surface, grains from which are imbedded in the back of virtually all the tiles. The decoration was stamped on the wet clay with a die, sometimes at a slight angle, and because the die often moved while still on the tile the image can be doubled or trebled, as seen on all types. There are finger-prints on all the tiles, especially along the bottom edges.

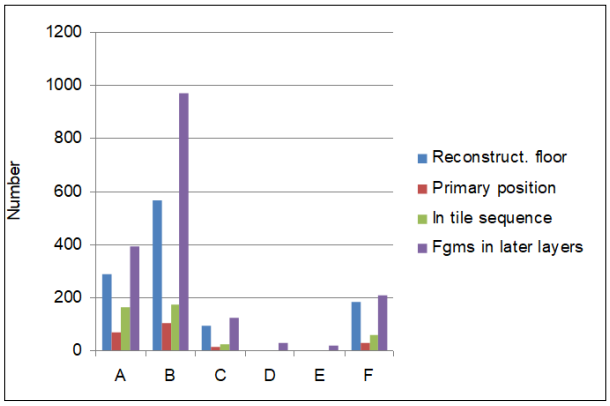
It is possible that the dies or some of them were of metal. Type D had two or possibly three slightly different dies (D1, D2, and possibly D3, Illus. 3.2.30); and Types I and J

Table 3.2.3. RDFT Types A–J: the decorative elements

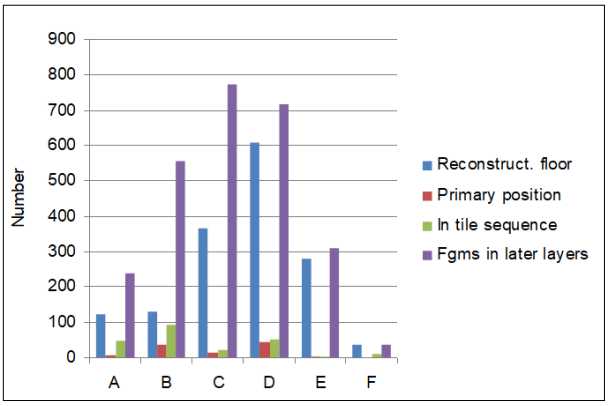
Dec. / Tile type	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v
A*	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y
B**	Y	Y	N	Y	N	Y	N	Y	Y	N	Y	N	Y	N	N	N	N	N	Y	N	N	N
C***	N	N	N	N	Y	Y	N	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N
D+	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N
E+	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N
F*	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	N	N	N	N
G**	N	Y	Y	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N	Y	Y	N	N	Y
H***	N	Y	N	N	N	N	N	N	Y	Y	N	N	Y	N	N	Y	N	N	N	N	N	N
I	N	N	N	?	N	?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y
J**	N	Y	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	Y	Y	Y	N	Y
K	Y	N	N	N	N	N	Y	N	N	N	N	?Y	Y	N	N	N	N	N	N	N	N	Y
L&M	N	N	N	?	N	?	?	N	N	N	N	N	N	N	N	?	Y	?Y	N	N	N	N
Tile type	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v

a: Quarter circle in corners
b: Back-turned tripartite leaves
c: Spray of stamens/flower
d: Central 4-part flower ending in blobs
e: Small central boss
f: Four-clover centre
g: Four-leaf centre
h: Outer edge half of clover/plant
i: Small three-clover on stalk
j: Large three-clover on stem
k: Two leaves at base of plant
l: Curled leaves from side
m: Central spine on plant
n: Large intersecting circle segments
o: Stamped zig-zag decoration
p: Plain frame
q: Intertwined split plant stalks
r: Stalk scroll
s: Strands meeting in fleur-de-lis
t: Stamped bosses on border
u: Concentric circles
v: Twist on circles/segments

*, **, ***, + means that these tiles have the same type of decoration
A, B, C, D, E, K, L and M: the square shape
F, G, H, I, and J: the narrow (oblong) shape



Illus. 3.2.25. Trench 2: Graph of the number of RDFT of each type in the reconstructed floor compared to the number of tiles found in situ, and to the number of fragments found in later layers



Illus. 3.2.26. Trenches 3 and 4: Graph of the number of RDFT of each type in the reconstructed floor compared to the number of tiles found in situ, and to the number of fragments found in later layers

Table 3.2.4. RDFT fragments from early contexts (graves)

Grave	Name	Date of death	Tr. and Layer	F.ph.	F.ph. date	P.ph.	Type	No. of frags.
G. 23	Robert of the Chamber	d.1154/9	1, 420	17–24*	1154/9–*c*.1300	17	A	1
G. 23	Robert of the Chamber	d.1154/9	1, 420	17–24*	1154/9–*c*.1300	17	G	1
G. 23	Robert of the Chamber	d.1154/9	1, 424, F. 537	25–26	*c*.1300–96	47	A	9
G. 23	Robert of the Chamber	d.1154/9	1, 424, F. 537	25–26	*c*.1300–96	47	B	1
G. 23	Robert of the Chamber	d.1154/9	1, 424, F. 537	25–26	*c*.1300–96	47	F	2
G. 23	Robert of the Chamber	d.1154/9	1, 424, F. 537	25–26	*c*.1300–96	47	G	6
G. 11	Adam the Cellarer	d.1167/76	1, 374A, F. 504	20	1166–83	26	A	1
G. 11	Adam the Cellarer	d.1167/76	1, 374A, F. 504	20	1166–83	26	B	5
G. 11	Adam the Cellarer	d.1167/76	1, 374A, F. 504	20	1166–83	26	F	3
G. 7	Adam Wittenham	d. after 1349	2, 827	26	*c*.1350–96	199	A	6
G. 7	Adam Wittenham	d. after 1349	2, 827	26	*c*.1350–96	199	B	3
G. 7	Adam Wittenham	d. after 1349	2, 827	26	*c*.1350–96	199	C	1
G. 6	Adam Rous	d.1379	2, 792, F. 596	26	*c*.1350–96	198	B	3
G. 6	Adam Rous	d.1379	2, 809	26	*c*.1350–96	198	B	1
G. 13	John de le Moot	d.1401	1, 273	27	1396–1402	52	A	2
G. 13	John de le Moot	d.1401	1, 273	27	1396–1402	52	B	15
G. 13	John de le Moot	d.1401	1, 273	27	1396–1402	52	F	10

Table 3.2.5. Numbers of RDFT Types A–F in the three principal parts of the reconstructed primary floor (The 18 tiles of type C tiles which form the border between the western and eastern parts of the main floor have been included in the counts for the western part of the main floor)

Type	Vestibule	W main floor	E main floor	Total
A	233	0,378	-	0,611
B	225	0,645	-	0,870
C	-	0,184	0,277	0,461
D	-	0,00-	0,610	0,610
E	-	0,00-	0,280	0,280
F	312	0,149	-	0,461
Total	770	1,356	1,167	3,293

were perhaps simply slightly different variations of the same pattern (Illus 3.2.35 and 3.2.36). All these tiles have a grey core and fine fabric.[67] They seem to have been stacked on their edges in the kiln, since there is extra clay stuck to the sides of all types. Many of the tiles also have cracks into which the glaze had flowed and these must have cracked either before or during firing. Many tiles have burnt glazes. Some tiles appear to have been over-fired, but their fabric was not affected. Some tiles had been broken deliberately and snipped into shape, presumably to fill smaller spaces created in laying the pavement. One tile of Type A (Illus. 3.2.27) and one of Type F (Illus. 3.2.32) had a smooth white covering over the relief decoration. Mortar adhering to the surface is normally secondary.

[67] See report below, pp. 117–20.

The eight main types of relief-decorated floor tiles (RDFT)

Types A–H are the eight main types (Illus 3.2.27–3.2.34). Types I and J are each represented by only two and one examples respectively (Illus 3.2.35 and 3.2.36; Table 3.2.6):

Floor tiles of Type A (Illus. 3.2.27 and Tables 3.2.6 and 3.2.7)

Square tiles with the sides averaging 215 to 220 mm (8.5 in.) and an average thickness of 24 mm (1 in.). Seventy-seven tiles (normally in many fragments) were found in their primary position, six in Trenches 3–4 and 71 in Trench 2 (cf. Illus. 3.2.21). A total of 322 tiles (cf. Illus. 3.2.22, including the 77) were numbered in the tile sequence: 111 in Trench 1, 164 in Trench 2, and 47 in Trenches 3 and 4. 802 fragments were found in later layers: 169 in Trench 1, 394 in Trench 2, and 239 in Trenches 3 and 4 (cf. Illus. 3.2.23).

The design is composed of quarter-circles in each corner clasped by the stalks of a plant with distinctive tripartite fleshy leaves arching back with the stamen pointing towards the middle of the tile where there is a plant-like star with four main parts pointing to the centre of each side. The design is well balanced and complete in itself, but the full circular effect is created by joining nine tiles when the resulting pattern is geometric with the circles alternating with an almost square area formed by the leaves around the star. The outer radius of the corner circle is 82.5 mm (3.25 in.), the inner radius 76.2 mm (3 in.), and the diagonal of the tile is 305 mm (12 in.). The pattern formed by nine tiles consists of circles with a diameter of 152 mm (6 in.) and an inner square with a diagonal of 152 mm (6 in.). If the axes of the plants are followed to the centre of the middle star, squares with sides 152 mm (6 in.) long are created.

Floor tiles of Type B (Illus. 3.2.28)

Square tiles with sides averaging 215 to 220 mm (8.5 in.). Eleven had the design stamped on the clay in frames which were larger than the die and so have a raised plain border. There are also four oblong tiles with the Type B pattern, 110–120 mm (4.5 in.) wide and of the usual length of 215 to 220 mm (8.5 in.). The general thickness is about 24 mm (1 in.).

142 tiles (normally in many fragments) were found in their primary position, 39 in Trenches 3 and 4, and 103 in Trench 2 (Table 3.2.6). A total of 343 tiles, including the 142, were numbered in the tile sequence: 78 in Trench 1, 173 in Trench 2, and 92 in Trenches 3 and 4. A total of 1,707 fragments were found in later layers: 179 in Trench 1, 971 in Trench 2, and 557 in Trenches 3 and 4.

The design is composed of the outer half of four slightly flattened circles each with a diameter of 114 mm (4.5 in.). The middle of the tile, where the four circles would intersect, is marked by a four-leafed clover, and the circle segments meet in a *fleur-de-lis*, formed by the turned back ends of the segments and an oblong leaf rising from the clover. Fleshy leaves and stamens, smaller versions of the Type A corner plants (with the same tripartite leaves), spring from the centre towards the corners (rather than from the corner to the centre as on tiles of Type A). Each corner is decorated with a small quarter-circle surrounding a dot. The half-circles on tiles of Type B circumscribe the outline of the Type A plants, so that the decoration of the two types is intimately related: Type A tiles have a pattern which moves from the corners towards the middle, Type B tiles a pattern which moves from the middle towards the corners.

When, however, four tiles of Type A are put together they create the outline of a single tile of Type B with half-circles shaped by the outline of the plant. Similarly, four tiles of Type B placed together have the four plants pointing towards the middle as on tiles of Type A. In the middle of such a junction of four Type B tiles, there is a circle with four dots. When tiles of Type A and B are compared, it can be seen that all the main geometrical patterns are identical or similar in both types of decoration. The design on Type B tiles is more individual and finished than that on Type A tiles, only the smaller elements on each tile requiring continuation to complete the design.

Floor tiles of Type C (Illus. 3.2.29)

Thirty-two tiles, mostly in many fragments, were found in their primary position: 17 in Trench 2 and 15 in Trenches 3 and 4 (Table 3.2.6). Forty-nine tiles, including the 32, were numbered in the tile sequence: four in Trench 1, 24 in Trench 2, and 21 in Trenches 3 and 4. A total of 926 fragments were found in later layers (Table 3.2.6; cf. Illus. 3.2.23): 28 in Trench 1, 124 in Trench 2, and 774 in Trenches 3 and 4.

Tiles of Type C are square with sides averaging between 205 to 210 mm (8 and 8.25 in.), and an average thickness of about 25 mm (1 in.). The design is composed of four clover-like plants, springing towards the corners from a four-clover design in the centre. The spine of the leaf can be seen on each plant and the leaves could be taken to represent oak leaves. The small curled leaves, as seen from the side, are a distinctive element: two spring from the central design and frame two of the plants, while the other two have small leaves at the base which look like the leaves at the base of the Type B plants but are generally more worn than the best examples of this detail on tiles of Type C.

In general terms, plants of the Type C design are as if the plants on Type B had each been enlarged to fill a quarter of the tile. In effect, the small central four-clover

on Type B is enlarged and elaborated on Type C. The diagonals on tiles of Type C are very strong especially because the spine of the leaf runs along the diagonal into the corners of the tile. The main pattern falls into the same squares and also (although less easily seen) the same curves as tiles of Types A and B. When four tiles of Type C are put together, the diagonals create the same main geometric lines, as on tiles of Types A and B, but the effect is not immediately harmonious. When found in a primary position, tiles of Type C were used only for borders. When seen in a strip, tiles of Type C produce a wavy pattern which weaves in and out of the diagonals.

Floor tiles of Types D (Illus. 3.2.30)

Forty-four tiles of Type D were found in their primary position in Trenches 3 and 4, usually in many fragments, including all four tiles of Type D1. Fifty-five tiles, including all 44 found in their primary position, were numbered in the tile sequence, two in Trench 2, and 53 in Trenches 3 and 4. A total of 757 fragments were found in later layers: nine in Trench 1, 31 in Trench 2, and 717 in Trenches 3 and 4 (Table 3.2.6; cf. Illus 3.2.21–23).

Type D tiles are square with the sides averaging 215–220 mm (8.5 in.). Their general thickness is about 28 mm (1 in.). The design is composed of four intersecting circles, each with a radius of 216 mm (8.5 in.) (the same as the length of the side of the tile) and its centre at the opposite corner of the tile. The outer segments are followed on their inner side by a segment with the same centre and decoration which never reaches the edge of the tile but passes instead beneath the opposing outer segment. The resulting eight segments intertwine. The outer edge of the circle at the centre of each tile just touches the inner edge of the innermost segments of the inner circle. The middle of this circle is filled by an eight-petalled flower.

This description covers tiles of Types D1 and D2. On tiles of Type D2 the surfaces of the segments of the circle are covered with zig-zag ribs forming a diamond pattern. The inner segments have, in addition, a central rib and two of the outer segments have small raised crosses or stars within each lozenge formed by the zig-zag. Every possible part of the tiles of Type D is thus covered with decoration: no space where there could have been a design is left empty, whether in the middle or towards the corners. Tiles of Type D3 have no impressed designs on the segments of the circle or on the central circle, but in other respects their design is identical.

The additional decoration on tiles of Type D3 was perhaps omitted simply by mistake: their geometry is the same as that of the other tiles with strong diagonals. The half-flowers at the edges of tiles of Type D2 are also seen on tiles of Type B, although in a simpler version. When nine tiles of Type D3 are placed together, a double circle is completed. The main geometric background pattern is the same as on the other tiles.

Floor tiles of Type E (Illus. 3.2.31)

Only one tile of Type E was found in its primary position (Table 3.2.6). Three others were found re-laid in F. 467 in what was almost certainly their primary position, the tiles having been replaced after the insertion of G. 18 in 1183. Six tiles (including these four) were numbered in the tile sequence: one in Trench 2 and five in Trenches 3 and 4 (Table 3.2.6). A total of 329 fragments were found in later layers: 20 in Trench 2 and 309 in Trenches 3 and 4.

Type E tiles are square, the sides averaging 215–220 mm (8.5 in.). The general thickness is about 28 mm (1 in.). The design of Type E is like that of Type D (Illus. 3.2.30), but the intersecting circles are single, not double, and are decorated with lozenges or zig-zag with a dot in the middle of each. The centre is filled with a complete circle, worn but possibly once decorated with lozenges, the middle of which is filled with a precise eight-petalled flower. Filling the triangular spaces between the circle segments, there are delicate plants with backward-curving leaves springing from a central circle which surrounds a flower with an almost feathery outline. This central design is repeated in a slightly smaller version in the large triangular spaces framed by the segments and again as half designs at the four edges of the tile.

This is a very splendid tile. Its geometry is like that of the tiles of Type D but when nine tiles of Type E are placed together, the many circular elements in the decoration draw attention to the underlying grid, the crossing points of which are highlighted by a circle. The grid square has sides 54 mm (2.125 in. or 2 1/8 inch) long, equivalent to one-quarter the side of the tile. This grid can be superimposed equally well on tiles of Types A, B, and D. The little plants which grow from the circles unite the design with that of tiles of Type D, and a larger and more clover-shaped version of this design can be seen even more clearly but in a different way in Type B. Most importantly however, these circles and their growth could form a link to the very different tiles of Type I.

Floor tiles of Type F (Illus. 3.2.32)

Type F is an oblong border tile of which 30 were found in their original position, all in Trench 2 (Table 3.2.6). A total of 145 tiles (including the 30) were numbered in the tile sequence: 75 in Trench 1, 60 in Trench 2, and 10 in Trenches 3 and 4 (Table 3.2.6). A total of 376 fragments were found in later layers (Table 3.2.6; cf. Illus 3.2.21–23): 132 in Trench 1, 208 in Trench 2, and 36 in Trenches 3 and 4.

These tiles are oblong rectangles with the sides averaging between 265–275 mm (10.5–11 in.) in length and 163 mm

(6.5 in.) in width. The general thickness is about 27 mm (1 in.). The design is perhaps related to that of Type A: split stalks interweave as on tiles of Type A, and tripartite curved leaves as on Type A form the end of each stalk. These leaves are identical and split off from the main branch at the start of each curve. There are plain raised borders above and below the pattern along the length of the tile. The pattern on each tile is symmetrical along both its vertical and horizontal axis with the leaves in mirror image around the horizontal axis and repeated around the vertical. The diagonal of tiles of Type F is 305 mm (12 in.), as on tiles of Type A, and the horizontal axis divides the tile into two areas each 82.5 mm (3.25 in.), wide, a dimension also used on tiles of Type A.

When tiles of Type F are put together in a border, as they were on the ground, the effect is a running figure-of-eight pattern composed of two main stalks with one of the two types of tentacle uniting tile to tile.

Floor tiles of Types G and H (Illus 3.2.33 and 3.2.34)

Types G and H should be considered together as both are rectangular oblong 'border' tiles. Both types have the same basic decoration and they are the only tiles to have an 'up-and-down' pattern, suggesting that they may have been intended to be placed vertically, as on the face of a step.

None of the tiles of Types G and H was found in its primary position. Seventeen tiles of Type G and five tiles of Type H were numbered in the tile sequence: 11 Type G and four Type H in Trench 1, six Type G and one Type H in Trench 2 (no. 378, a fragment of a waster probably found in the primary mortar bedding of the tiled floor), and none in Trenches 3 and 4. Fifty-six fragments of tiles of Type G and 14 fragments of Type H were found in later layers: 41 Type G but no Type H in Trench 1, 12 Type G and 14 Type H in Trench 2, and three Type G and no Type H in Trenches 3 and 4 (Table 3.2.6; cf. Illus 3.2.21–3.2.23).

Apart from Tile 378 (a fragment of a waster), these tiles were all found in secondary or even later positions, all very broken and worn, and all in the area of the vestibule These tiles are oblong rectangles with sides averaging between 267 and 279 mm (10.5 and 11 in.) in length and 152 and 159 mm (6 and 6.25 in.) in width. The general thickness is about 25 mm (1 in.).

The design of Type G is related to Type H. A fan-like flower with an elaborate central element springs from a junction of the stalks. The split stalks then interweave as on Type H, and tripartite curved leaves as on H form the end of each stalk. Elements from tiles of Type B can be seen in the strands meeting in a *fleur-de-lis* and in the small three-clover element on a long stalk. The band above the bottom border of the tile is unique to tiles of Type G. It has three small facetted projections in the middle (perhaps with two smaller projections to either side) which make the line look like a debased or stylized element of a kufic script. There is a plain border above and below the pattern along the length of the tile.

Tiles of Type H have the same basic pattern as those of Type G, but the three projections on the bottom strand have turned into simple projecting triangles. The plain border of Type G is replaced on Type H by a line of stamped bosses.

The diagonal of the oblong tiles of Type H is about 305 mm (12 in.) and the horizontal axis divides the tile into two areas each 76.2 to 79.4 mm (3 to 3.125 in.) wide, a dimension also used on tiles of Type A. Tiles of Types G and H are oblong border tiles which are symmetrical across the vertical axis. This design has therefore an up and a down, a bottom and a top. If the tiles were put together in a line, as they would have been, a row of flowers/plants in a figure-of-eight band would be apparent, above a band which might in origin have been a decorative script, possibly kufic-derived.

These tiles of Types G and H were probably meant to be mounted on a vertical surface, although as found they were actually laid flat on the ground. It is impossible to be sure where they may have been placed originally, but the bottom of the west face of the screen seems a possibility. This would work well with the fact that all five fragments of this type numbered in the tile sequence (apart from the fragment of a waster) were found in the vestibule floor re-laid as early as Final phase 22, when the screen was taken down. Of the 56 fragments of tiles of Type G found in later layers, 45 came from the vestibule area and only 13 were found further to the east.

Floor tiles of Type I and J (Illus 3.2.35 and 3.2.36)

Only two fragments of an oblong rectangular floor tile of Type I were found: one from Trench 1 and one from Trench 2 (Table 3.2.6; cf. Illus 3.2.22 and 3.2.23). These tiles were about 210 mm (8 in.) long and between 23 to 28 mm (about 1 in.) thick. Only the outer edges have survived with a pattern 65 mm wide composed of raised circles which would have had their centre in the middle of the tile. The outer circle is 15 mm wide with a leftwards twist, the middle circle is 27 mm wide composed of four concentric mouldings, and the inner circle is about 12 mm wide with a tight leftwards twist. There may have been a frame around a central image. In the corner there is a stylized pattern, with a central drop growing from the outer circle with two flanking waves. When the tiles are placed together, the corner patterns combine into a flower-like pattern, but the circles and no doubt the missing central 'medallion' would have been the most striking element.

No tiles of Type I were found in their primary position, and only one was numbered in the tile sequence in Trench 1. One fragment found in a later layer in Trench 2 could also have come from the area of the vestibule. Neither of these tiles was complete and all that can be said is that they were oblong rectangles, with a length of about 250 mm (10 in.) and a width of around 110–120 mm (4.5 in.). The general thickness is about 27 mm (1 in.). The design of Type I is like that of Type C with four- or three-leaved clovers on stalks springing from the plain frame. A little backward-turning leaf, like those on tiles of Type A, springs from the base of the stalk. The effect when tiles of Type I are placed in a row is of a horizontal design 19 mm (0.75 in.) wide with wide flat borders, a line of curved leaves, and a central line of large clovers/leaves. As with tiles of Types G, H, and N, it is possible that tiles of Types I and J were meant to be mounted vertically.

Type J, of which only one fragmentary example of an oblong rectangular tile has been identified, is like Type I but instead of a leaf of oaken type, seemingly smaller three-leafed clovers between the large clovers emerge from the same stem. The small backward-turned leaf emerges by itself from the border. The thickness is the same as that of the other tiles; no other dimensions can be measured (Table 3.2.6; cf. Illus. 3.2.22).

Floor tiles of Types K and L and M

The remaining types of tile are represented by very few fragments. None are included in Table 3.2.6 or Table 3.2.7 and none are illustrated for publication in this volume.

Type K

Seven fragments of tiles of Type K were found, all from demolition rubble over the area of the possible lectern (F. 250). These tiles are square with sides of between 220 and 230 mm (about 9 in.) and are around 26 to 30 mm (1 in.) thick. The pattern, which is very worn especially towards the corners, is of quarter-circles centred on each corner, and each circle segment has a twist. In each corner there seems to have been a fluffy bird with a wing or leaf above. The centre has four oak leaves at right-angles, with diagonal stalks between them ending in a heart-shaped. The main oak leaves are like those on tiles of Type C tile and the stalk leaves are seen on Types A, B, and G/J.

Although the Type K tile looks different to Type A, the same geometrical layout grid can be superimposed on both. When the tiles are combined, the circles stand out, but because the bird-like figure cannot be properly understood, it is difficult to be sure what the effect was intended to be. The very confined distribution may suggest that Type K was originally placed in association with the possible lectern.

L and M

There is one fragment of each type. Both were derived from the 'lectern' area, those of Type M directly and those of Type L in a post-demolition layer immediately overlying. The only surviving dimension is the thickness of about 25 to 28 mm (1 in.). The pattern is partly circular, partly plant-like with tendrils. The two fragments are possibly from different types of tile.

Table 3.2.6. RDFT analysis

* = Not possible to estimate; R = Number of tiles needed in suggested reconstruction of primary floor; P = Number of tiles found in primary position; S = Number of tiles numbered in the tile sequence (found in position as the floor was in 1539); F = Number of tile fragments found in later layers above the floor.

Tile	Evidence R				Evidence P				Evidence S				Evidence F			
type	Tr. 1	Tr. 2	Trs 3–4	Total	Tr. 1	Tr. 2	Trs 3–4	Total	Tr. 1	Tr. 2	Trs 3–4	Total	Tr. 1	Tr. 2	Trs 3–4	Total
A	197	290	124	611	-	71	6	77	111	164	47	322	169	394	239	802
B	171	567	132	870	-	103	39	142	78	173	92	343	179	971	557	1,707
C	-	95	366	461	-	17	15	32	4	24	21	49	28	124	774	926
D	-	-	610	610	-	-	44	44	-	2	53	55	9	31	717	757
E	-	-	280	280	-	-	4	4	-	1	5	6	-	20	309	329
F	236	186	39	461	-	30	-	30	75	60	10	145	132	208	36	376
G	*	*	*	*	-	-	-	-	11	6	-	17	41	12	3	56
H	*	*	*	*	-	-	-	-	4	1	-	5	-	14	-	14
I	*	*	*	*	-	-	-	-	1	-	-	1	-	1	-	2
J	*	*	*	*	-	-	-	-	1	-	-	1	-	-	-	1
Total	604	1,138	1,551	3,293	-	221	108	329	285	431	228	944	558	1,775	2,635	4,970

Table 3.2.7. RDFT: sizes of final types.
All measurements taken at top edges of tile. Thickness from highest point of relief to back.

Type	Tile No.	Length and width (mm)	Thickness (mm)
A	423	217–218 x 208–210	25
B	377	217–219 x 215–216	25
C	616 [reconstructed from frags]	207–210 x 215–216	23–25
D1	164	212–213 x 217–218	25–26
D2	123	219 x 216–218	25
D3	223	210–214 x 213–216	30
E	550 [half tile]	208 x 211	27–30
"	227	221 x 212	29–32
F	803	280 x 164–166	25
G [no complete length]	943	155 (width)	28
"	850	154 (width)	28–31
H [no complete length]	804	155 (width)	28–30
"	879	157 (width)	28–30
"	182	-	-
I	No pieces available for measurement	-	-
J	461	112–113 (width)	27–29

The survival of the floor of relief-decorated tiles (RDFT)[68]

The total internal area of the chapter house was 251.16 m^2, divided into two parts by a screen of uncertain height and character which separated the western vestibule from the larger part of the chapter house proper (Illus. 3.2.19). The tiled floor lay immediately below the rubble of the sixteenth-century demolition and survived to a varying extent in both parts of the chapter house.

Over the eastern 45.5 m^2 of the chapter house (about a fifth of its total area), the RDFT and their bedding were completely missing (Illus. 3.2.18). Over the rest of the interior, the tiles, or their mortar bedding with imprints of the tiles, survived as left in 1539, interrupted by grave pits, robber-trenches, a pit for melting lead (F.250, in the area where the lectern may have stood), and by the tracks of carts (Illus. 2.3.5), which were presumably those carrying the melted-down lead from the pit and out through the west door of the chapter house. The floor had been in use for some 370 years.

Excavation and recording on site

The floor and its mortar bedding were cleaned and recorded as found. All the individual tiles still in position, whether RDFT or later printed types, were given a single number (even if in fragments). All areas with tiles *in situ* were photographed from the north in a series of overlapping views with the number of each tile placed upon it. The whole floor was then planned at 1:20, showing the pattern on each tile and its number. The mortar impressions were planned, as was the extent of the mortar without surviving impressions. Before any of the tiles were lifted, each area was examined to check for signs of replacements, whether of a single tile, a group of tiles, or an even larger area. All irregularities were given feature numbers. Excavation then proceeded by removing insertions into the floor, in each case accompanied by a detailed description of the mortar below the missing tiles and a sample of that mortar. Only those tiles in their original position were then left in position (Illus 3.2.18 and 3.2.19).

There were extensive areas where the tiles had been re-set, as well as other repairs and replacements. The whole floor in the vestibule had been completely re-laid. Surviving tiles or mortar showed that along the length of the chapter house, a strip about three tiles wide along both the foot benches had also been re-laid, although in the eastern five or so metres of the chapter house neither tiles nor mortar bed survived to show whether this strip had continued. The tile pattern changes radically not only between the vestibule and the area to its east, but also 3.75 m from the west into Trenches 3 and 4 (Illus. 2.2.2 cf. Illus 2.3.3

[68] For the dating of Types A to J, see above, p. 114.

and 3.2.19), halfway along the length of the eastern group of coffins.

The floor is presented here as follows:

Illus. 2.3.3 shows at 1:100, the areas where the floor tiles were still in their original position (dark unbroken lines) or where their impressions survived (lighter lines).

Illus. 2.3.4 shows the areas of later tiles and tile impressions.

Illus. 3.2.18 shows the floor and its mortar bedding as found, including tiles still in their original position and the areas of later tiles (in effect a combination of Illus 2.3.3 and 2.3.4).

Illus. 3.2.19 shows the floor tiles found still in their original position (dark) in the context of the floor as reconstructed (light).

To achieve a recreation of the original floor (Illus. 3.2.20), the evidence of the RDFT found in their original position and of their mortar impressions (where the tiles themselves did not survive) was used, taking into account the patterns suggested by their re-laid positions and the general symmetry of the layout.

To the east of the vestibule in the main part of the chapter house, the main outline of the RDFT tile 'carpet' (where the tiles themselves or their imprints survived *in situ*) was laid at a slight diagonal in relation to the walls of the chapter house and the benches to north and south (Illus. 3.2.20). The narrow areas between the face of the benches and the 'carpet' would originally have been laid with tiles, even where this was only a narrowing irregular space,[69] but we have taken the main pattern only to its logical conclusion. The next rows of tiles to the north, south (where there is room), and east ought to have been laid with tiles but there is no way of knowing whether this would have been a border laid in square tiles, in the oblong rectangular tiles, or even in fragmentary tiles.

The area of the RDFT floor

For the discussion which follows, it is useful to outline how the trenches (Illus. 2.2.2) correspond to the excavated and reconstructed sections of the floor (Illus 3.2.18–3.2.20).

The total area of the RDFT floor of the chapter house was 251.16 m^2:

Trench 1	With 45.5 m^2 of the total area of the chapter house, this trench covered more than three-quarters of the floor of the vestibule.
Trench 2	With 72.8 m^2 of the total area of the chapter house, this trench covered 9 m^2 of the floor of the vestibule and the floor of the chapter house itself up to the west edge of the lectern.
Trenches 3 and 4	With 132.86 m^2 of the total area of the chapter house, these trenches covered the whole of the eastern part of the chapter house, including the areas north and south of the lectern. Tiles and mortar bedding survived over 87.36 m^2 of the western part of this area, but neither tiles nor mortar bedding survived over 45.5 m^2 in the easternmost part of the chapter house.

The numbers of tiles of each type found in each trench (Table 3.2.6; Illus 3.2.21–3.2.23) support the proposed reconstruction of the various parts of the primary floor presented in Illus 3.2.19 and 3.2.20.

The vestibule (Trench 1 and part of Trench 2, Illus 2.2.2 and 3.2.18–3.2.20)

In the area of the vestibule, none of the original floor of RDFT had survived. The reconstruction (Illus. 3.2.20) follows the way the tiles (and their imprints in the mortar) were found (Illus 2.3.4, 3.2.18, 3.2.19). Since nothing of the original mortar bed with impressions of the original tiling had survived in the vestibule, a regular layout was the only possible reconstruction and no attempt has been made to recreate any central panel or to suggest any irregularities. This regular reconstruction is dull when compared with the 'real recreation' in the main area of the chapter house east of the vestibule (Illus. 3.2.20). In Trench 1, which covered most of the vestibule, more tiles are used in the suggested reconstructed floor than were found in later layers, while in the other trenches, as would be expected, more fragments of the relevant type were found than the number of tiles used in the reconstruction (cf. Table 3.2.6; Illus 3.2.24–3.2.26). The large number of tiles found *in situ* in Trench 1 in relation to the fragments found in later layers may partly explain this unusual relationship, but another explanation may be the cutting into the floor of four large graves which were backfilled with only a fraction of the soil taken out and were covered by slabs and not by re-laid tiles (Illus 3.2.22 and 3.2.23). Otherwise the diagram works well with the suggested use of tiles of

[69] Several tiles had been cut or snipped to fill such spaces, see below p. 126–7.

Types A, B, and F. Tiles of Types C, D, and E were not used, but too many tiles of Type F may have been used in the reconstruction of the floor.

The main area: Trenches 2–4 (Illus 2.2.2 and 3.2.18–3.2.20)

The distance from the east side of the screen to the inner face of the east wall of the chapter house is 21.3 m (70 ft) or a little more, depending on the width of the screen. The west face of a north–south line of border tiles of RDFT Type C lay at approximately the halfway point, running through the probable site of the lectern (Illus. 3.2.20) and separating the main area of the chapter house into two parts:

1. To the west of the lectern, as far as the screen the tile carpet was divided into six east–west strips and divided north–south into six strips separated by lines of border tiles. The squares so framed were filled with tiles of Types A and B.

2. To the east of the lectern, the tile carpet was divided into eight east–west strips. The two central strips appear not to have been subdivided north–south, but the outer strips to north and south were separated by four north–south lines of border tiles into areas filled by tiles of Type D and occasionally Type E.

The tile carpet was divided into areas by border tiles, either of the rectangular types of RDFT (F, G/J, and 'F–J') or of the square tiles of RDFT Type C. The dividing tile strips are as follows:

1. The east–west rows of border tiles, numbered from north to south: Row 1 to 4 in the area east of the lectern and Rows 1 to 5 in the area west of the lectern, up to the screen.

2. The north–south lines, numbered from east to west: Lines 1 to 7 in the area east of the lectern and Lines 1 to 6 in the area west of the lectern, up to the screen.

As noted above, the long narrow borders to north and south of the reconstructed pattern had been re-laid, and no reconstruction has been attempted, but sufficient RDFT had survived in their primary position in the outer border to the north to show that this border in both the areas west (up to the screen) and east of the lectern was composed throughout its length of Type C tiles. In the equivalent row to the south no tiles were found in position, but the mortar imprints showed that square and not oblong tiles had been used. These borders unite the two parts of the main area, but the tile patterns and tile lay-outs are otherwise different in the two halves.

The eastern half of the main area of the chapter house (from the eastern edge of the lectern to the east wall of the chapter house): Trenches 3 and 4 (Illus 2.2.2, 3.2.18–3.2.20)

1. The areas framing the central area had no tiles *in situ*, but because a few square mortar imprints had survived, they have been reconstructed as having had border tiles of RDFT Type C.

2. The six north–south lines of border tiles have all been reconstructed as having had Type C tiles. A few tiles were found *in situ* in the last three of these lines, all but one in the northern half. Square mortar imprints survived more widely but only in the same lines: the first three lines have therefore been reconstructed as having also had tiles of Type C.

3. The area to the east of the later coffins (G. 18 and G. 19) had no surviving tiles or mortar bedding. No north–south divisions have been suggested for the central area, but the reconstruction of this central area shows an area six tiles wide. This reconstruction suggested itself: we know that the squares to the north and south of the central area were five tiles wide (and long). If a line of border tiles framed the central area there is exactly room for a central strip six tiles wide. This cannot be divided with border tiles into equal sized east–west strips because there is no room for a central row of border tiles. There could have been north–south divisions of the central area as there was to north and south, but there seems no compelling reason to suggest such a sub-division.

4. All the tiles found in a primary position or *in situ* in a position re-established soon after the laying of the floor (such as the tiles of F. 467) are of Types D and E, the most substantial and elaborate tile with circle-segment decoration. All the border tiles found in the frames dividing the areas are of Type C.

5. Each five-tile square measures 1.1 by 1.1 m (3.5 by 3.5 ft). The central strip of six tiles is 1.3 m (4.33 ft) wide, which is the same as each strip to north and south with one line of border tiles included. The tile carpet in the eastern area is divided into equal parts covering 6.6 m of the 7.3 m (21.66 ft of 24 ft) distance between the north and south foot benches, leaving irregular areas 0.7 m (2.33 ft) to north and south.

When the pattern of tiles of the various types needed in the restored floor is compared to the tiles and tile fragments actually found in the areas of Trenches 3 and 4 (as in Table 3.2.6 and Illus. 3.2.26),[70] it can be seen that the reconstruction is likely to be correct:

[70] This area covers the eastern 2.5 m of the western area which accounts for the presence of tiles of RDFT Types A, B, and F.

1. No tiles of Type F were used for the borders in the eastern area
2. Types D and E were used overwhelmingly although few were found *in situ*.
3. Too few tiles of Type B may have been used in the reconstruction, but since the proportion of tiles of Type A seems about right, there is no ready answer.

The western half of the main area of the chapter house (up to the screen): Trench 2 and part of Trenches 3 and 4 (Illus 2.2.2, 3.2.20, and 3.2.24 and 3.2.25)

1. The central area, 2.2 m (7.2 ft) wide north–south, is determined by the position of the possible lectern. This area is framed to north, south, and west by RDFT border tiles of the rectangular Type F. A row of Type F tiles (Row 3) was laid along the central axis from west of the lectern to the foot of G. 2. Several tiles were found here in their original position as were the mortar imprints. To north and south, Rows 2 and 4 are also of Type F. The western 4.5 m of the two central strips had been destroyed. At the east end of the central strip a 4 by 4 area of Type A tiles is indicated by the surviving tiles in the north; a similar pattern is suggested on the south. West of these two areas there seems to have been an area of 6 by 4 tiles of Type B to the north of the central Row 3, followed by Type A tiles, the latter surviving in one tile to the south of Row 3. For the sake of overall symmetry in the two central strips, three areas of Type A tiles long east–west have been suggested twice, with large areas of Type B between them, seven and nine B tiles wide.
2. The tiles in the strip between Row 1 (north, C tiles, continuing from the eastern area) and Row 2 (F tiles) is quite regular at the east, becoming more unpredictable towards the west. The strip is four-tiles wide north–south (3 ft; 0.9 m), divided by north–south lines of F tiles from east to west: 4 x 4 A tiles; 3 x 4 B tiles; 1 x 4 B + 3 x 4 A tiles; 4 x 4 B tiles. The area west of the last north–south line of F tiles has been so damaged that any suggested sub-division is almost a pure guess. A strip of tiles of Type B three tiles long is indicated, followed by 4 x 4 Type A tiles, then Type B 7 x 4, and finally 2 x 4 Type A tiles.
3. To the north of Row 1 (C tiles), the pattern is different. The divisions are formed by tiles of Type C and the framing does not continue the line of the F tiles in the area to the south of Row 1. There is again a certain amount of regularity at the east end and more confusion further west, but this northern strip of tiles is identical in its western 3 m to the choice of tile types in the area to the south: from east to west, 5 x 5 B tiles; 2 x 5 B + 4 x 5 A tiles; 5 x 5 B tiles; a strip of 3 x 5 A tiles (which we have let continue in the areas to the south); 7.5 x 5 B tiles; and 2 x 5 A tiles. The half B tiles, the C tiles to the south, and the two A tiles to the west are reconstructed. These areas were re-laid in the late twelfth or early thirteenth century[71] and were identified during excavation as F. 460 (four half B tiles, one-half A tile, and re-laid C tiles) and F. 459 (a strip two A tiles wide, which had four B tiles incorporated and two B tiles inserted into the west end of the C row). The line of half-tiles at this point in the original floor is difficult to explain, but irregularities in laying the tiles may be the reason why it became necessary to use half-tiles in this area. Perhaps the two A-tile strip immediately to the east of the screen, as seen to the south, was laid first and the B-tile panel fitted in against the A tiles. It is also possible that half-tiles were not originally laid here but were used further west against the east face of the screen, but that would have interrupted the regular two A-tile/B-tile junction, which is kept straight by inserting half-tiles at the end of the large B-tile panel. It is also possible that a wooden bench (or other fixture) had been placed here against the back of the screen and that the B tiles were laid against it. Whatever the case, the tiles in this area were quickly worn (presumably by the feet of those seated with their back to the screen) and had to be replaced. In the reconstruction of the floor, we have used the easiest solution with minimum change to the tile patterns as found.
4. Only one RDFT tile was found *in situ* in the southern part of the western area, but the mortar imprints were intact here over large areas. The floor has been reconstructed using the mortar impressions of both the oblong rectangular and the square border tiles. For the tiles within the frames (or to the south of the Tile C frame in Row 5), the patterns as found in the northern half were used as a guide and they appear to work with the pattern suggested to the north.

The western half of the main area had relatively more RDFT tiles surviving in their primary position than in the eastern area, and larger areas of primary mortar bedding. The overall pattern of sub-division by oblong border tiles is relatively safe, whether by the rectangular Type F or the square Type C.

The central area is the most uncertain in its use of tiles of RDFT Types A and B. It is possible that Type A tiles were used both in the central area and to the south in

[71] See below, Final phase 22, p. 499.

strips of two or three as a separation between larger panels of tiles of Type B, as is seen in the north half.

In Illus. 3.2.25, the pattern of tiles of the various types needed in the re-created floor is compared for Trench 2 to the tiles and tile fragments actually found (as has been done for Trenches 3 and 4): the suggested reconstruction fits well.

The procedure in planning the interior and in attempting to reconstruct the carpet of RDFT (Illus. 3.2.19)

The floor of the main area of the chapter house measures 9.2 m (30 ft) north–south between the internal faces of the north and south walls, almost precisely one-third of the internal length of the chapter house, 27.6 m (90.5 ft) (Table 2.3.4).[72] The floor area bordered by the foot benches has, by contrast, no special proportion length to width.

Presumably when the screen was erected, tiling could then commence independently in the areas to east and west. The vestibule floor was completely re-laid in the early thirteenth century (Final phase 22), probably in the original pattern. Because no primary tiles or tile impressions survived, the reconstruction suggests a regular tile carpet in the vestibule with square tile panels 0.84 m (2.75 ft) in length and a central band.

In the main area of the chapter house to the east of the screen, the original layout of the tiles can be seen. As laid, the tile carpet diverges about half a metre to the south as it reaches the screen at the west end and looks rather like a large and irregular kilim. This irregularity makes it possible to suggest the procedure adopted in laying the tiles.

In the eastern area of the chapter house, the east–west centre-line was presumably intended to run between two rows of RDFT. The geometric tiles of Types D and E stopped at the halfway point, marked by a north–south line which may have been intended to follow either the edge of the line of square border tiles, or the centre of this line, as it more or less did as found immediately to the west of F. 250. To the west of this division, a row of narrow border tiles (Type F) lay on the north–south centre-line.

The division of the tiled floor into east–west strips by long continuous bands of border tiles seems to have been of overriding importance. The outer line of Type C border tiles continues uninterrupted from east to west through the whole of the main area as indicated both by the tiles themselves and by their imprints left in the mortar. To north and south there are panels usually five tiles wide in both the eastern and western parts. These outer areas, including the border, measure 1.22 m (4 ft.).

In the central part of the floor, two inner borders of Type C border tiles (measuring with the border 1.22 m or 4 ft), which may or may not have been subdivided into panels.

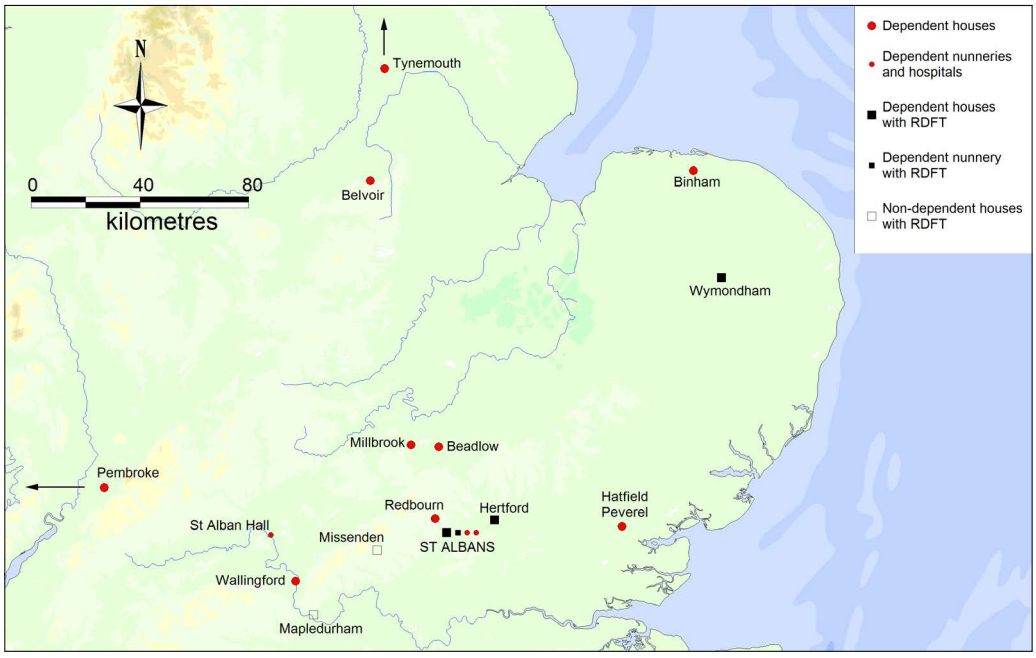
In the western part of the floor, the border tiles in the inner area were apparently of the narrow oblong Type F tiles, dividing the central area into four strips, the two outer strips 1 m (3.33 ft) wide, the inner two 0.84 m (2.75 ft) wide, separated by a border-line of narrow tiles.

The divisions into north–south strips are secondary. This can be seen not only by the way the carpet of tiles finally looked, but also on the ground, where at each surviving junction between an east–west and a north–south border, the tiles of the east–west row have precedence, the north–south lines butting up against the east–west rows. In the eastern area (where the tiles were found in their primary position) the divisions are regular, with each tile panel surrounded by borders composed of square tiles of Type C.

Westwards the pattern changes completely: closest to the screen there are no further border tiles in the outer strips, but instead a pattern with divisions created by using tiles of Type B tile as panel fill and tiles of Type A as border tiles. There seem also to have been straightforward mistakes in laying out the narrow borders since, although the panels in the strips flanking the middle seem to have been designed to be 4 x 4 tiles in area, one of the panels became only three tiles wide east–west when framed by tiles of Type F.

Against the east face of the screen, there is a north–south border of two Type A tiles, but the Type B panel ending against these is seven-and-a-half tiles wide, with the half-tiles laid against the A-tile border. It thus seems that when tiles of Type C ran out, tiles of Type A were chosen for the border, the border or frame being laid first, at least against the screen, and the fill second. In the central area the floor is again carefully laid with east–west borders of 152 mm (6 in.) wide tiles of Type F, with a border along the centre-line flanked by strips four-tiles wide to north and south, and borders of narrow tiles. These borders continue to north and south of the square area where the lectern seems to have stood. The central strips of tile may have had alternate areas of tiles of Types A and B, but the destruction of the original floor is too great here to allow further speculation. The reconstruction offered here is the simplest of many possibilities.

[72] The screen could be interpreted as having been a little wider or a little narrower, and the front of the foot bench on the east side could to some extent move a little either backward or forward.



Illus. 3.2.37. Map showing the distribution of relief-decorated floor tiles (RDFT).

Interpretation

It is possible that the borders or frames were all marked on the ground (perhaps with flicks of string in the wet mortar) and that the tile frames were laid first throughout the main area. That would have involved a complete calculation of the squares or areas of the carpet pattern in advance. If that had been done and the prepared floor marked, greater overall precision would be expected in the floor, and especially that the centre-line and the outer border of tiles of Type C would have recovered their true direction before diverging to the south. It is also unlikely that one would have run out of certain tiles had such a detailed calculation and drawing been done in advance. It seems as if the eastern area was laid out with greater regularity than the western (the tiles used were all the same size and the panels covered an equal area), but even there the east–west borders swing south to within 254 mm (10 ft) of the east wall.

It is much more likely that there were few control strings and that the laying of the tiles started on the centre-line at the east end. The tilers may have laid the central eastern strip first, but by the time they reached the coffins they were one tile too far south. The north–south division between the two parts must have been strung out and was respected, but the marking (whether strung or incised) somehow became uncertain while the tiles were being laid, perhaps because the layers pushed the string out of line or started laying the tiles up to the string instead of over its middle (or vice versa).

The tiles were not completely equal in size and the amount of mortar between them not always the same. The crew working on the floor may never have done anything like this before with the result that, as those laying the tiles worked north, south, and west, so the tile carpet in the south-west corner of the main area met the southern bench where it ought not to have done, and there was a 0.60 to 0.70 m gap at the north-west corner. This is supported by the mixture of tiles used at the west end of the main area. No tiles of Types D and E were meant to be used there, and none were, but it seems from the overall pattern that it may have been intended to use the border tiles of Type C for the north–south divisions in the north and south strips. There also seem to have been too few of the narrow border tiles of Type F, with the result that the further west the tiles were laid, the more the pattern of the floor deviated from the original plan.

The east part of the RDFT carpet may well have been laid as intended, even if not accurately. The north–south border of narrow tiles may well have been one of the marked lines since it also forms the western border of the possible position of the lectern (Illus. 3.2.19). It looks as if tiles of Type B were intended to be used in the outer strip of tiles in the two eastern panels, followed by two panels of tiles of Type A and by two panels of tiles of Type B. It is also possible that all the tiles between the west face of the lectern and the tiles of Type D/E were meant to be B tiles. At any rate, there seems to have been a desire in the western part to have north–south panels of the same types of tile across the width of the floor, alternating between A tiles and B tiles, with the B tiles being the most common.[73]

[73] It is interesting to note that tiles of Type B are by far the most common, both in a primary position and as fragments in later layers.

Whatever the design, serious errors were made in laying out the western part of the carpet, but because the patterns of these tiles are not so interlocking as the patterns on tiles of Types D and E, these mistakes would hardly have been noticeable: to someone standing by the door the overall impression made by the tiled carpet would have been overwhelming.

Relief-decorated floor tiles: their distribution in areas north-east of the Thames

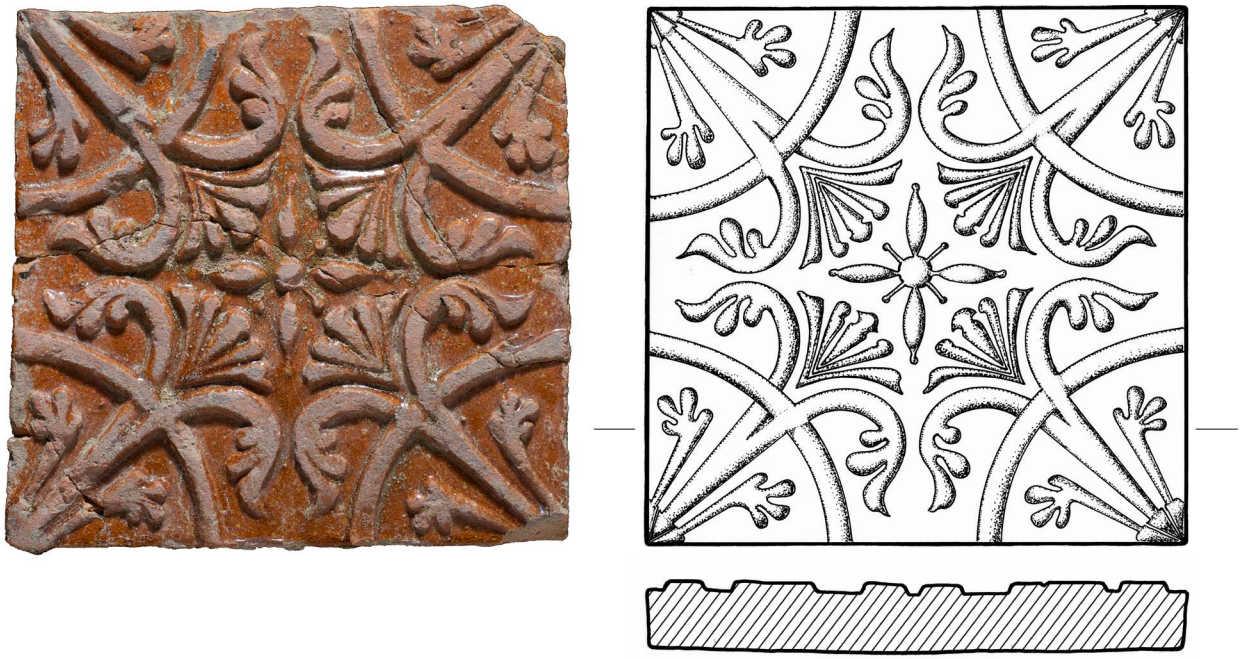
Relief-decorated floor tiles of the types published here have a distribution north of the Thames which clearly centres on St Albans, but extends further in monastic houses with connections to St Albans Abbey (see Illus. 3.2.37 and Table 3.2.8).

Table 3.2.8. RDFT tiles: quantities of from the St Albans Abbey chapter house and elsewhere

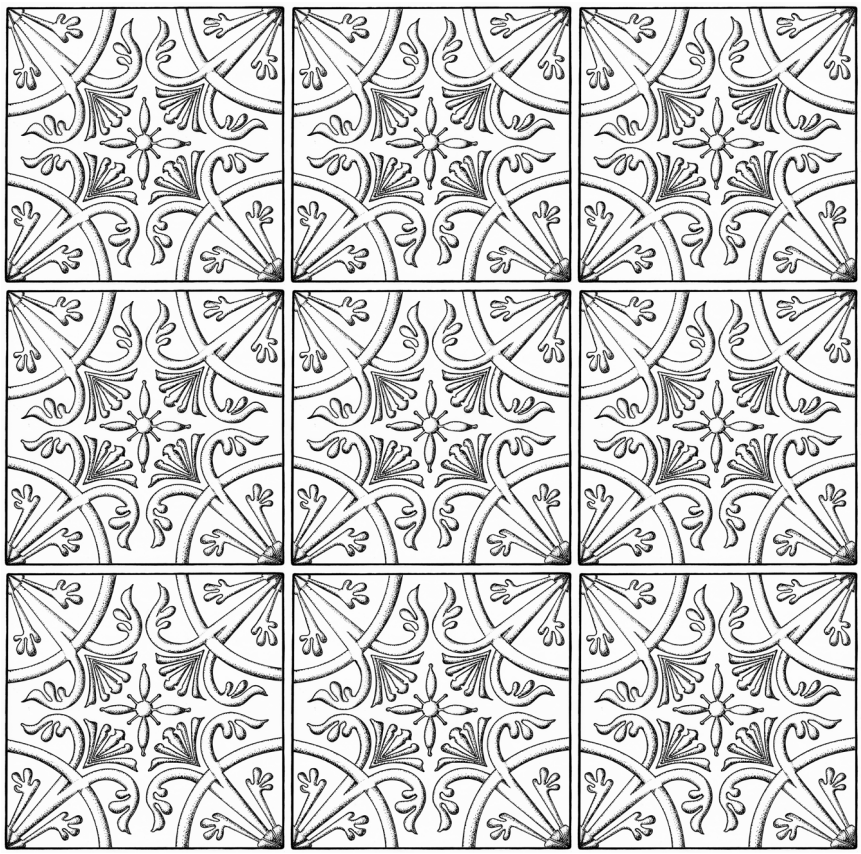
Site	A	B	C	D	E	F	G	H	I	J
St Albans chapter house 1978	322 tiles + 802 frags	343 tiles + 1,707 frags	49 tiles + 926 frags	55 tiles + 757 frags	6 tiles + 329 frags	145 tiles + 376 frags	17 tiles + 56 frags	5 tiles + 14 frags	1 tile + 1 frag.	1 tile
St Albans 19th–20th-cent. non-chapter house finds	1 tile + 2 frags[74]	20 tiles + 6 frags[75]	-	2 frags[76]	-	2 tiles + 1 frag.[77]	2 tiles[78]	-	-	-
Blundells/Heritage Close, St Albans, Herts.	-	2 frags[79]	-	-	-	2 frags[80]	-	-	-	-
Vintry Garden, St Albans, Herts.	1 frag.[81]	-	-	-	-	-	-	-	-	-
Sopwell Priory, St Albans, Herts.	3 frags[82]	4 frags[83]	-	-	-	9 frags and 1 possible frag.[84]	-	-	-	-
St Mary's Priory, Hertford, Herts.	-	3 tiles + 45 frags[85]	-	-	-	17 frags.[86]	-	-	-	-
Missenden Abbey, Bucks.	-	14 frags[87]	-	-	-	1 tile + 1 frag.[88]	-	-	-	-
Wymondham Priory, Norfolk	2 frags[89]	1 frag.[90]	-	-	-	1 tile[91]	-	-	-	-
Mapledurham (church rectory), Oxon.	-	-	1 tile[92]	-	-	-	-	-	-	-

[74] 1 tile and 1 fragment of Type A, Variant i. The remaining fragment appears to bear the same design as the chapter house Type A tiles.
[75] 17 tiles and 4 fragments of Type B, Variant i; 3 tiles and 2 fragments appear to bear the same design as the chapter house Type B tiles.
[76] 1 fragment of Type D1 and 1 fragment of Type D2; both appear to bear the same designs as the corresponding chapter house types.
[77] All appear to bear the same design as the chapter house Type F tiles.
[78] Both appear to bear the same design as the chapter house Type G tiles.
[79] The fragments appear to bear the same design as the chapter house Type B tiles.
[80] The fragments appear to bear the same design as the chapter house Type F tiles.
[81] Appears to bear the same design as the chapter house Type A tiles.
[82] The fragments appear to bear the same design as the chapter house Type A tiles.
[83] The fragments appear to bear the same design as the chapter house Type B tiles.
[84] The fragments appear to bear the same design as the chapter house Type F tiles.
[85] All appear to be Type B, Variant ii.
[86] All appear to be Type F, Variant i.
[87] All appear to be Type B, Variant iii.
[88] Both are Type F, Variant ii.
[89] The fragments appear to bear the same design as the chapter house Type A tiles.
[90] Appears to bear the same design as the chapter house Type B tiles.
[91] Appears to bear the same design as the chapter house Type F tiles.
[92] Bears the same design as the chapter house Type C tiles.

RDFT Type A



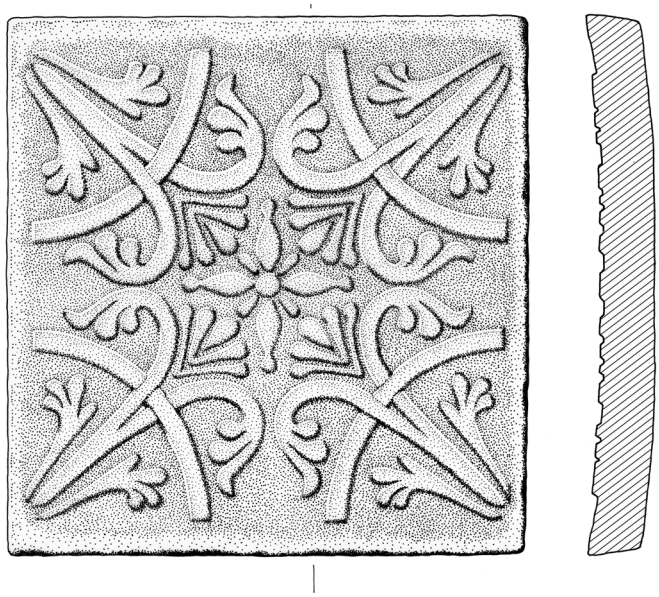
RDFT Type A (1:3). Range of size: 206 x 212 mm to 245 x 250 mm (average 215–220 mm).
Range of thickness at centre: 24–28 mm (average 26 mm). Range of thickness at edge: 17–30 mm (average 23–25 mm).



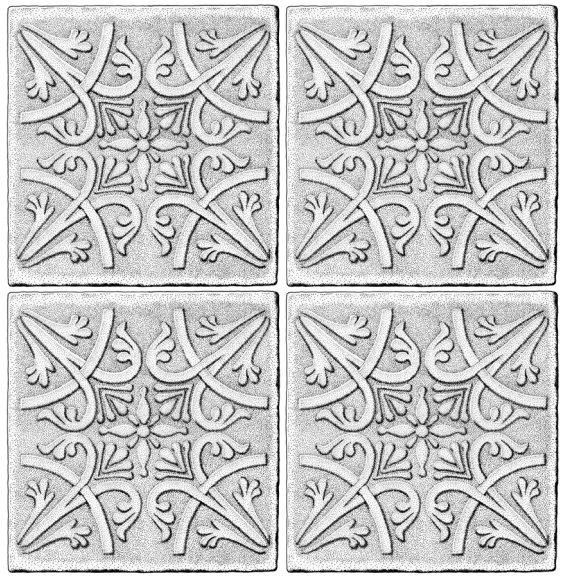
RDFT Type A, 9-tile pattern (1:6)

Illus. 3.2.27. Relief-decorated floor tiles (RDFT) type A.

RDFT Type A, Variant i



RDFT Type A, Variant i (1:3). From St Albans Abbey, north transept (now in British Museum, see BM Cat.) This drawing is based on an incomplete tile in the British Museum (see photo below). This is a suggested reconstruction of what the complete tile would have looked like. Dimensions: 222 x 169* (incomplete) mm. Thickness: 26 mm. Predicted dimensions (based on Simon Hayfield's drawing): 222 x 230 mm.

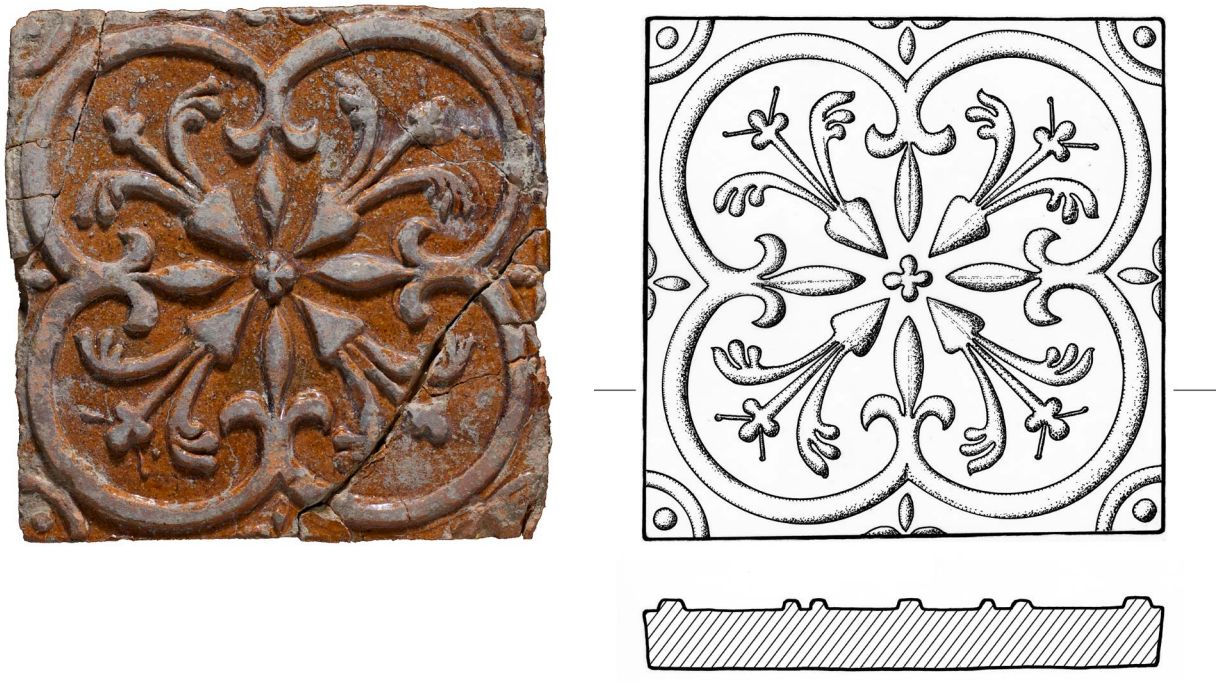


RDFT Type A, Variant i, 4-tile pattern (1:6)

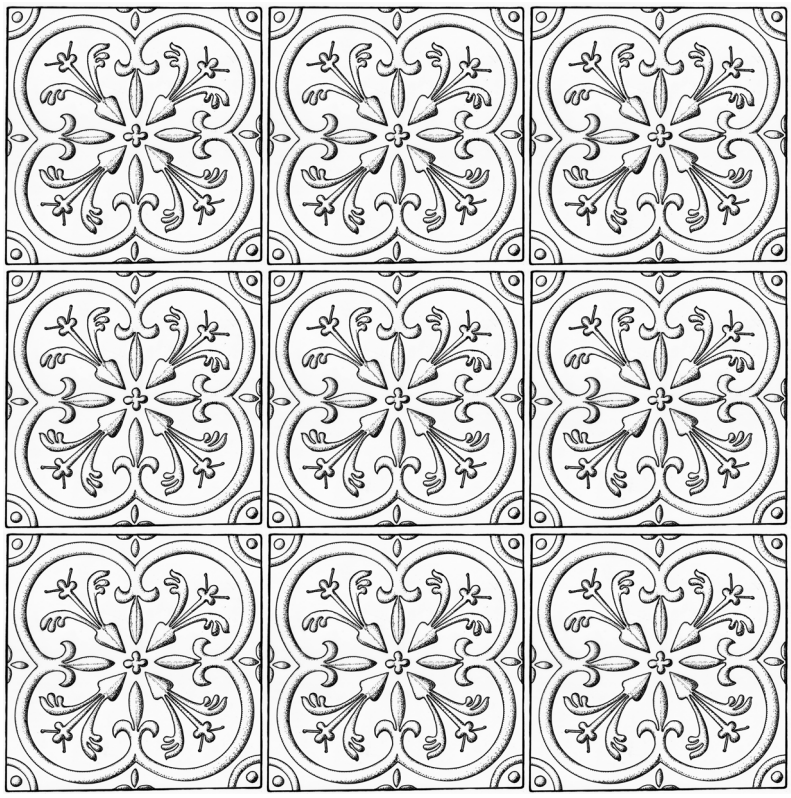
- Basically the same design as the chapter house RDFT Type A tiles.
- The key difference is that this variant has a blank border (not raised) around the edges. This border does not appear to be the same size all the way around the tile – on some sides it is narrower than on other.
- This border makes the decorative scheme less effective when several tiles of this type are placed together.
- The estimated size of the single tile we have is 222 x 230 mm, which is slightly larger than the average size of the chapter house Type A tiles (215–220 mm), though it lies well within the range of sizes recorded for the chapter house Type A tiles. The blank border may account for the slightly larger size of this variant.
- The only tile of this variant type that I have seen has a somewhat 'bowed' section.

Illus. 3.2.27 *cont.*

RDFT Type B



RDFT Type B (1:3)



RDFT Type B, 9-tile pattern (1:6)

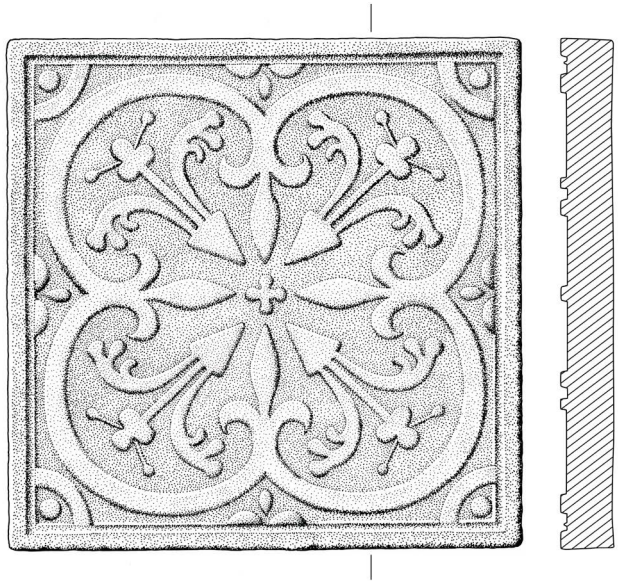
RDFT Type B overall (all subgroups). Range of size: 204 x 207 mm to 230 x 230 mm (average 215–217 mm). Range of thickness at centre: 20–27 mm (average 24 mm). Range of thickness at edge: 17–30 mm (average 22–25 mm).

RDFT Type B, Subgroup 1. Range of size: 210 x 210 mm to 230 x 230 mm. Range of thickness at edge: 20–30 mm.

RDFT Type B, Subgroup 2. Range of size: 204–207 mm to 210 x 210 mm. Range of thickness at edge: 20–25 mm.

Illus. 3.2.28. Relief-decorated floor tiles (RDFT) type B.

RDFT Type B, Variant i

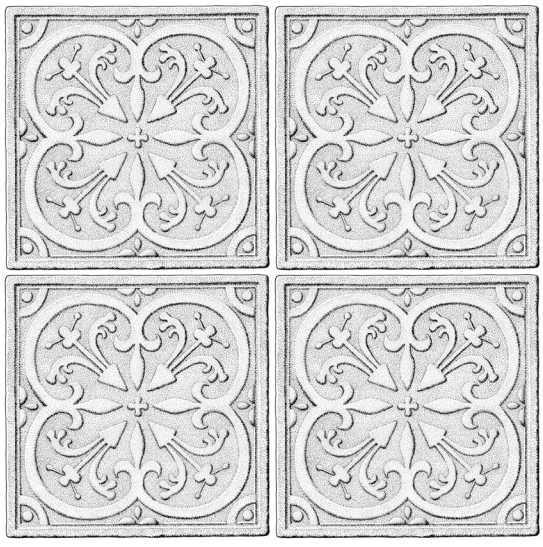


RDFT Type B, Variant i (1:3). From St Albans Abbey, north transept (now in British Museum, see BM Cat.)

Those in the presbytery all have a narrow raised rim on one or more of their sides and are roughly square with sides measuring between 225 mm (8 7/8 in.) and 275 mm (10 13/16 in.). All but one of these tiles appear to have been put together from fragments, which is hardly surprising as they were discovered under tons of earth which had been laid over the early floors in late medieval and post-Reformation times. The single complete example has a raised rim on all four sides and measures 235 mm (9 ¼ in.) square.

The BM examples are: 214 x 214 mm. Th. 23 mm; 235 x 228 mm. Th. 27 mm; 234 x 228 mm. Th. 23 mm. Three additional fragments with measurable thicknesses: Th. 22 mm; Th. 25 mm; Th. 22 mm.

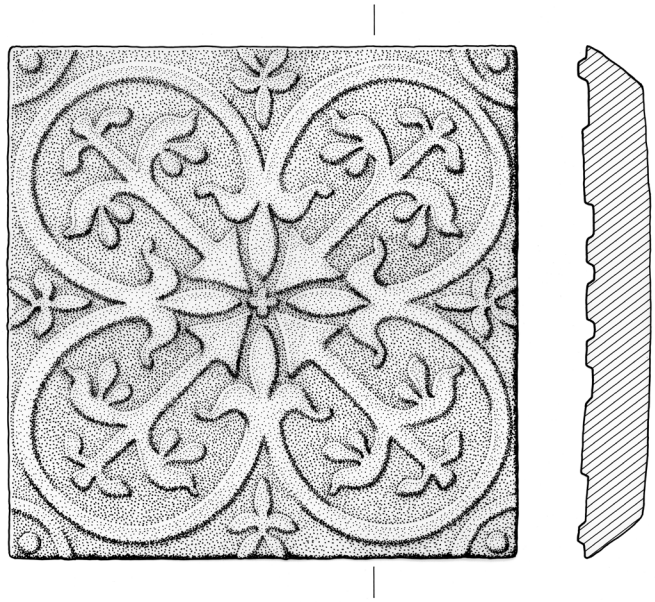
- The main (central) design is essentially identical in terms of concept, layout and decoration to the chapter house Type B tiles.
- The key difference between the chapter house Type B tiles and the Type B, Variant i tiles is the presence of a rim/border around the edges of the latter.
- This rim/border makes the decorative scheme less effective when several tiles of this type are placed together.
- The Type B, Variant i tiles generally appear to be somewhat larger than the average size of the chapter house Type B tiles, which have average dimensions of 215–217 mm and a maximum recorded side length of 230 mm. The rim/border presumably accounts for the slightly larger size of this variant.



RDFT Type B, Variant i, 4-tile pattern (1:6)

Illus. 3.2.28 *cont.*

RDFT Type B, Variant ii



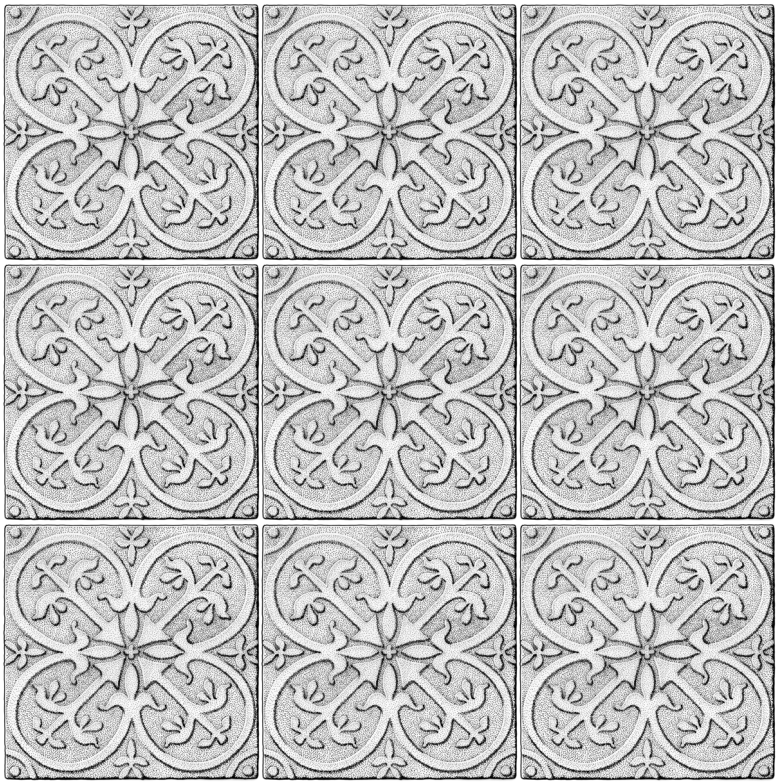
RDFT Type B, Variant ii (1:3). From St Mary's Priory, Hertford.

I have measured two of the complete (reconstructed) tiles. Their dimensions are 203 x 203 mm and 202 x 200 mm. The tiles are 21–26 mm thick at their edges.

- Although clearly very similar, the design of the Type B, Variant ii tiles differs from the design of the chapter house Type B tiles and the Type B, Variant i (north transept) tiles in several respects:
- i. The fleur de lys in the centre of each edge of the Variant ii tiles have 'legs'.
- ii. The 'lobed' decoration composed of four semi-circles is slightly different. The semi-circles each form more of a 'horseshoe' type shape and end higher up the fleur-de-lys at their ends.
- iii. The four 'plants' 'growing' out from the centre of the tile have different flowers and florets.
- These differences in design are also present on the Variant iii (Missenden) tiles. Therefore the main designs of Variants ii and iii are very similar and notably different from the chapter house tiles and Variant i, which also have very similar main designs.
- The Type B, Variant ii tiles lack a rim/border. In this sense they are similar to the chapter house tiles and different from Variants i and iii.
- The edges are noticeably bevelled. The chapter house Type B tiles appear to have a slight bevel (somewhat less than Variant ii), whereas Variants i and iii appear to have generally straight (unbevelled) edges.
- The Variant ii tiles are notably smaller than the chapter house tiles and the other variants. If we ignore the rim/border on Variant iii, its central design appears to be *c.*212 x 212 mm, only slightly larger than Variant ii. We should, however, bear in mind that the size of Variant iii is quite a rough estimate (reconstructed from fragments which weren't measured with a high degree of accuracy).

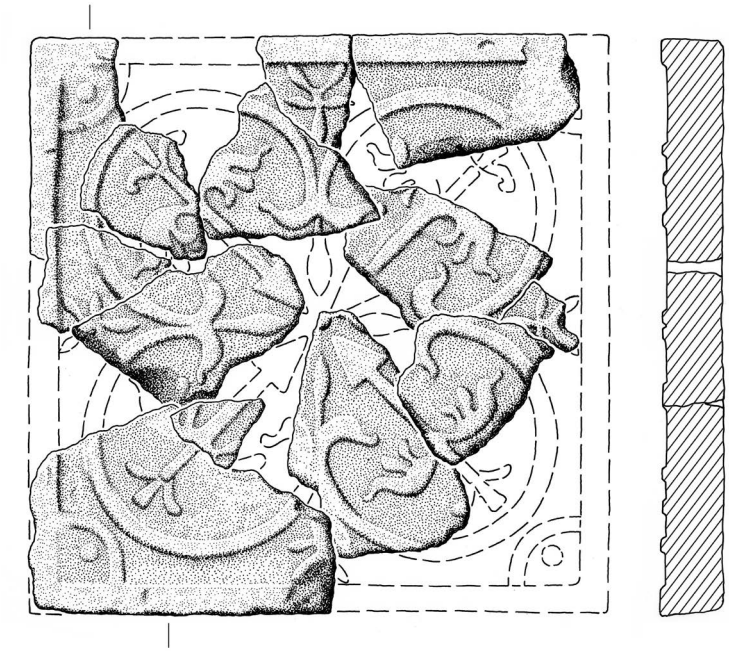
Illus. 3.2.28 *cont.*

RDFT Type B, Variant ii cont.



RDFT Type B, Variant ii, 9-tile pattern (1:6)

RDFT B, Variant iii

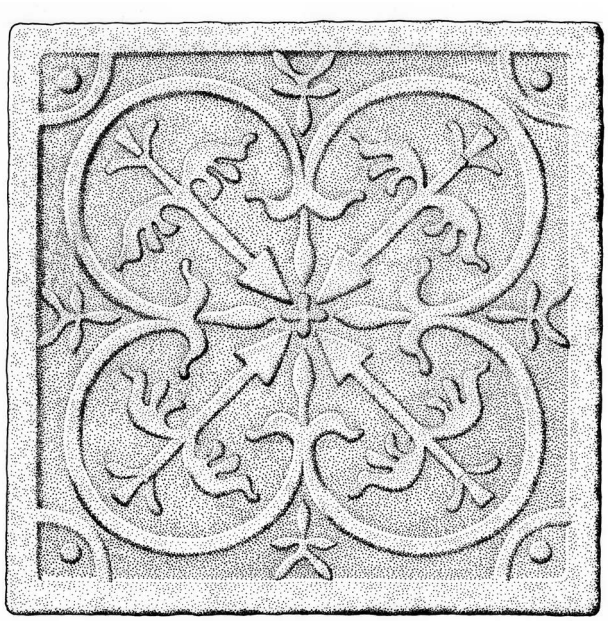


RDFT B, Variant iii, from Missenden Abbey (1:3) [Note, none of the fragments join]

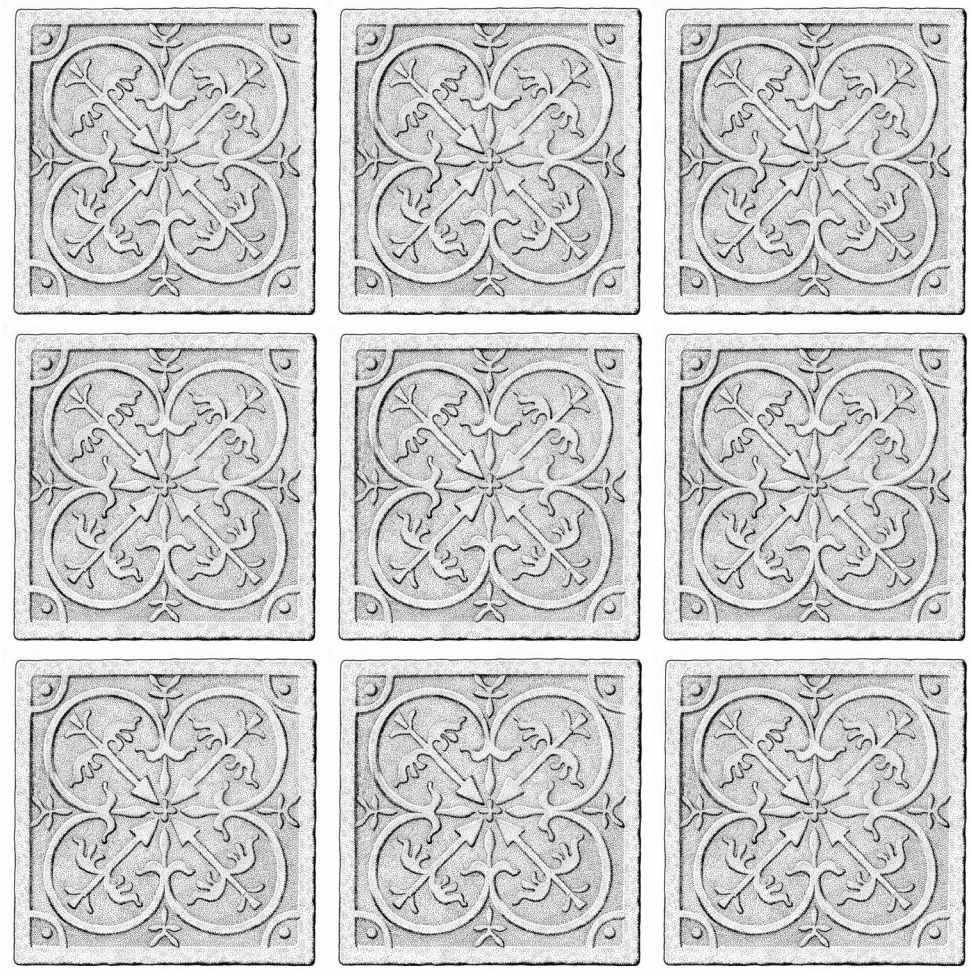
- See Variant ii for a full discussion of the design of Variant iii.

Illus. 3.2.28 *cont*.

RDFT B, Variant iii cont.



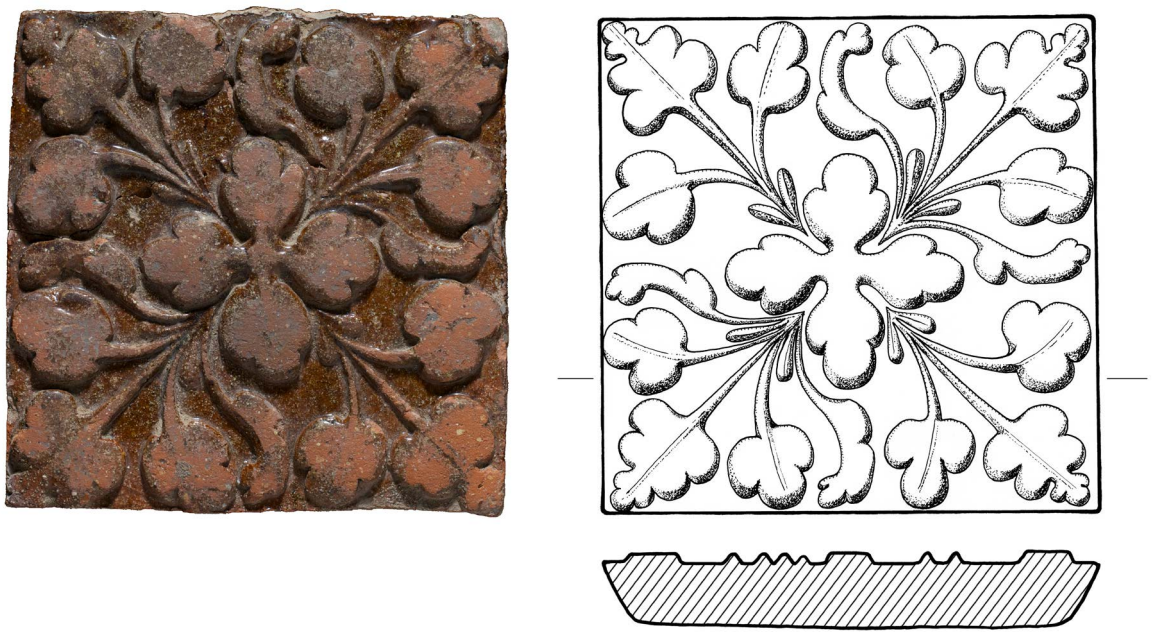
RDFT Type B Variant iii, reconstruction (1:3). Sides roughly estimated to be *c.*234 mm. Th. (at edge) 25–28 mm



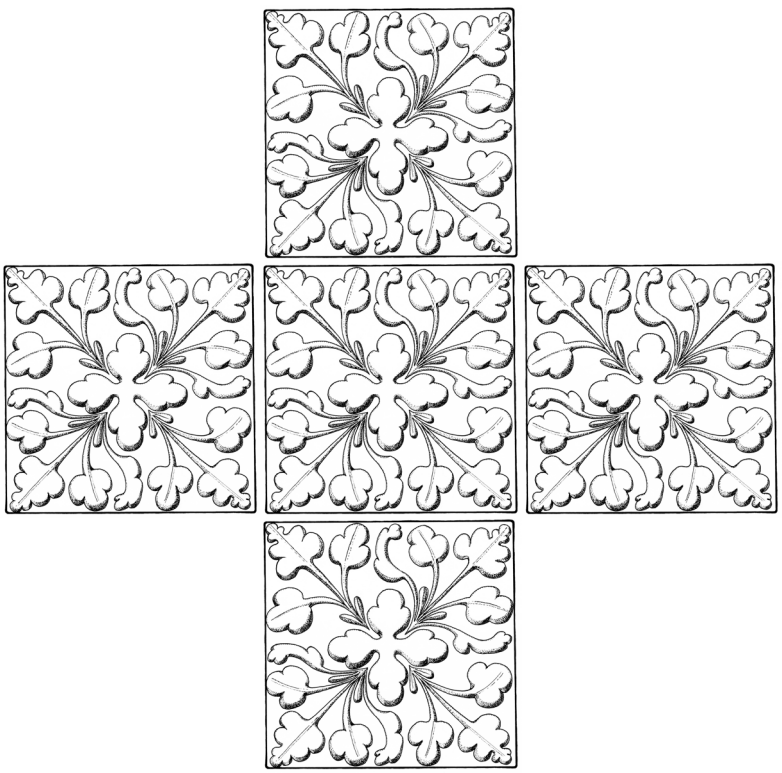
RDFT Type B, Variant iii, 9-tile pattern (1:6)

Illus. 3.2.28 *cont.*

RDFT Type C



RDFT Type C (1:3). Range of size: 200 x 200 mm to 215 x 220 mm (average 205–210 mm). Range of thickness at centre: 22–31 mm (average 25–26 mm). Range of thickness at edge: 16–28 mm (average 24–25 mm).



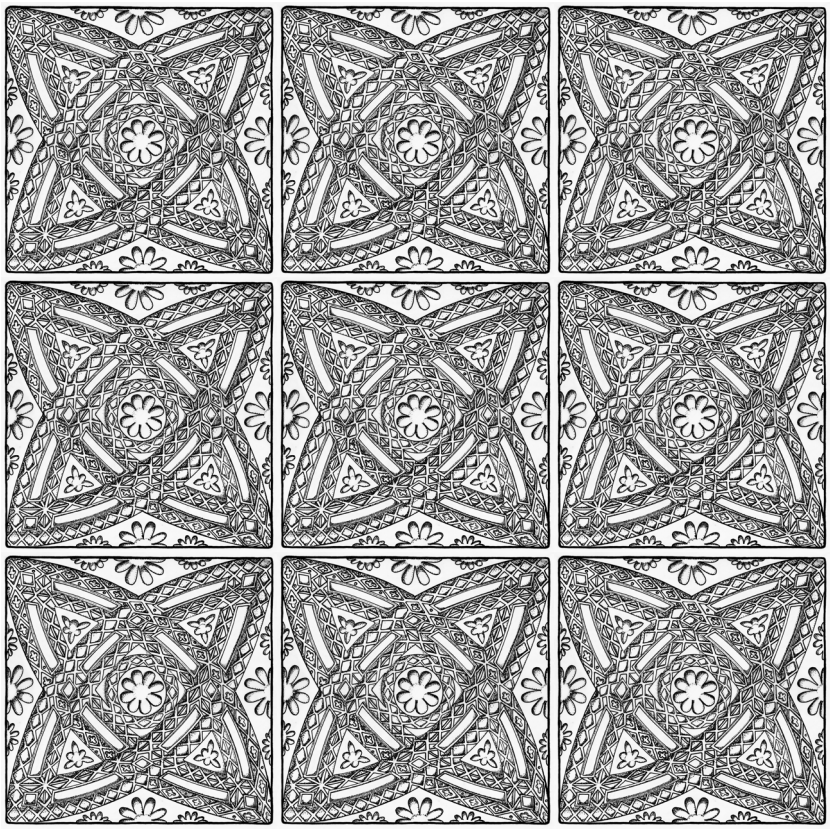
RDFT Type C, tile pattern (1:6)

Illus. 3.2.29. Relief-decorated floor tiles (RDFT) type C.

RDFT Type D1



RDFT Type D1 (1:3). Range of size: 212 x 215 mm and 223 x 225 mm (average 215–220 mm). Range of thickness at edge: 20–27 mm (average 25 mm).



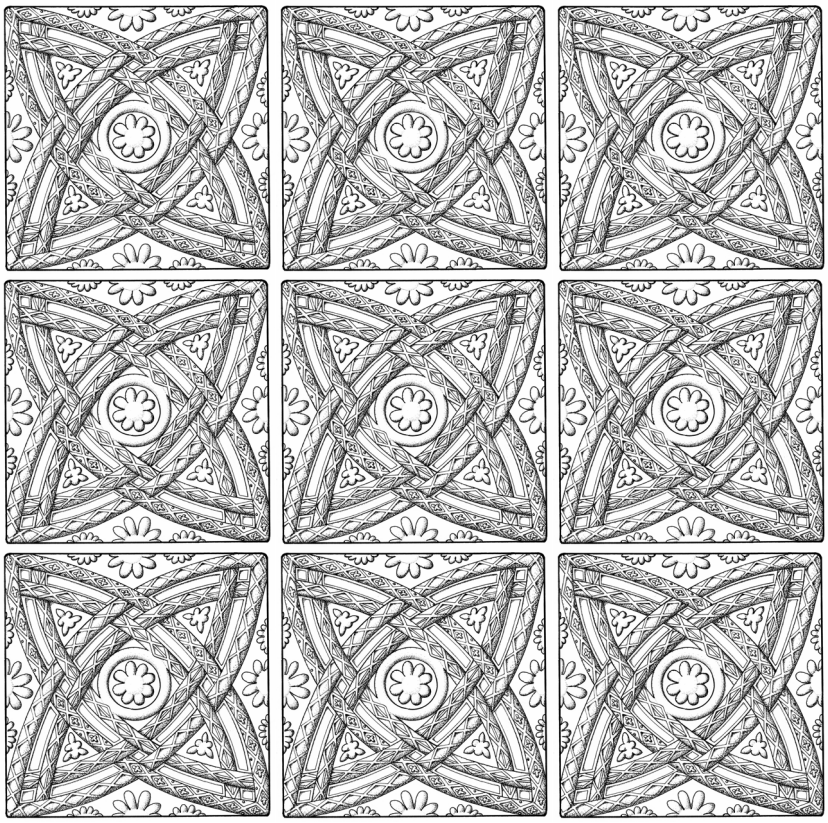
RDFT Type D1, 9-tile pattern (1:6)

Illus. 3.2.30. Relief-decorated floor tiles (RDFT) types D1–3.

RDFT Type D2



RDFT Type D2 (1:3). Range of size: 220 x 220 mm. Range of thickness at edge: 27 mm.



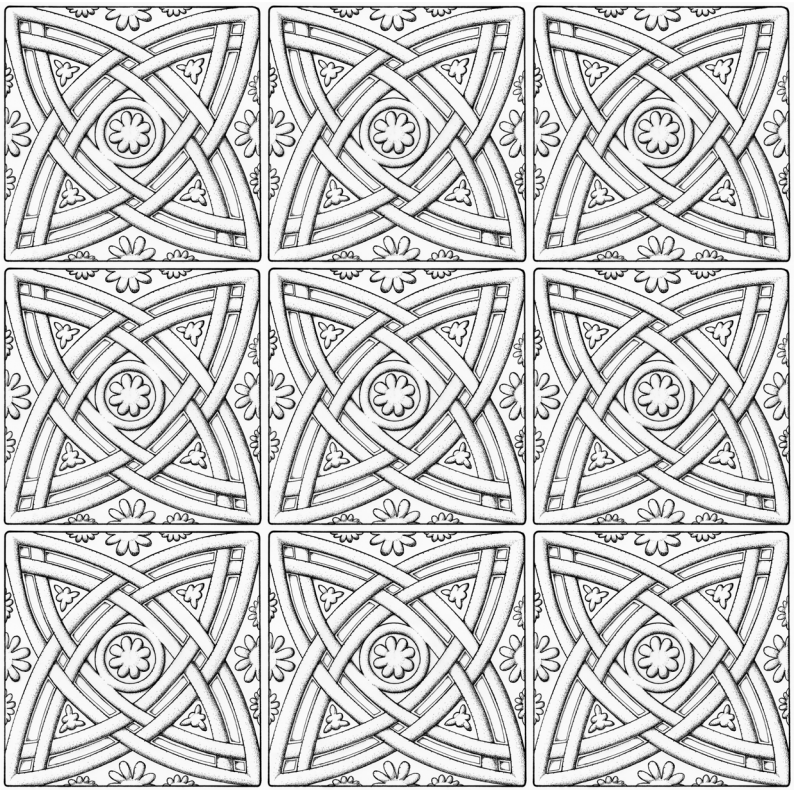
RDFT Type D2, 9-tile pattern (1:6)

Illus. 3.2.30 *cont.*

RDFT Type D3



RDFT Type D3 (1:3). Range of size: 214 x 216 mm and 218 x 222 mm (average 215–220 mm).
Range of thickness at edge: 28–31 mm.



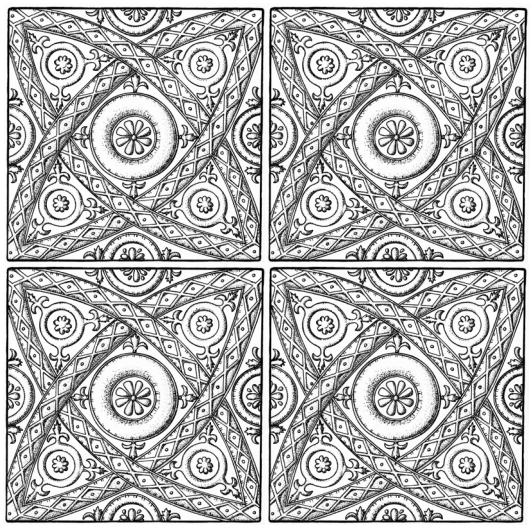
RDFT Type D3, 9-tile pattern (1:6)

Illus. 3.2.30 *cont.*

RDFT Type E



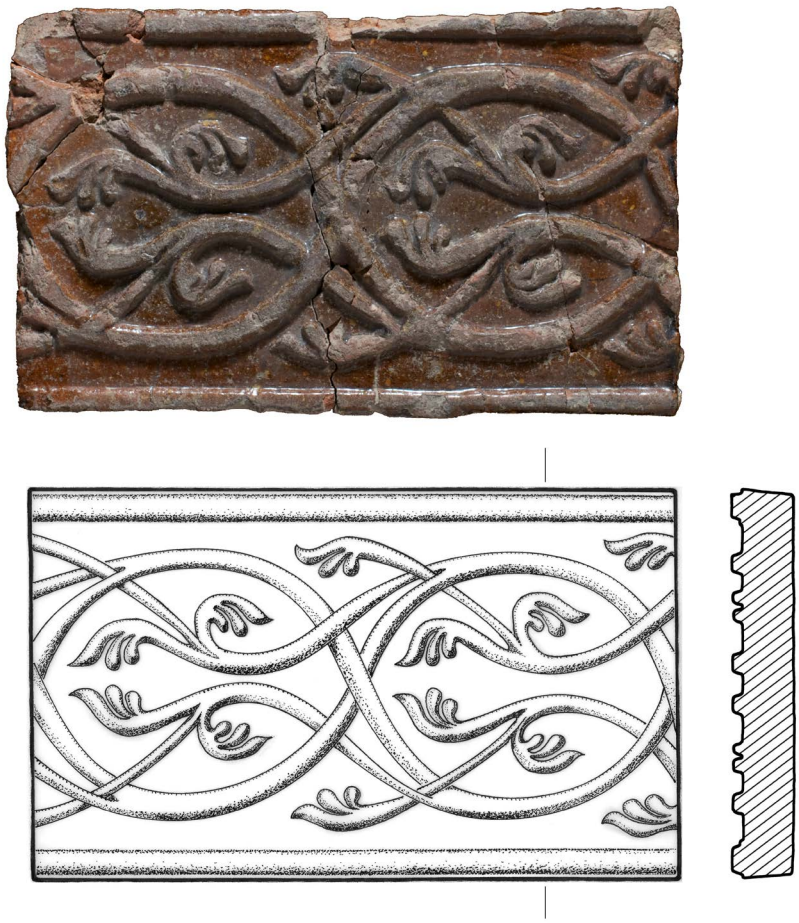
RDFT Type E (1:3). Range of size: 211 x 214 mm and 213 x 220 mm (average 213–215 mm). Range of thickness at centre: 30–35 mm (average 30–31 mm). Range of thickness at edge: 24–35 mm (average 28 mm).



RDFT Type E, 4-tile pattern (1:6)

Illus. 3.2.31. Relief-decorated floor tiles (RDFT) Type E.

RDFT Type F



RDFT Type F (1:3)

RDFT Type F overall (all subgroups). Length ranges between 250–290 mm (average 265–275 mm). Width ranges between 150–167 mm (average 163 mm). Range of thickness at centre: 23–29 mm (average 27 mm). Range of thickness at edge: 18–30 mm (average 25 mm).

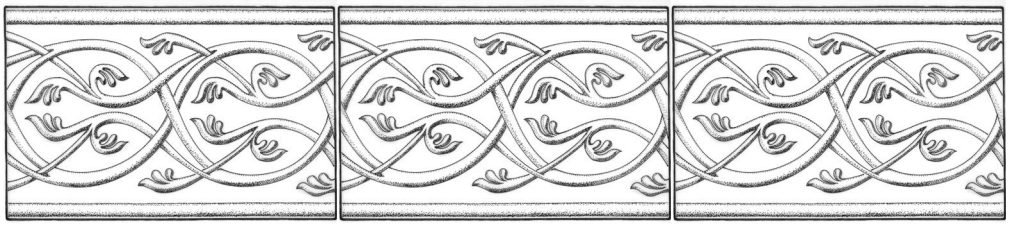
RDFT Type F, Subgroup 1. Length ranges between 250–260 mm (average 250 mm). Width ranges between: 160 mm. Range of thickness at edge: 29–30 mm (average 30 mm).

RDFT Type F, Subgroup 2. Length ranges between: 270–280 mm (average 275 mm). Width ranges between: 155–165 mm (average 160 mm). Range of thickness at edge: 20–30 mm (average 25 mm).

RDFT Type F, Subgroup 3. Length ranges between 254–270 mm (average 260 mm). Width ranges between 150–160 mm (average 160 mm). Range of thickness at edge: 26–30 mm (average 30 mm).

RDFT Type F, Subgroup 4. Length ranges between 270–290 mm. Width ranges between 163–165 mm. Range of thickness at edge: 20 mm.

RDFT Type F, Subgroup 5. Length 265 mm. Width 160 mm. Edge thickness 20 mm.

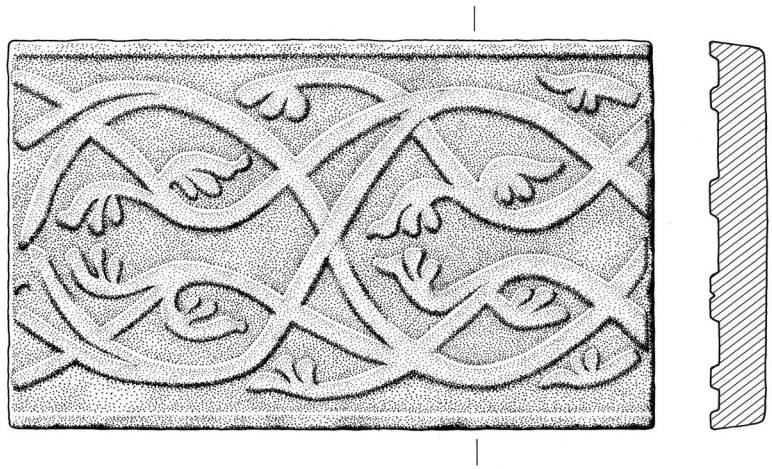


RDFT Type F, tile pattern (1:6)

This (at 1:6) demonstrates that on the chapter house Type F tiles the foliage pattern 'flows' effectively and accurately from tile to tile. This appears to contrast with the Type F variants from Great Missenden and Hertford where the tendrils often do not match up when one tile is placed against another.

Illus. 3.2.32. Relief-decorated floor tiles (RDFT) Type F.

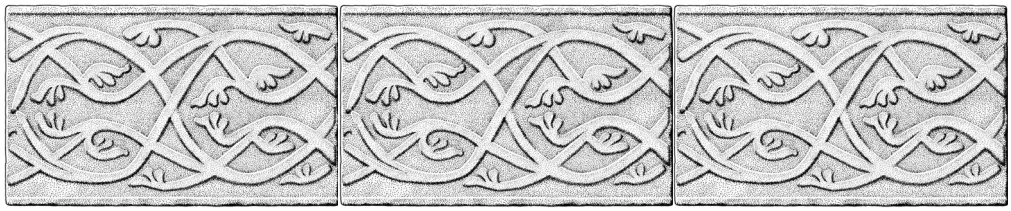
RDFT Type F, Variant i, from Hertford



RDFT Type F, Variant i (1:3)

This reconstruction drawing is based on fragments. This is a suggested reconstruction of what the complete tile would have looked like. The tiles are 20–25 mm thick at the border edge. Predicted dimensions based on Simon's reconstruction drawing: L. 258 mm. W. 156 mm. Th. 20–25 mm.

- The foliage design is almost identical in terms of concept, layout and decoration to the chapter house Type F tiles (and the Variant ii tiles).
- This variant is well within the wide range of sizes apparent for the chapter house Type F tiles; indeed its dimensions do not appear far off the overall average for the chapter house Type F tiles.
- Note that the foliage pattern does not appear to match up and 'flow' perfectly from one tile to the next. This also appears to be the case with Type F, Variant ii tiles, but the foliage pattern on the chapter house Type F tiles does flow very well from one tile to the next.



RDFT Type F, Variant i, tile pattern (1:6)

Illus. 3.2.32 *cont.*

RDFT Type F, Variant ii, from Missenden Abbey



RDFT Type F, Variant ii (1:3).
L. 245 mm. W. 125 mm. Th. 20–25 mm (another fragment from Missenden is 27.5 mm thick)

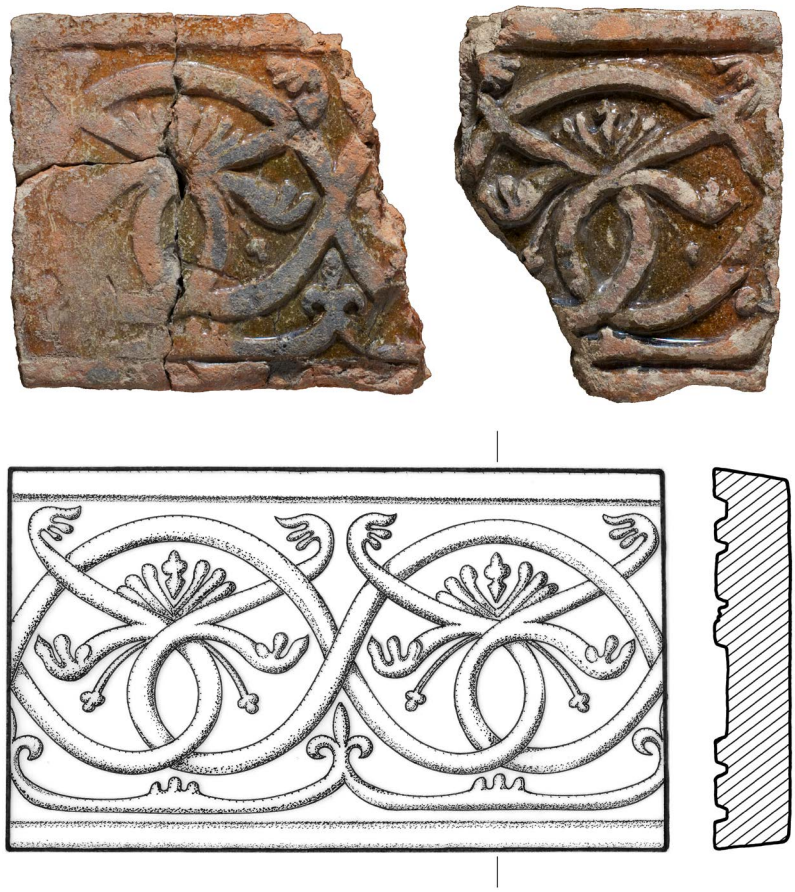
- The foliage design is almost identical in terms of concept, layout and decoration to the chapter house Type F tiles (and the Variant i tiles).
- This variant is, however, much narrower (in terms of width) than the chapter house Type F tiles (and the Variant i tiles).
- In contrast to the other Type F tiles, Variant ii does not have a border along its upper edge. It has a narrow border on its lower edge only.
- Note that the foliage pattern does not appear to match up and 'flow' perfectly from one tile to the next. This also appears to be the case with Type F, Variant i tiles, but the foliage pattern on the chapter house Type F tiles does flow very well from one tile to the next.



RDFT Type F Variant ii, tile pattern (1:6)

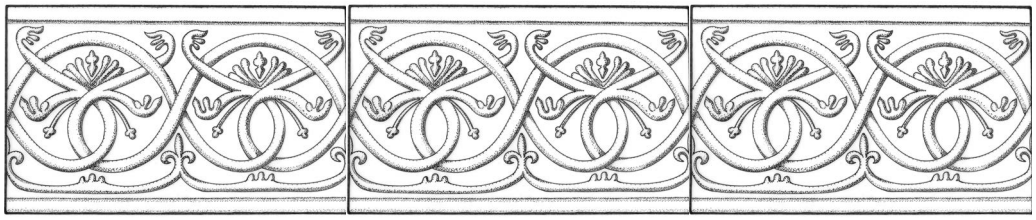
Illus. 3.2.32 *cont.*

RDFT Type G



RDFT Type G (1:3)

L. (incomplete maximum): 165 mm. Length of half design ranges between: 133–133.5 mm. Estimated total length: 266–267 mm. Width ranges between 155–166 mm (average 155 mm). Range of thickness at edge: 26–32 mm (average 28 mm).



RDFT Type G, tile pattern (1:6)

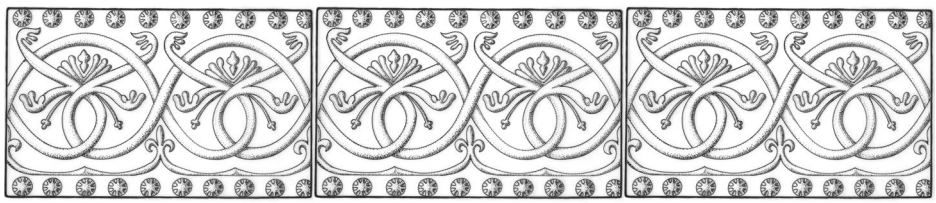
Illus. 3.2.33. Relief-decorated floor tiles (RDFT) Type G.

RDFT Type H



RDFT Type H (1:3)

L. (incomplete maximum): 146 mm. Length of half design ranges between 123–124 mm. Estimated total length 246–248 mm. Width ranges between 157–158 mm. Range of thickness at edge: 21–31 mm (average 27 mm).



RDFT Type H, tile pattern (1:6)

Illus. 3.2.34. Relief-decorated floor tiles (RDFT) Type H.

RDFT Type I



RDFT Type I (1:3)

RDFT Type I. L. (incomplete maximum): 195 mm. W: 119 mm. Edge thickness: max. 32 mm.

Illus. 3.2.35. Relief-decorated floor tiles (RDFT) Type I.

RDFT Type J



RDFT Type J (1:3)

RDFT Type J. L. (incomplete maximum): 114 mm. W: 110 mm. Edge thickness: 26–29 mm.

Illus. 3.2.36. Relief-decorated floor tiles (RDFT) Type J.

PART 3

3. THE SCULPTURE AND MOULDINGS OF THE THIRD (RECTANGULAR) CHAPTER HOUSE

by the late GEORGE ZARNECKI *and* DEBORAH KAHN

The documentary evidence for the building activities of Abbot Robert is very precise. The *Gesta Abbatum* states that he constructed the chapter house, the slype (parlour), the chapel of St Nicholas, that part of the cloister that was adjoining the chapter house, with the lavers and the stables.[1] None of these buildings survive but the slype was only demolished in 1885 and some of its sculpture has been saved. The excavation of the chapter house site revealed small but important portions of its original sculptural decoration. It also brought to light very precious fragments of sculpture, the original location of which can only be a matter of conjecture. The present study is principally concerned with the stone sculpture that originates from the years of Robert's abbacy (1151–66) and that originated in one of the buildings mentioned above. A few other pieces of Romanesque sculpture of unknown provenance found from time to time within the precincts of the abbey are recorded at the end, for the sake of completeness.

The chapter house

The chapter house (*capitulum*) was among the most important buildings in monastic life and as such was usually among the most richly decorated and what survives at St Albans indicates that its chapter house was no exception.

The typical ground plan of a chapter house in twelfth-century England was, as at St Albans, rectangular, sometimes with an apse inherited from an earlier stage, although centrally-planned chapter houses were beginning to make their appearance.[2] The chapter house was entered either directly from the cloister as at St Albans or through an intermediary vestibule. The doorway was usually flanked by one or two window-like apertures. These openings improved the lighting of the interior which, because of its position between other buildings, received little direct light.[3] The principal function of the openings, however, was ceremonial, allowing brethren passing through the cloister walk to pay homage at certain times,[4] and enabling lay brethren to watch proceedings in the chapter house. No doubt because of their important function the doorway and flanking arches were, at least by the twelfth century, richly decorated.[5] In some cases they were even more sumptuous than the main entrance to the church.[6]

The application of sculpture varied. At Rochester the main sculpture, figural and geometric, was concentrated on the chapter house doorway and flanking openings.[7] At Much Wenlock in Shropshire these were richly carved with geometric ornament, and in addition figures in relief were set in the spandrel above the doorway.[8]

At St Albans, on the interior of the chapter house (the east face of the west wall), the plinths and one base of the north side of the doorway survived in place (Illus. 3.3.1). That the doorway should have been recessed and shafted on the interior as well as the exterior face implies an unusually sumptuous arrangement. The plinths and lower courses of masonry at the intersection of the north and west walls on the interior of the structure were also found *in situ* with some carved ornament remaining (Illus. 3.3.2). The most prominent jamb was enriched with confronted, mirror-image beaded chevron. On the right-hand side of this a smaller engaged colonnette was carved with veined and beaded stalks forming a lush but graceful, continuous entwined pattern. These two carved orders formed the right-hand side of the north aperture on the inside of the west wall of the chapter house. Matching plinths were also found in a

[1] *Gesta Abbat.*, I, 179.

[2] For a general survey of English chapter houses, see Wickham 1912. For centrally-planned chapter houses in England, see Stratford 1978.

[3] The west wall of the chapter house at Rochester survives a full two storeys high; the three tall windows which pierce it must have created a bright interior, despite the British climate.

[4] As described in Knowles (ed.) 1951, 77. 'When the servers rise from supper they go into the church past the chapter house. As they pass the chapter house they shall bow profoundly. But at the door of the chapter house they shall draw themselves up and bow towards the east in the usual manner. The brethren who are sitting in the chapter house shall rise and bow profoundly to them as they pass.'

[5] The monumental chapter house entrance at Winchester Cathedral, of the eleventh century, has no sculptural ornament apart from the massive scallop capitals, see Pevsner and Lloyd 1967, 685, Pl. 10.

[6] At Saint-Georges de Boscherville in Normandy, for instance, the church doorway has carved capitals and arches but plain shafts, while the chapter house doorway and flanking openings not only have richly decorated arches and elaborate capitals, but also column figures, see Michon 1926, 545–9.

[7] Hope 1900b; Kahn 1982, 57–65.

[8] Cranage 1922, 116–17.



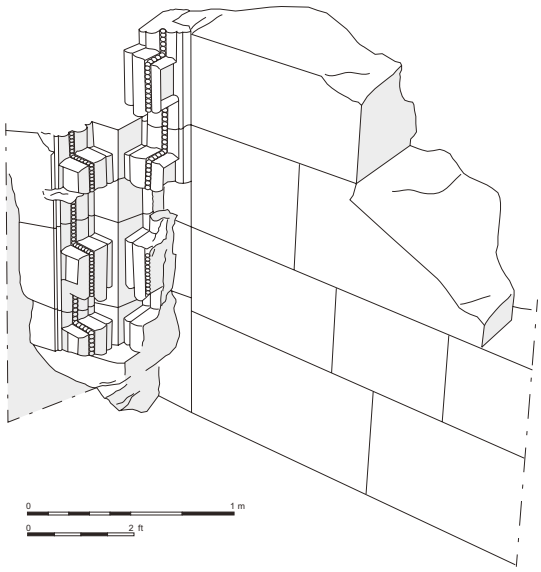
Illus. 3.3.1. St Albans Abbey, chapter house interior, showing the plinths and only surviving base of the north jamb of the west door, and the interior of the north-west angle.



Illus. 3.3.2. St Albans Abbey, chapter house, interior of the north-west angle.

corresponding position on the left side of the opening. At a slightly higher level the base and bottom courses of yet another carved jamb were also found adjoining the north and west internal walls of the building. This was enriched with an elaborate, three-dimensional chevron motif, the Vs of which contained leaves. These blocks rest on the bench on which the monks sat during chapter meetings. Their position appears to correspond to part of the plinth which presumably supported the outer order of the south aperture. If this reconstruction is correct, then the interior side of the openings in the west wall would have been monumental, with three lavish possibly continuous orders. By analogy with other examples, it must be assumed that the exterior faces of the openings and doorway were even more lavish.

Only one portion of carving survives on the external (west) side of the west wall (Illus. 3.3.3). This was enriched with beaded, mirror-image bands of fret ornament. The position of this vertical strip of ornament makes its original use uncertain. Was it perhaps the lower section of the continuous order of an arch which traversed the cloister walk? We know from the *Gesta Abbatum* that as well as rebuilding the chapter house, Abbot Robert reconstructed the cloister walk which lay in front of it. This arch might therefore have served to conceal the junction between the old and the new. Or was it the outer continuous order archivolt of the north aperture in the west wall of the chapter house? Portions of the north lateral wall of the chapter house were uncovered *in situ*, but these did not extend for more than five courses, not high enough to establish the decoration



Illus. 3.3.3. St Albans Abbey, chapter house, exterior, decorated pilaster on the exterior of the west wall of the chapter house marking the position of the north wall.

of the side walls. Analogies with other English chapter houses suggest that these walls were decorated with blind arcading.[9] The twelfth-century slype at St Albans was embellished with an elaborate intersecting blind arcade, carved with bobbin motif and delicate beaded foliage. A large number of fragments of this moulding were uncovered in the chapter house excavations,[10] so it is conceivable that its walls were enriched similarly to those of the slype.

Although it is impossible to reconstruct the decoration of the chapter house from the meagre surviving fragments, it is, nevertheless possible, to state that it consisted of two types of carving: on the one hand, semi-colonnettes carved with foliage and on the other, a geometric enrichment of great boldness applied to jambs. Such jambs and shafts came into use gradually in the first half of the twelfth century, although they appeared sporadically a little earlier, notably in Lombardy.[11] In England the fashion became widespread in the 1120s and 1130s, as can be demonstrated by such examples as, for instance, a decorated shaft from Reading Abbey (perhaps from the chapter house doorway), the doorways of Durham Cathedral, the monks' and prior's doorways at Ely, fragments of shafts from Crowland Abbey, and the shafts of the two doorways and the chancel arch of Shobdon Priory.[12] Nearer the middle of the twelfth century, richly carved shafts and jambs were made in Lincoln Cathedral and Wolvesey Palace in Winchester.[13] The most spectacular example in the development of this type of decoration was carried out *c.*1160 at Malmesbury Abbey, where the outer doorway of the south porch is enriched with eight continuous orders, all richly decorated with sculpture, three with figural and four with ornamental motifs, while the inner doorway has three orders, all continuous and purely ornamental.[14] In France, decorated shafts became popular after their extensive use in the doorways of Saint-Denis Abbey (1137–40), but there, they were employed side by side with column-figures and eventually these last became the exclusive enrichment of shafts.[15] While the foliage decoration of the St Albans shafts has parallels in other English works, it is most closely related not to stone sculpture but to mid twelfth-century St Albans illuminated manuscripts, most particularly the *Rabanus Maurus*, now in the British Library (Illus. 3.3.4).[16]

The prominence given to the geometric enrichment of jambs, which presumably continued onto the arches, was also as in the case of foliage decoration in keeping with general practice in England. The building on which a very complex 'confronted' chevron was used profusely just before the middle of the twelfth century is Lincoln Cathedral. It is perhaps not without significance that St Albans was (until 1845) within the diocese of Lincoln and, although relations between the abbots of St Albans and the bishops of Lincoln were not always friendly, there must have been some artistic contacts.[17] The immediate predecessor of Abbot Robert of Gorham and under whom Robert was prior, was Ralph Gubion (1146–57) who had previously been chaplain to Alexander, Bishop of Lincoln, the man responsible for the celebrated

[9] The chapter houses at Rochester, Much Wenlock, Christchurch in Oxford, and Bristol all had blind arcading on the lateral walls. For Rochester, see Hope 1900b, for Much Wenlock, Cranage 1922, for Christchurch, see Pevsner and Sherwood 1974, 123; for Bristol, see Pevsner 1958, 384–5. Wigram (1924, 38) suggested that the carving at the junction of the north and west walls of the chapter house (cf. Pl. IV), which was briefly revealed and recorded in 1877, formed an arcaded sedilia along the side walls of the chapter house, but this is unlikely as its position corresponds to that of a base on the south side of the north aperture (see text).

[10] See below, p. 149–50, 157–60.

[11] Early examples of carved colonnettes occur at Saint Abbondio, Como.

[12] For Reading Abbey, see Zarnecki *et al.* (eds) 1984, 171, entry 127s; for Durham, see Pevsner and Williamson 1983, 186–7, the date given here for the doorways is on the early side; for Ely, see Zamecki 1958; the Crowland fragments, now on loan to the Lincoln City Museum, are as yet unpublished; for Shobdon, see Zamecki 1951, 9–15. Columns decorated with geometric patterns were used even in Anglo-Saxon England as for instance in the Crypt of Repton in Derbyshire. Columns with geometric ornament were also used in some early post-Conquest buildings, though whether under the influence of pre-Conquest England or of Normandy is unclear: e.g. the shafts in Archbishop Lanfranc's dark entry at Canterbury. The incised geometric columns at Durham are perhaps the best known examples. On this subject, see Bony 1981, 89–92.

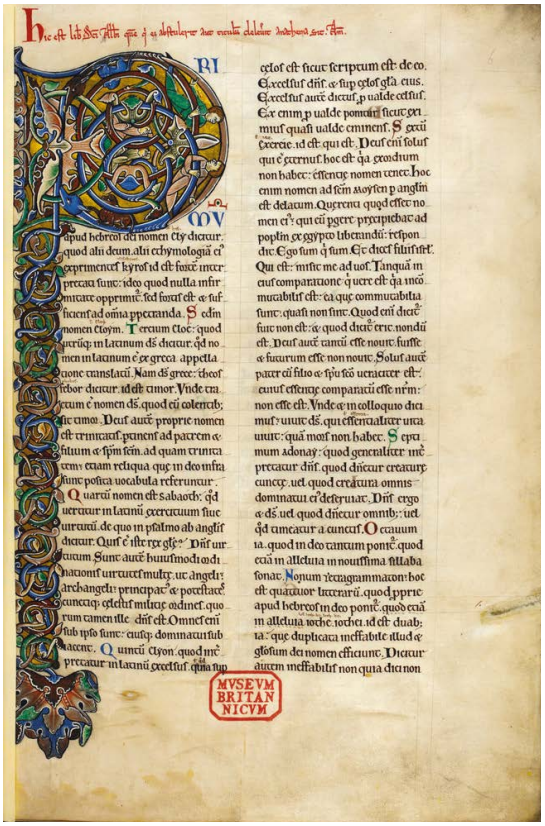
[13] For Lincoln, see Zarnecki 1970; for Wolvesey Palace, see Zarnecki *et al.* (eds) 1984, 183, entry 147 a–c.

[14] For Malmesbury, see Saxl 1954, 57–64.

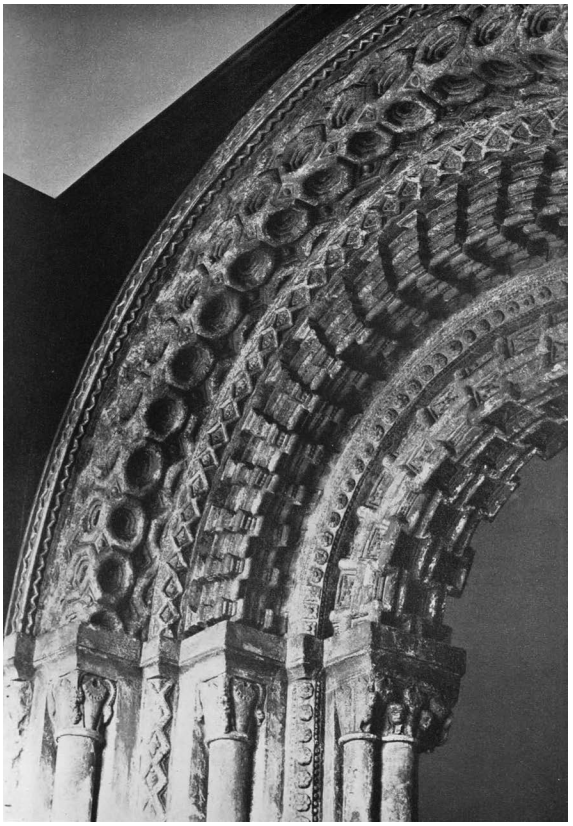
[15] For Saint Denis, see Crosby 1970. Kimata 1987 explores the use of carved colonnettes.

[16] See Cahn 1975, 187–8, Fig. 1. (MS. 12.C. XIV. esp. f. 6).

[17] For relations between St Albans and Lincoln during Robert's abbacy, see Rushbrook Williams 1917, 68–75.



Illus. 3.3.4. Rabanus Maurus (British Library, London, MS Royal, 12G. XIV, f. 6r).



Illus. 3.3.5. Durham Castle, Co. Durham, doorway *c.*1175–85 (as Stone 1955, Pl. 63).

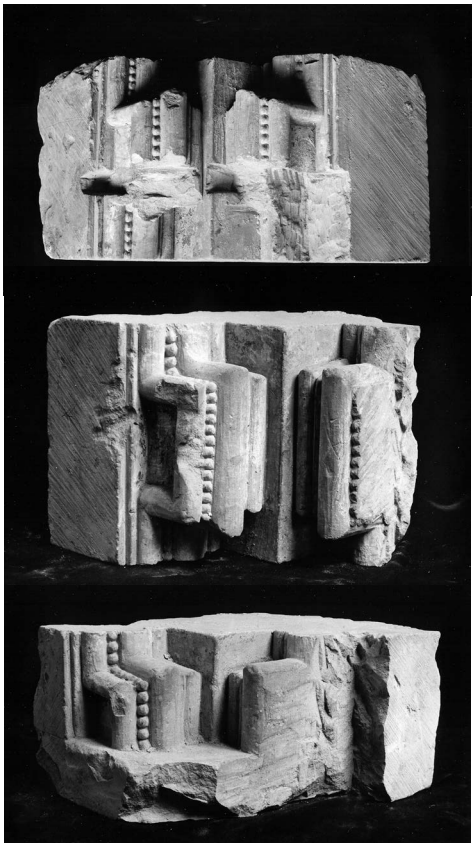
sculpture of the west front of his cathedral.[18] A very spectacular use of geometric patterns on the doorway of Durham Castle (*c.*1165) also has some similarities to the work at St Albans (Illus. 3.3.5).[19] As will be seen, a closely related geometric decoration to that used in the chapter house was employed both in the cloister and the slype.

In the analysis of Groups A–U that follows it is useful to refer to Table 3.3.1 which sets out the phasing of the Romanesque sculpture.

Group A. Jamb Type 1

RF 2131–3, Illus 3.3.6–8: confronted fret ornament from west face of west wall of chapter house and Illus. 3.3.3. *In situ* fragments *RF 2131–3*, the stones are carved with two evenly-spaced bands of beaded fret confront at the angle.

Numerous fragments of fret ornament were discovered during excavation: *RF 118*, *RF 739*, *RF 1034*, *RF 2025*, *RF 2029*, *RF 2030*, *RF 2033*, *RF 2066*, *RF 2082*, *RF 2087*, *RF 2088*, *RF 2091*, *RF 2278*, *RF 2320*. Double fret, *RF 3452–4*.



Illus 3.3.6–8. Group A Jamb Type 1. Confronted fret ornament from west face of west wall of chapter house.

[18] *Gesta Abbat.*, I, 375.

[19] The Durham doorway was the work of Bishop Hugh du Puiset, whose relations with St Albans must have been good since in 1171 he was invited to St Albans to dedicate a chapel to St Cuthbert, see *ibid.*, 190. For the doorway, see Stone 1955, 51, 96 and Pl. 63.



Illus. 3.3.9–3.3.11A–B (from top to bottom). Group B Jamb Type 2. Confronted chevron and foliage from the interior of the north side of the north opening of the chapter house.

Group B. Jamb Type 2

RF 2138–40, Illus 3.3.9–3.3.11A and B: confronted chevron and foliage from the interior of the north side of the north opening of the chapter house. See Illus 3.3.1–3.3.2.

In situ fragments: *RF 2138–40*. Two confronted, but not touching bands of beaded chevron face each other across an angle with a thin roll. The right-hand side has a foliage pattern of spiralling stalks and graceful trefoil leaves. The stalks are eroded, but one is still articulated with thin, grooved bands.

Fragments of varying type of chevron ornament were discovered during excavation: *RF 860*, *RF 2069*.

From the slype wall(?):

Chevron and ball ornament: *RF 3400–16*, *RF 3440*, and *RF 3459*.

Large chevron and roll: *RF 3469–72*

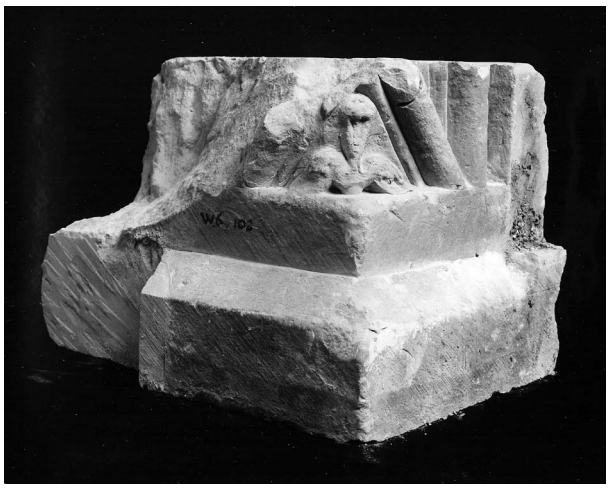
Chevron with geometric ornament: *RF 3457*

Small fragments: *RF 2063*

Group C. Jamb Type 3

RF 2136, Illus. 3.3.12: from the north-west angle of the chapter house.

In situ fragments: *RF 2136*. A complex pattern of angled chevron (union-jack motif (?), see semi-shaft fragment Type no. 1 (Group M)) each V filled with a leaf. *RF 2136* has a central vertical leaf with a cupped head, flanked by side leaves with bowed heads. The other chevron Vs



Illus. 3.3.12. Group C Jamb Type 3 from the north-west angle of the chapter house.

were filled with more stylized leaves. Closely related to semi-shaft Type no. l (Group M).

Other fragments: *RF 27–9*, *RF 2135*.

Two voussoirs possibly from the chapter house doorway (Illus. 3.3.13)

In 1965, during repairs in the grounds of Sopwell House Hotel on the outskirts of St Albans, two large voussoirs were revealed. These were carved with beaded medallions: the upper was filled with a prancing lion, whose long tail was curled up between his legs, and the lower had an incomplete foliage pattern with drill holes and beading. Dr Eileen Roberts argued that the fragments were of such high quality that they must have come from St Albans Abbey.[20] She recognized that they dated to Robert's abbacy and postulated that they were from a large processional doorway leading from the cloister into the south transept, or from the chapter house doorway; the latter is the more likely.

At the Dissolution, the chapter house at St Albans was demolished by Sir Richard Lee.[21] According to Dr Roberts's reconstruction, the voussoirs came from an arch that measured roughly 2.28 m across its internal opening,[22] which comes sufficiently close to the width of the chapter house doorway as revealed by the excavation, namely 2.44 m.[23]

Grand doorways with archivolts enriched with medallions appear to have been relatively common in twelfth-century England. The western doorways of Durham Cathedral were similarly decorated as was the Prior's door at Ely Cathedral. At Malmesbury Abbey the fashion was taken almost to extreme: medallions containing figural scenes were arranged in several continuous orders on the doorway of the south porch.

Sculpture reused in a grave-shaft

The chapter house was a customary place for the burial of the most important members of the monastic community. A fifteenth-century record relates that the medieval tombs had images and epitaphs, so some of the Romanesque tombs may have been carved, a noteworthy point since few carved grave slabs or effigies of this period are known.[24] Certainly Abbot Robert was buried in a grave with his image on it, as the *Gesta Abbatum* records.[25]



Illus. 3.3.13. Sopwell House Hotel, voussoirs, found 1965 (Roberts 1983 Pl. LXXIX).

The last abbot to be buried in the chapter house, John de la Moot, died in 1401 and was buried in a stone built shaft immediately inside the chapter house doorway.[26] Many twelfth-century sculptures, figural, foliage, and geometric, were reused as lining for this grave. The question arises as to what twelfth-century carving would have been available for reuse in 1401.

As abbot between 1396 and 1401, John de la Moot rebuilt the cloister in front of the chapter house and the chapel of St Nicholas, both built originally by Abbot Robert of Gorham.[27] The documentary evidence thus presents the east cloister walk and the chapel of St Nicholas as strong candidates for the original provenance of the reused sculptures. That the fragments were produced at the time Abbot Robert governed the monastery is clear, for the geometric and foliage ornament is of the same type as the sculpture discovered *in situ* in Abbot Robert's chapter house. Many pieces found in the grave retain traces of pigment and this suggests that they came from an internal position, most likely the section of the cloister in front of the chapter house.[28]

[20] Roberts 1983. The voussoirs are now in the Verulamium Museum, St Albans.
[21] Wigram 1924, 38.
[22] Roberts 1972c, 190.
[23] See e.g. Illus. 3.3.3.
[24] Panofsky 1964.
[25] *Gesta Abbat.,* I, p. 182.

[26] See below, p. 336–344.
[27] *Gesta Abbat.*, III, p. 442.
[28] See pigment analysis below, p. 174–80. Some fragments were shown in an exhibition at St Albans Cathedral in 1982. Five pieces were exhibited in 1984 in *English Romanesque Art 1066-1200* (Zarnecki *et al.* (eds) 1984, 186–7, entry 152 a–e). See also see Kahn 1982.



Illus. 3.3.14A–C. Group D Figural fragment Type 1. Fragment of a standing apostle (?), 19 cm high: made up of *RF 2150–2*.

Group D. Figural fragment Type 1

RF 2150–2, Illus 3.3.14A–C: fragment of a standing apostle (?), 190 mm high. The head is missing and the stone is slightly chipped and abraded in places but the overall condition is good.

The figure is carved frontally, holding a closed book in his left hand and a mantle in his right. The cloak forms two loops, above and below the hand. The folds, carved with great precision, are of two types: nested-V and dam fold. The hem of the robe is flared and hangs in soft, rippling folds about the bare feet. The feet, pointing downward, rest above a slender beaded band. Adjoining the left shoulder is the forearm of a similarly positioned figure.

The piece has a flat bottom, 140 mm in diameter. In addition to the two figures mentioned above, there are two other fragments probably from the same object: *RF 2157* consists of one complete foot and the toe of a second, and *RF 2153* has 45 mm of moulding and beading. The complete figure appears to have been free-standing and circular, decorated with a series of standing figures above a beaded band. The nearly complete figure is carved with its body angled so that it leans out, away from the circular base. This might suggest a small free-standing capital, with a beaded necking. The object would thus have been similar to the



Illus. 3.3.15. The Dover Bible (Cambridge, Corpus Christi College, MS. 4, detail of f. 244r).



Illus. 3.3.16A–C. Group E Type 2 figural fragment *RF 2154–5*.

capital now in the Winchester City Museum, with eight nimbed figures holding books, seated under an arcade, their feet resting on the necking.[29] But the tilt of the St Albans figures is possibly too slight for this. Another possibility is that the fragments came from a piece of furniture which was considered old-fashioned and was destroyed, possibly the lectern. In every chapter house there was a lectern on which rested a necrology, from which the names of benefactors were read daily.

The drapery is rich and varied. Crisp nested V-folds decorate the chest and the right-hand side of the figure; teardrop, damp-fold enclosures cover the legs. Both these fold types and the slightly flared hem are similar to those of the *Dover Bible* (*c.*1150–60) (Illus. 3.3.15).[30] Pigment: the figure stands against a red background, the feet against brown. The moulding is blue, and the cloak white.

Group E. Figural fragment Type 2

RF 2154–5, Illus 3.3.16A–C: fragment of running (?) figure V, 180 mm high. The head and lower legs and arms are missing but the condition of the drapery is very good.

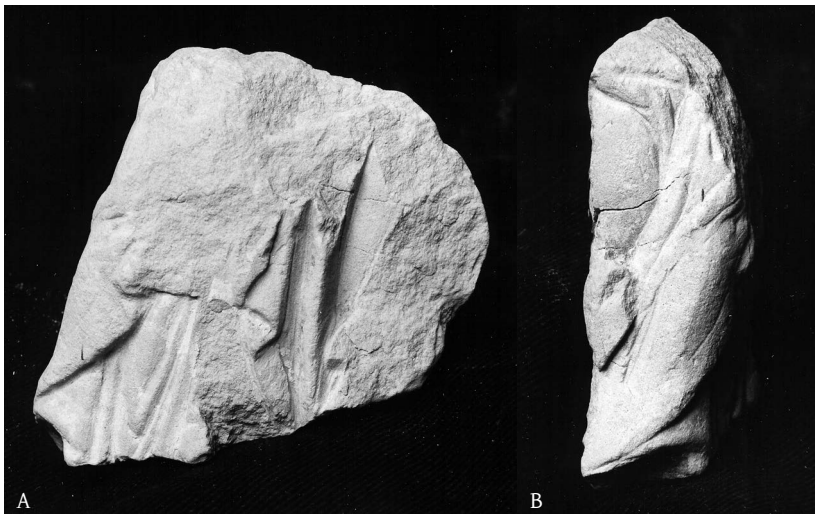
This magnificent figure is carved as if running, springing off its left leg and landing on its right, which is bent at the knee. The drapery is carved as if responding to the movement. At the back, the shoulders and buttocks are ringed by raised drapery folds, while pleated folds swing forward with the movement of the right leg. On the chest, there are four segmental folds.

In monumental sculpture this type of fold was fully exploited in the monumental figure sculpture at Malmesbury. Stalley aptly described the drapery of this St Albans figure as heralding the forms of the St Nicholas crozier in the Victoria and Albert Museum.[31]

The style of the drapery is perhaps closest to that in the famous mid-twelfth-century St Albans Terence manuscript. On folio 47r (Illus. 3.2.23), for instance, the back of a figure entering an arch corresponds closely to the St Albans fragment.[32] There is little evidence as for the type of object to which this figure belonged. The left-hand side of the figure was the only section attached. It was perhaps broken off a small capital lectern or a carved order of a doorway of the type that survives at Malmesbury Abbey.

Pigment: On the lower E only, red background, blue drapery.

[29] Zarnecki *et al.* (eds) 1984, 163, Entry 119.
[30] Dodwell 1954, 48–59; Zarnecki 1981.
[31] Stalley 1984.
[32] Zarnecki *et al.* (eds) 1984, 117, Entry 56; Jones and Morey 1931.



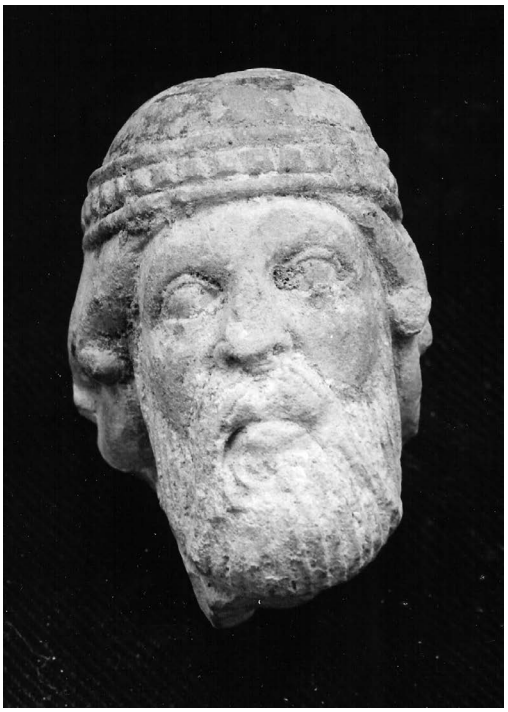
Illus. 3.3.17A–B. Group F Type 3 figural fragments *RF 119*.



Illus. 3.3.18. Group F Type 3 figural fragments *RF 2158*.



Illus. 3.3.19. Group F Type 3 figural fragments *RF 2175*.



Illus. 3.3.20. Group G Type 4 figural fragments *RF 2149*.

Group F. Figural fragments Type 3

RF 119, Illus 3.3.17A–B and *RF 2158* and *RF 2175*, Illus 3.3.18 and 3.3.19

Lower part of a figure with V-shaped folds. 100 mm: *RF 119*

Fragment with damp-fold. 90 mm: *RF 2158*

Fragment with V-folds. 80 mm: *RF 2175*

Fragment with parallel folds adjoining plain surface. 120 mm: *RF 2156*

Fragment of a cap (?). Brown pigment. 40 mm: *RF 2186*

The type of fold and scale of the fragments are sufficiently in keeping with figural fragments no. 1 and 2 to suggest that they belonged to the same scheme.

Group G. Figural fragment Type 4

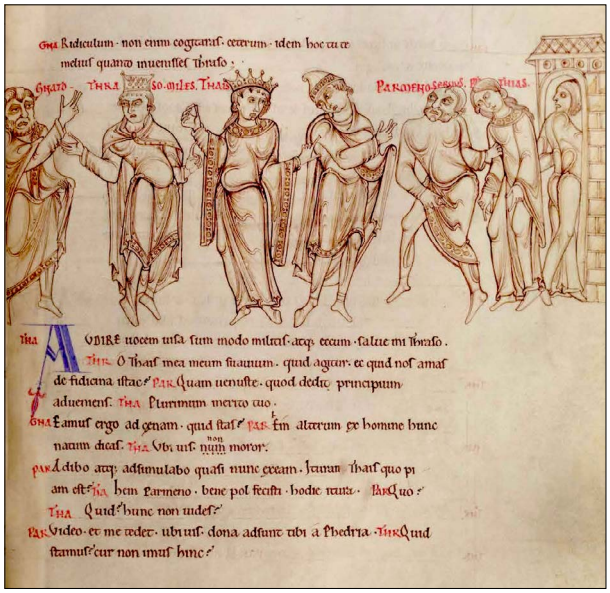
RF 2149, Illus. 3.3.20: prophet's (?) head, 55 mm high.

The head is in good condition, with slight abrasion. This beautiful head is frontal, carved so that it appears slightly tilted. The features are carved with great sensitivity and naturalism. The figure has a long beard and moustache and wears a diadem or cap, thus it may be a prophet.

Pigment: Brown cap, traces of red on the cheeks.



Illus. 3.3.21. Group H Type 5 figural fragments *RF 2148*.



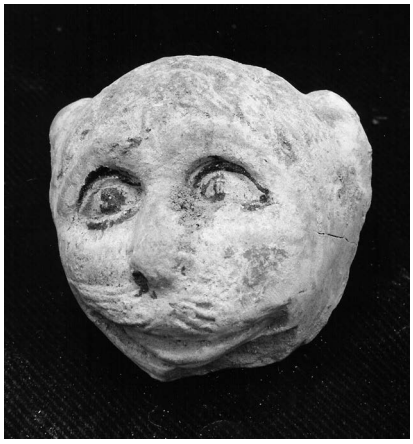
Illus. 3.3.22. The St Albans Terrence (Oxford, Bodleian Library, MS. Auct. F. 2.13, f. 47r).

Group H. Figural fragment Type 5

RF 2148, Illus. 3.3.21: King's head, 55 mm high.

The head is in good condition and is crowned and has short, centrally parted hair, a short grooved beard, an unusually small mouth, a prominent nose, and large eyes. It closely resembles certain heads in the St Albans Terence manuscript (Bodleian Library, Oxford, MS. Auct. f. 2.13), particularly the king's head on folio 47r, a manuscript already cited for the similarity of the drapery to that of Figural fragment 2 (Illus. 3.3.22).

Pigment: Eyes brown, lips red, red paint where head joined background.



Illus. 3.3.23. Group I Type 6 figural fragment *RF 2147*.

Group I. Figural fragment Type 6

RF 2147, Illus. 3.3.23: feline head showing tongue, 55 mm high.

The head is in quite good condition, but a crack is developing on the right-hand side. It is round with oval eyes, a smiling expression with its tongue stuck out and a small grooved moustache. Small round ears.

Pigment: White with brown eyes.



Illus. 3.3.24. Group J Type 7 figural fragment *RF 2003*.

Group J. Figural fragment Type 7

RF 2003, Illus. 3.3.24: feline head, 70 mm high.

The head has developed serious cracks since it was excavated. The right ear is missing. This cat's head is remarkably naturalistic. It is elegantly modelled with slanted almond-shaped eyes. The head is tooled with delicate scratch marks, and, under the nose, little holes as if for whiskers.



Illus. 3.3.25. Ivory cross, perhaps carved at St Albans, known as 'The Cloisters' or 'Bury St. Edmunds Cross', detail. Metropolitan Museum, New York, Acc. No. 63.12.

Sauerlander argued that the male heads are not contemporary with the torsos, but the evidence argues strongly against this view.[33] Manuscript illumination at St Albans during the abbacy of Robert's successor, Abbot Simon (1167–83), is populated by bland, stiff figures with fixed stares and hard expressions.[34] This style, which continued at St Albans until the end of the century, is far removed from that of the carved heads. It stretches credulity to postulate that torsos and heads carved on the same scale and found in the same pit are separated in date by some 30 years.

The small scale of the fragments suggests a relationship with such media as metalwork and ivories. Contemporary documents stress the high quality of objects in precious metal, particularly the treasured shrine of St Alban, made by Anketil and repaired in the later twelfth century.[35] In the earlier paper on these figures, attention was drawn to the similarity of particularly one head, that of a prophet (?), to the heads of prophets on the so-called Bury Cross (Illus. 3.3.25). Ursula Nilgen, after a careful re-examination of this cross, attributed it to St Albans and dated it to the years of Simon's abbacy. If this interesting attribution is accepted, it would further strengthen the links between the figural fragments and the superb ivory.[36]

[33] Sauerländer 1984.
[34] Cahn 1975, 187–230.
[35] Oman 1932. Two surviving Romanesque ivories can be attributed to St Albans with certainty. A pierced panel with foliage and a human figure, now in the British Museum, was excavated on the site of the infirmary in 1920 (King and Dalton 1922). The second, now also in the British Museum, is an ivory seal with an engraved intaglio figure of St Alban on one side and a three dimensional lion head on the other (Beckwith 1972, Entry 80). Beckwith's attributions to St Albans are much too generous, but see pp. 73–5 and 131–4.
[36] Nilgen 1985. See also Parker and Little 1992.

Group K. Semi-shaft fragments, Type 1

RF 2201, *RF 2207*, *RF 2221–2*, *RF 2224*, Illus 3.3.26–3.3.29: union-jack motif, diameter 160 mm.

The decoration consists of a union-jack motif composed of slender bands in relief, flanked by rows of beading. Alternate side Vs were filled with foliage (*RF 2221–2*). At intervals the motif appears to have been banded with a horizontal collar of addorsed fan leaves with bowed heads (*RF 2224*). The motif is very closely related to Group C.

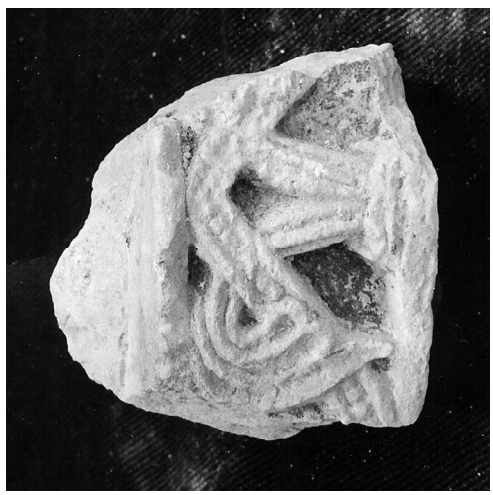
Main pieces: *RF 2221–2* and *RF 2224*.

Related fragments: *RF 2201*, *RF 2207*, *RF 2235*, *RF 2246*, *RF 2263*.

Also related: 'slype' wall-fragment *RF 3478* – a voussoir.

Pigment: *RF 2221–2*, rolls red, white, or blue, foliage and beading black. *RF 2224* white leaves on red background.





Illus 3.3.26–27. Group K Type 1 semi-shaft fragments *RF 2201*, *2207*, *2221–2*, *2224*.





Illus 3.3.28–29. Group K Type 1 semi-shaft fragments *RF 2201*, *2207*, *2221–2*, *2224*.





Group L. Semi-shaft fragments, Type 2

RF 2227, *RF 2228*, *RF 2229*, *RF 2230*, *RF 2241*, Illus 3.3.30–3.3.34: fan-orchid leaves A.

The partial profile of one piece remains. The carved side was curved. The back was plain, one side flat, and another too damaged to know.

The decoration consisted of continuous beaded stalks arranged in an undulating pattern. Where the stalks meet they are joined by horizontal beaded bands. The oval shapes where the bands are parted are filled with 'fan-orchid leaves'. Other leaf types emerge above the horizontal clasps; leaves with beaded stalks and curled trefoil-headed leaves and beaded stalks with spiral tips. One piece had a necking clasp as on semi-shaft Type no. 1.



Illus 3.3.30–32. Group L Type 2 semi-shaft fragments *RF 2227*, *2228*, *2229*, *2230*, *2241*.





Illus 3.3.33–34. Group L Type 2 semi-shaft fragments *RF 2227*, *2228*, *2229*, *2230*, *2241*.

Main fragments: *RF 2227*, *RF 2228* joined with *RF 2230*, *RF 2229*.

Related pieces: *RF 2203*, *RF 2209–10*, *RF 2230*, *RF 2241*.

Pigment: Brown background, a little red or black.

Group M. Semi-shaft fragment, Type 3a

RF 2212, *RF 2204–6*. Illus 3.3.35–3.3.36. Interface and leaves, diameter V

The motif consists of two central beaded stalks arranged in a figure 8 pattern. Threaded through these are curved beaded stalks with trefoil and island leaves containing beaded fruits.

Main fragments: *RF 2204*, joins to *RF 2206*.

Related pieces: *RF 2208*, *RF 2212–3*.

Related voussoir: *RF 3491* reused in 'slype' wall.





Illus 3.3.35–36. Group M Type 3a semi-shaft fragments *RF 2204*, *2206*, *2212*.



Illus. 3.3.37. Group N Type 3b semi-shaft fragments *RF 2240*.

Group N. Semi-shaft fragment, Type 3b

RF 2240, Illus. 3.3.37: Interface and leaves.

Too fragmentary for measurements. As Type 3a but the central stalks form a criss-cross, not a figure 8 pattern.

Main fragments: *RF 2200* and *RF 2240*.



Illus 3.3.38–39. Group O Type 4 semi-shaft fragments *RF 2226*, *2238*, *2231*.

Group O. Semi-shaft (?) Type 4

RF 2226, *RF 2238*, *RF 2231*, Illus 3.3.38–3.3.39: Circle and lozenge interlace

Partial profile remains. The carved side was curved, the back was plain, one side flat, and the other too damaged to know. The decoration consists of a row of circles with raised veins and an interwoven pattern of criss-cross beaded motif.

Main fragments: *RF 2225–6*, *RF 2231*, *RF 2238*.

Related pieces: *RF 1785*, *RF 2100*, *RF 2106–7*, *RF 2197*, *RF 2202*, *RF 2223*.



Illus. 3.3.40. Group P Shaft fragment *RF 3003*.

Group P. Shaft fragment

RF 3003, Illus. 3.3.40: 310 mm diameter

The fragment was found outside the north transept. The material differs from that found in excavation. It is more porous with large fragments of shell. The fragmentary shaft is carved with twisted bands of bead.

Group Q. Bobbin arcading and decorative strips

RF 2011, *RF 2067*, *RF 2126*, *RF 2411*, Illus 3.3.41–3.3.44.

Engravings of the twelfth-century slype, before it was dismantled by Grimthorpe, show a variant of this motif *in situ* (Illus. 2.4.4). It was used as a blind arcade with bobbin motif and hood-like strips of foliage ornament. The latter consists of semi-circular centres issuing a pair of leaves and a pair of beaded stalks. The beaded stalks intersect beaded arcs which enclose the design.

Numerous fragments were discovered; the majority have foliage without bobbin motif. No fragments were found lining the grave-shaft, so they may have come from the twelfth-century chapter house. If so, there is a possibility that they were used on the lateral walls there as in the slype. A blind arcade in this position would be consistent with that of other English chapter houses of the third quarter of the twelfth century.

Bobbin ornament was popular in several regions in England, in major buildings, e.g. Ely Cathedral and in rural churches particularly in East Anglia. The motif also occurs in a number of buildings in the region of St Albans, as for instance on the west front of Dunstable Priory, at Anstey (Hertfordshire) and Horton (Buckinghamshire). It may have derived from lathe turned wooden posts and rails used in medieval and even Roman wooden furniture.

1. Fragments with bobbin and foliage: *RF 2067* (*RF 2411* found loose in the abbey – originally from slype?).

2. Fragments with bobbin: *RF 2054*, *RF 2128*.

3. Fragments with foliage: *RF 2009*, *RF 2011*, *RF 2044*, *RF 2055*, *RF 2073*, *RF 2077–8*.

4. Fragments with foliage and rocking chisel on the upper edge: *RF 1657*, *RF 2008*, *RF 2036.1–2*, *RF 2086*, *RF 2126*.







Illus 3.3.41–44. Group Q Bobbin arcading and decorative strips *RF 2011*, *2067*, *2126*, *2411*.





Illus 3.3.45–46. Group R Voussoirs *RF 2220*, *2234*, *2217*.

Group R. Voussoirs

RF 2217, RF 2220, and RF 2234, Illus 3.3.45–3.3.46: Twisted bands of beading. Diameter 130 mm.

The pieces are carved with slender rolls, flanked by beading which twist around the pieces.

Main fragments: *RF 2159*, *RF 2217*, joined to *RF 2234*, *RF 2220*.

Related sections of shaft and arch: *RF 2232–3*, *RF 2246*, *RF 2254*, *RF 2256*, *RF 2262*, *RF 2267*, *RF 2272*.

Pigment: traces of red on some fragments, especially *RF 2262*.



Illus. 3.3.47. Group S Section of an arch *RF 2024*.

Group S. Section of an arch

RF 2024, Illus. 3.3.47.

Inner curve 170 mm

Outer curve 310 mm

Height 165 mm

The upper rim of the stone is simply moulded. The lower part has a twisted ribbon motif, grooved and with deeply drilled holes. In the wide downward curve of the ribbon, a large circle again with deep drilled beading. Within this is a leaf, boldly carved, with a cupped head and beading. Beneath the circle are beaded stalks with twisted trefoil tips.

Group T. Foliage fragments

RF 30, *RF 2017*, *RF 2052*, *RF 2060*, *RF 2177–8*, *RF 2183–5*, *RF 2187*, *RF 2192–3*, Illus 3.3.48–3.3.55.

a) Veined stem with trefoil leaf: *RF 2194*.

b) Beaded stalks, trefoil leaves with spiral tips and part of an island leaf: *RF 2192–3*.

c) Cupped leaf: *RF 2195*.

d) Trefoil leaf with curled head: *RF 2183*, *RF 2185*.

e) Veined stems: *RF 2174*, *RF 2197*.

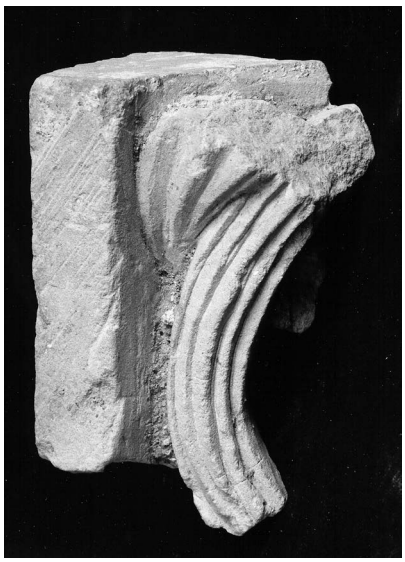
f) Narrow band of beading from which a tri-lobed leaf emerges: *RF 2187*.

g) Curled trefoil leaf with beaded band: *RF 2177–8*.

h) Central disc with drilled beading from which emerge spikey leaves contained by a drilled beaded circle: *RF 30*.

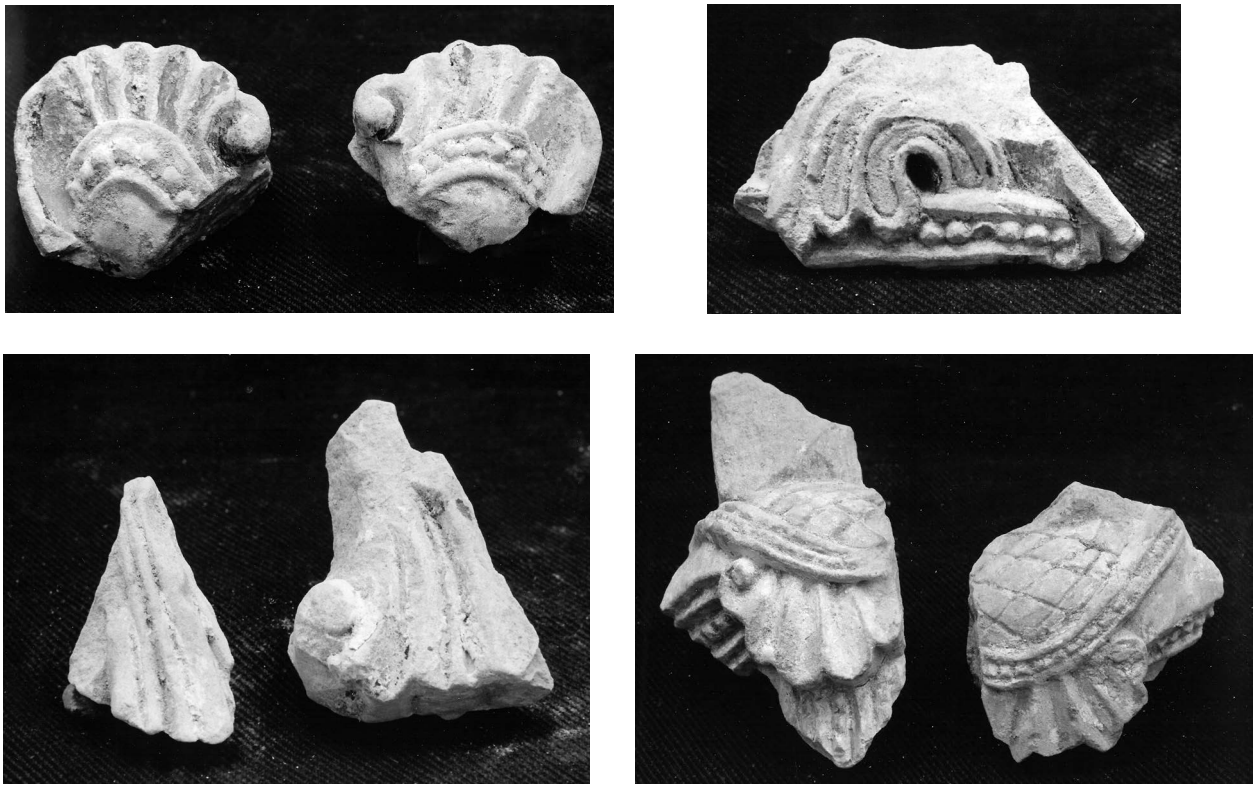




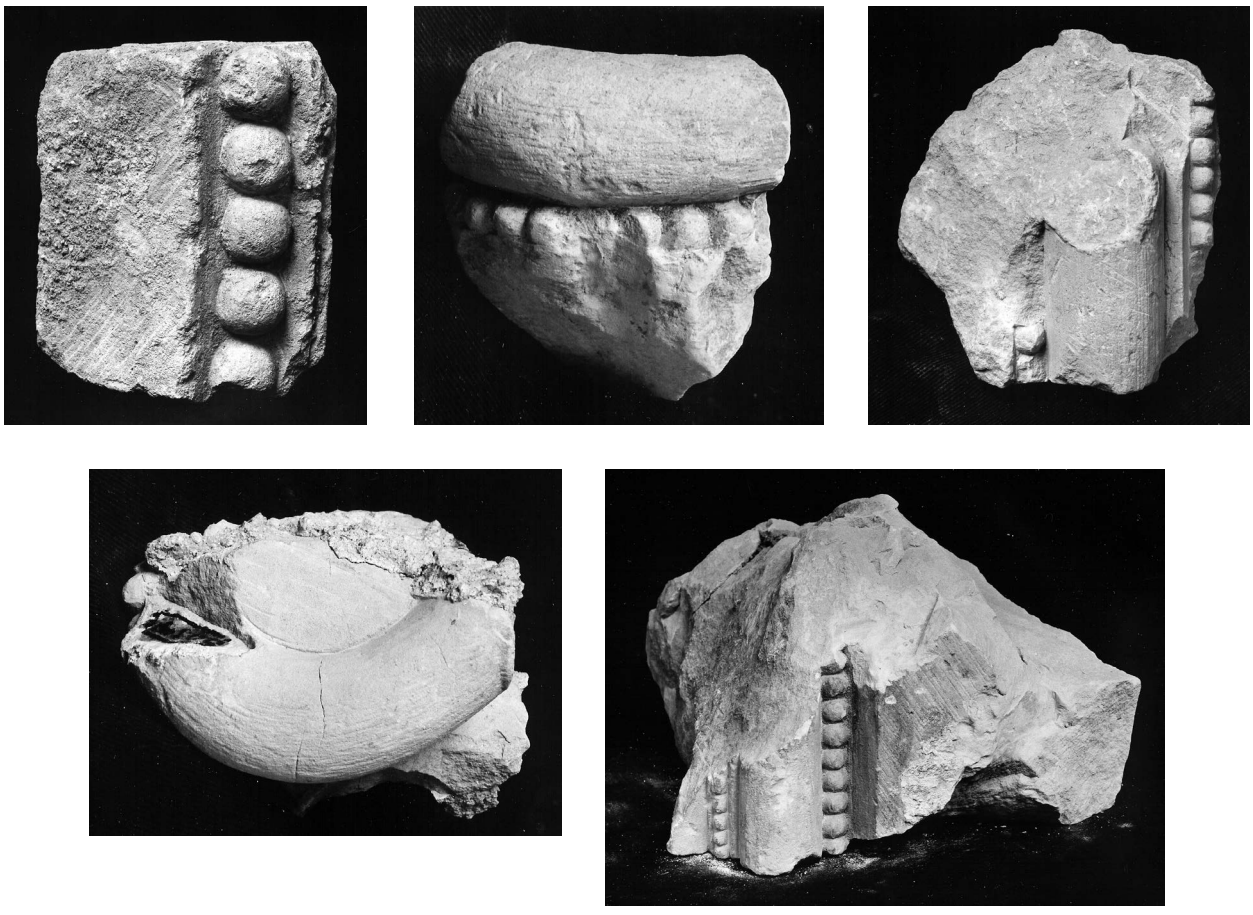




Illus 3.3.48–51. Group T Foliage fragments *RF 30*, *2017*, *2052*, *2060*.



Illus 3.3.52–55. Group T Foliage fragments *RF 2177–8*, *2183–5*, *2187*, *2192–3.*



Illus 3.3.56–60. Group U Miscellaneous moulded stones *RF 863*, *2014*, *2041*, *2125*

i) Thin decorative strips with an upper row of beading and beneath arcs with beading separated by trefoil leaves and a beaded central lobe: *RF 2015*, *RF 2060*.

j) Vesica-shaped stem with leaf: *RF 1754*.

k) Fragment of veined interface with plain upper edge: *RF 2052*.

1) Leaf fragment: *RF 1779*, *RF 2098*.

m) Addorsed snail shapes: *RF 2017*.

n) Stalks and leaves: *RF 1411*, *RF 1753*, *RF 1785*, *RF 2016*, *RF 2018*, *RF 2031*, *RF 2047*, *RF 2100*, *RF 2104*, *RF 2107*, *RF 2113*, *RF 2505*.

o) Beaded stalk and trefoil leaf tip: *RF 2259*.

p) Veined stalks and leaves: *RF 2210*.

Group U. Miscellaneous moulded stones

RF 863, *RF 2014*, *RF 2039*, *RF 2041*, *RF 2125*, Illus 3.3.56–3.3.60

Plain impost or plinth: *RF 2323*.

Amulet-like stone with beading: *RF 2014*, *RF 2041*.

Fragments with small roll and beading: *RF 2245*, *RF 2253*, *RF 2257*.

Miscellaneous beaded fragments: *RF 863*, *RF 1327*, *RF 2039*, *RF 2061*, *RF 2083*, *RF 2092*, *RF 2099*, *RF 2110–11*, *RF 2116*, *RF 2125*, *RF 2503*.

Table 3.3.1. The Romanesque sculpture: the phasing of the five groups of fragments

1. 'Wall 6 group': from the west wall of the chapter house built by Robert of Gorham (1151–66)

Group	F.ph.	F.ph. date	P.ph.	RF	Tr. and layer
A	17	1154/9–?	21	2131	1, 300, W. 6
A	17	1154/9–?	21	2132	1, 300, W. 6
A	17	1154/9–?	21	2133	1, 300, W. 6
B	17	1154/9–?	21	2138	1, 300, W. 6
B	17	1154/9–?	21	2139	1, 300, W. 6
B	17	1154/9–?	21	2140	1, 300, W. 6
C	17	1154/9–?	21	2135	1, 300, W. 6
C	17	1154/9–?	21	2136	1, 300, W. 6

2. 'De la Moot group': from the mortared rubble lining of G. 13, the burial of John de la Moot (d.1402)

Group	F.ph.	F.ph. date	P.ph.	RF	Tr. and layer
A	27	1396–1402	52	2278	1, 531, G. 13
D	27	1396–1402	52	2150	1, 531, G. 13
D	27	1396–1402	52	2151	1, 531, G. 13
D	27	1396–1402	52	2152	1, 531, G. 13
D	27	1396–1402	52	2153	1, 531, G. 13
D	27	1396–1402	52	2157	1, 531, G. 13
E	27	1396–1402	52	2154	1, 531, G. 13
E	27	1396–1402	52	2155	I, 531, G. 13
F	27	1396–1402	52	2156	1, 531, G. 13
F	27	1396–1402	52	2158	1, 531, G. 13

Group	F.ph.	F.ph. date	P.ph.	RF	Tr. and layer
F	27	1396–1402	52	2175	1, 531, G. 13
F	27	1396–1402	52	2186	1, 531, G. 13
G	27	1396–1402	52	2149	1, 531, G. 13
H	27	1396–1402	52	2148	1, 531, G. 13
I	27	1396–1402	52	2147	1, 531, G. 13
K	27	1396–1402	52	2201	1, 531, G. 13
K	27	1396–1402	52	2207	1, 531, G. 13
K	27	1396–1402	52	2221	1, 531, G. 13
K	27	1396–1402	52	2222	1, 531, G. 13
K	27	1396–1402	52	2224	1, 531, G. 13
K	27	1396–1402	52	2235	1, 531, G. 13
K	27	1396–1402	52	2246	1, 531, G. 13
K	27	1396–1402	52	2263	1, 531, G. 13
L	27	1396–1402	52	2203	1, 531, G. 13
L	27	1396–1402	52	2209	1, 531, G. 13
L	27	1396–1402	52	2210	1, 531, G. 13
L	27	1396–1402	52	2227	1, 531, G. 13
L	27	1396–1402	52	2228	1, 531, G. 13
L	27	1396–1402	52	2229	1, 531, G. 13
L	27	1396–1402	52	2230	1, 531, G. 13
L	27	1396–1402	52	2241	1, 531, G. 13
M	27	1396–1402	52	2204	1, 531, G. 13
M	27	1396–1402	52	2206	1, 531, G. 13
M	27	1396–1402	52	2208	1, 531, G. 13
M	27	1396–1402	52	2212	1, 531, G. 13
M	27	1396–1402	52	2213	1, 531, G. 13
N	27	1396–1402	52	2200	1, 531, G. 13
N	27	1396–1402	52	2240	1, 531, G. 13
O	27	1396–1402	52	2197	1, 531, G. 13
O	27	1396–1402	52	2202	1, 531, G. 13
O	27	1396–1402	52	2223	1, 531, G. 13
O	27	1396–1402	52	2225	1, 531, G. 13
O	27	1396–1402	52	2226	1, 531, G. 13
O	27	1396–1402	52	2231	1, 531, G. 13
O	27	1396–1402	52	2238	1, 531, G. 13
R	27	1396–1402	52	2159	1, 531, G. 13
R	27	1396–1402	52	2217	1, 531, G. 13
R	27	1396–1402	52	2220	1, 531, G. 13
R	27	1396–1402	52	2232	1, 531, G. 13
R	27	1396–1402	52	2233	1, 531, G. 13
R	27	1396–1402	52	2234	1, 531, G. 13

Group	F.ph.	F.ph. date	P.ph.	RF	Tr. and layer
R	27	1396–1402	52	2246	1, 531, G. 13
R	27	1396–1402	52	2254	1, 531, G. 13
R	27	1396–1402	52	2256	1, 531, G. 13
R	27	1396–1402	52	2262	1, 531, G. 13
R	27	1396–1402	52	2267	1, 531, G. 13
R	27	1396–1402	52	2272	1, 531, G. 13
T	27	1396–1402	52	2174	1, 531, G. 13
T	27	1396–1402	52	2177	1, 531, G. 13
T	27	1396–1402	52	2178	1, 531, G. 13
T	27	1396–1402	52	2183	1, 531, G. 13
T	27	1396–1402	52	2185	1, 531, G. 13
T	27	1396–1402	52	2187	1, 531, G. 13
T	27	1396–1402	52	2192	1, 531, G. 13
T	27	1396–1402	52	2193	1, 531, G. 13
T	27	1396–1402	52	2194	1, 531, G. 13
T	27	1396–1402	52	2195	1, 531, G. 13
T	27	1396–1402	52	2197	1, 531, G. 13
T	27	1396–1402	52	2210	1, 531, G. 13
T	27	1396–1402	52	2259	1, 531, G. 13
U	27	1396–1402	52	2245	1, 531, G. 13
U	27	1396–1402	52	2253	1, 531, G. 13
U	27	1396–1402	52	2257	1, 531, G. 13

3. Stratified (other than Group 1, the 'Wall 6 group', and Group 2, the 'de la Moot group')

Group	F.ph.	F.ph. date	P.ph.	RF	Tr. and layer
A	33–5	1600–*c.*1750	62	118	1, 196
A	35	*c.*1725–*c.*1750	65	2025	1, 139
A	35	*c.*1725–*c.*1750	65	2029	1, 170
A	35	*c.*1725–*c.*1750	65	2030	1, 139
A	35	*c.*1725–*c.*1750	65	2033	1, 139
A	35	*c.*1725–*c.*1750	65	2082	1, 150
A	35	*c.*1725–*c.*1750	65	2088	1, 150
A	35	*c.*1725–*c.*1750	65	2320	1, 153
A	38	1850–80	76	2091	1, 134
A	39	1880–1900	85	2087	1, 141
A	43	1940–60	440	1034	2, 27
A	44	1960–70	108	2066	1, 68
B	19–20	(between 1154/9 and 1166) ?–83	179	860	2, 540, W. 24
B	42	1937–40	101	2069	1, 98
B	37B	1800–50	69B	2063	1, 269, F. 339
C	38	1850–80	76	29	1, W. 1
C	44	1960–70	108	27	1, 68

Group	F.ph.	F.ph. date	P.ph.	RF	Tr. and layer
F	33–5	1600–*c*.1750	62	119	1, 196
J	31	1539–*c*.1550	579	2003	3, 302
O	32–3	*c*.1550–1650	262	2100	2, 532
O	35	*c*.1725–*c*.1750	65	1785	1, 153
O	38	1850–80	76	2107	1, 134
O	39–40	1880–1920	87	2106	1, 142
Q	31	1539–*c*.1550	579	1657	3, 295
Q	31	1539–*c*.1550	579	2009	3, 303
Q	31	1539–*c*.1550	579	2011	3, 332
Q	31	1539–*c*.1550	579	2008	3, 303
Q	31	1539–*c*.1550	579	2054	3, 331
Q	32–3	*c*.1550–1650	262	2128	2, 532
Q	34	1650–*c*.1725	267	2126	2, 346
Q	35	*c*.1725–*c*.1750	257	2044	2, 485
Q	35	*c*.1725–*c*.1750	257	2073	2, 304
Q	35	*c*.1725–*c*.1750	258	2067	2, 288
Q	35	*c*.1725–*c*.1750	269	2078	2, 331
Q	35–6	*c*.1725–*c*.1775	589	2086	3, 258
Q	37A	*c*.1775–1800	605	2077	3, 221
Q	37A	*c*.1775–1800	718	2055	4, 167
S	31	1539–*c*.1550	711	2024	4, 99
T	23–4	1214–*c*.1300	513	2060	3, 645, F. 523
T	32–3	*c*.1550–1650	262	2016	2, 532
T	32–3	*c*.1550–1650	262	2017	2, 532
T	32–3	*c*.1550–1650	262	2018	2, 532
T	32–3	*c*.1550–1650	262	2098	2, 532
T	32–3	*c*.1550–1650	262	2100	2, 532
T	34	1650–*c*.1725	267	1779	2, 346
T	33–5	1600–*c*.1750	62	30	1, 136
T	33–5	1600–*c*.1750	62	2052	1, 196
T	35	*c*.1725–*c*.1750	65	1754	1, 153
T	35	*c*.1725–*c*.1750	65	1785	1, 153
T	35	*c*.1725–*c*.1750	65	2031	1, 139
T	35	*c*.1725–*c*.1750	65	2104	1, 153
T	35	*c*.1725–*c*.1750	591	2015	3, 341
T	36	*c*.1750–*c*.1775	261	2047	2, 608
T	36–7A	*c*.1750–1800	294	2113	2, 462
T	37B	1800–50	351	1411	2, 137, F. 124
T	38	1850–80	76	2107	1, 134
T	40	1900–20	89	1753	1, 152
T	46	1978–82	487	2505	W. 14

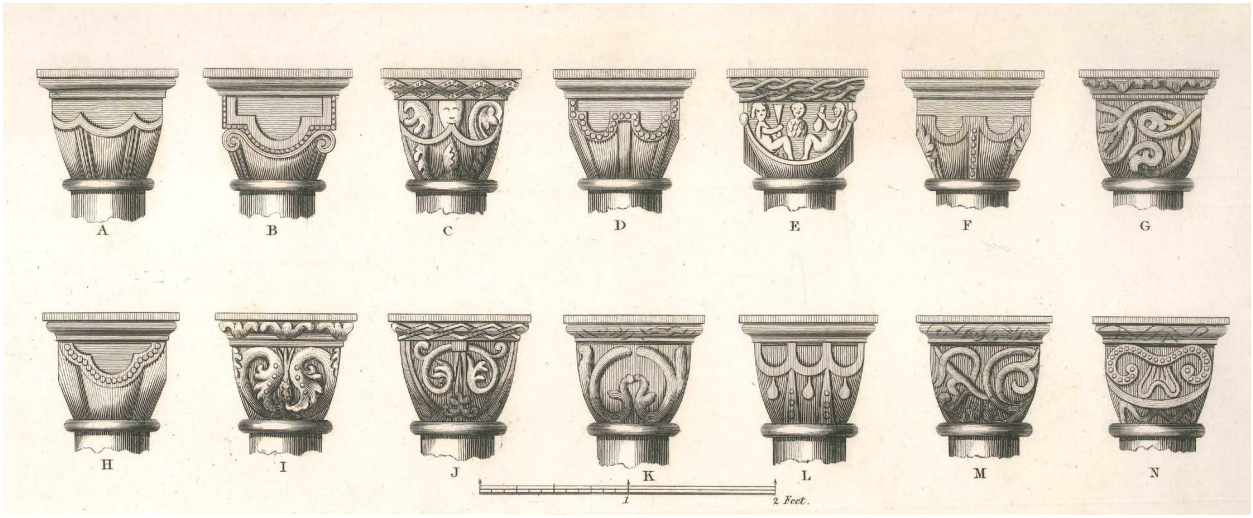
Group	F.ph.	F.ph. date	P.ph.	RF	Tr. and layer
U	19–20	(between 1154/9 and 1166) ?–83	179	863	2, 540, W. 24
U	32–3	*c.*1550–1650	262	2099	2, 532
U	35	*c.*1725–*c.*1750	65	2014	1, 169
U	35	*c.*1725–*c.*1750	65	2092	1, 150
U	35	*c.*1725–*c.*1750	65	2111	1, 139
U	35	*c.*1725–*c.*1750	65	2125	1, 139
U	35–6	*c.*1725–*c.*1775	589	2116	3, 293
U	36	*c.*1750–*c.*1775	302	2039	2, 659
U	37B	1800–50	69B	2061	1, 269, F. 339
U	39	1880–1900	85	2110	1, 141
U	39–40	1880–1920	87	2083	1, 142
U	44	1960–70	108	1327	1, 68

4. 'Slype wall group'

Group	F.ph.	F.ph. date	P.ph.	RF	Tr. and layer
A	-	-	-	3452	Slype wall
A	-	-	-	3453	Slype wall
A	-	-	-	3454	Slype wall
B	-	-	-	3400–3416	Slype wall
B	-	-	-	3459	Slype wall
B	-	-	-	3440	Slype wall
B	-	-	-	3469–3472	Slype wall
B	-	-	-	3457	Slype wall
K	-	-	-	3478	Slype wall
M	-	-	-	3491	Slype wall

5. Unstratified group

Group	F.ph.	F.ph. date	P.ph.	RF	Tr. and layer
A	-	-	-	739	u/s
P	-	-	-	3003	u/s
Q	-	-	-	2036.1	u/s
Q	-	-	-	2036.2	u/s
Q	-	-	-	2411	Door stop in N. trans.
U	-	-	-	2041	u/s
U	-	-	-	2323	u/s
U	-	-	-	2503	u/s



Illus. 3.3.61. St Albans Abbey, the capitals in the slype (Carter 1813, Pl. XIX).

The Capitals of the South Transept Arcade

The capitals, which form part of a blind arcade on the south wall of the south transept, just over three metres above ground-level, are not in their original position. The arcade was set up during the 1885–7 restoration of the south transept by Lord Grimthorpe reusing the original Romanesque material chiefly, but not exclusively, from the adjoining slype, which he dismantled.[37] This restoration prompted *The Builder* to comment that 'there is not another civilized country in which such a thing would be possible'.[38] *The Builder* objected to the demolition of a Norman turret and the slype.[39] The old slype was in a dilapidated condition and Grimthorpe replaced it by a new structure into which he incorporated the blind arcade saved from the old slype as well as 'a large quantity of architectural fragments, promiscuously built into the wall, those in the south-east corner come from the Chapter House'.[40]

In 1799, John Carter made measured drawings of the abbey church,[41] and from his plan of the slype, it can be deduced that in each arcade of the long walls there were originally ten capitals, including two angle capitals (Illus. 3.3.61). Thus, when the slype was demolished in 1885, 16 capitals carved on three faces and four angle capitals carved only on two should have been available for reuse. However, we know from old views of the slype that, by about the middle of the nineteenth century, hardly any columns of the arcade were still standing and some capitals were mutilated or even missing. The Carter drawings include 14 capitals in the slype, so it is likely that, in 1799, six of the original 20 capitals were already missing.

In 1856, *The Builder* published a drawing by C. W. S. Sheeres showing a general view of the slype as well as eight capitals, all of which save one can be recognized as the same as were drawn nearly 60 years earlier by Carter.[42] Sheeres's drawing is less accurate than Carter's and so the difficulty in identifying the capital, which does not match any among the 14 drawn by Carter, may be due to the clumsiness of the draughtsman.

It is clear that Grimthorpe only wanted the most richly decorated capitals for his transept arcade and so he saved for this purpose all suitable capitals from the old slype, adding two from some other location. He was still short of one capital to make the arcade complete and was forced to use a scallop capital from the slype, the richest of the six such capitals drawn by Carter.

Description of the capitals (see Table 3.3.2)

All the capitals are of almost the same size, their height varies from 230 to 235 mm. The front face of the abaci is

[37] The inscription below the arcade gives the date 1887, but Ferriday (1957, 151) states that the work on the restoration of the south transept started in 1885, a year before Sir Edmund Beckett was raised to the peerage and took the title of Lord Grimthorpe.
[38] *The Builder 1856.*
[39] This turret is illustrated in Buckler and Buckler 1847, plate opp. p. 130. Buckler's drawing shows the turret 'with the conical summit restored', but the same turret illustrated in the *Gentleman's Magazine*, September 1833, Pl. I, p. 201 terminates in battlements.
[40] Page 1898b, 29–30.
[41] In the collection of the Society of Antiquaries of London, Blue Portfolio. Carter's drawings were engraved and published, somewhat rearranged, in Carter (1813).
[42] *The Builder*, June 14, 1856, 331. The engraving shows part of the blind arcade on both its south and north walls. A pre-1885 photograph of the slype showing a section of the arcade is found in Perkins (1903, 20). A comparison of these two records indicates that the proportions of the arcade in *The Builder* are inaccurate, the columns being far too high.

Table 3.3.2. Capitals drawn by Carter in 1799 and those in *The Builder* in 1856

Capital no.	Carter	The Builder
1	J3	8
2	G3	4
3	L3	2
4	K3	-
5	F3	7
6	-	-
7	-	-
8	D3	1
9	H3	5
10	N3	-
11	O3	-

270 mm while the side faces vary from 195 to 200 mm. The width of the capitals just below their abaci is 230 mm (front face) and 185 mm (side face). The diameter of the colonnette can be calculated as 140 mm.

It was a general practice during the Romanesque period to make the abacus from a different block of stone than the capital for the abacus usually projected beyond the face of the capital. This saved a great deal of labour and material, and therefore reduced the cost. At St Albans, however, the capitals and the abaci are part of the same monolithic blocks of stone. The wasteful method of making capitals applies to all the capitals at St Albans, including those of the scallop type. There is only one other building in which the same procedure of making capitals was used on a large scale and that is at Reading Abbey. St Albans shares with Reading one further peculiarity, namely that the abaci of the scallop capitals are merely moulded while the figural and foliage capitals have carved abaci.[43] Reading Abbey was a foundation of King Henry I and, not surprisingly, the stone used for the capitals was from the ducal quarries near Caen. The St Albans capitals are made of a fine-grained, grey limestone, which weathers badly because of its porosity. It was quarried at Totternhoe near Dunstable, only 14 miles from St Albans.[44]

All the capitals are block-shaped, with the suggestion of a basic cubic form. Not one single example has angle volutes. Many neckings (astragals) are Grimthorpe's restoration and those which are original are quite plain. Grimthorpe's arcade includes two angle capitals with two carved faces and nine capitals decorated on the three visible faces. They are part of the intersecting arcade which imitates the bobbin arches of the old slype.

The capitals will be described from east to west as numbers 1 to 11. Capital no. 6 is no longer part of the arcade, it was removed to allow the piercing of a doorway linking the south transept with the newly built Visitors Centre. All the leaves carved on the capitals are of the trefoil type, unless otherwise stated. They and practically all the stalks are enriched with beading so these features will not be mentioned in the description of individual capitals.

Capital 1

Each of the two faces has a U-shaped stalk ending in trumpet leaves, the only examples of this form of leaf in the whole series. Beaded clasps link the stalks at the bottom to the necking and at the angle to each other, while three beaded spurs, like miniature corbels, appear to support the abacus. Such clasps are common in English Romanesque sculpture but spurs in this position are found on only one of the Reading Abbey capitals.[45] The abacus of Capital 1 is decorated with four swallow-shaped plant motifs.

Capital 2

This is a scallop capital with beaded bands separating the cones, those at the angles ending in palmette leaves. The shields appear to have been cut back a little, probably by Grimthorpe's restorer and there are two secondary drilled holes in the west face. Carter drew this capital (his no. G3) with shields framed by projecting bands but no doubt they were chiselled off because of their damage. The abacus has a simple horizontal moulding.

This is the only scallop capital of the arcade, but Carter recorded five others, each of a slightly different design (his nos B3, C3, E3, I3 and M3) and of these, one was trimmed and reused by Grimthorpe as the angle capital on the south wall of his reconstructed slype. As has been said, in contrast to the foliage and the figural capitals with their rich abaci, all the scallop capitals have very simply moulded abaci. The same arrangement was adopted at Reading Abbey. There, the elaborately carved cloister capitals alternated with the scallop type, but whether this method was adopted at St Albans is uncertain. Judging from the Carter drawing, such alternation involved only his capitals C3 to J3, that is to say eight capitals out of 14. It should be borne in mind,

[43] For the Reading capitals, see Zarnecki *et al.* (eds) 1984, 167.
[44] Roberts 1974. Totternhoe Stone is also discussed by West 1951.

[45] Zarnecki *et al.* (eds) 1984, 168, no. 127c, where it is pointed out that the motifs carved on this Reading Abbey capital are remarkably similar to the initials in a manuscript painted by the Master of the St Albans Psalter (Cambridge, King's College, MS 19, f. 80v).

however, that six capitals were already missing and it is not known whether Carter drew the capitals in any particular order.

Capital 3

Only the right-hand half of the western face of this capital is original. Clearly Grimthorpe was unable to find a sufficient number of richly carved capitals and in this case used a fragment as a basis for his reconstruction. The work was carried out with great skill and only on close inspection can a joint be detected between the old and the new work. In addition, the vertical tooling of the restorer betrays the modern work for it differs from the diagonal of the original sculptor.

The motif carved on the twelfth-century part of this capital repeats that used on Capital l, but here it is placed horizontally. There is a continuous lozenge pattern on the abacus and a similar decoration to those on Capitals 4 and 8.

Capital 4

The design on the shields of this cubic capital is similar to that on Capital l, but placed upside-down and with the leaves passing under the stalks to curl in the spandrels of the shields. In the centre of each face, just below the abacus, is a semi-circular clasp from which springs an inverted leaf, the tip of which grips the shield's frame. In the spandrels below, the shields are leaves and clasps emerging from the necking. The right-hand (west) side corner is a skilful restoration carried out on an inserted stone. The abacus on the main face consists of interlocking lozenges, which on the side faces become continuous, as on Capital 3.

Capital 5

This capital is badly weathered and has many cracks. It is of a cubic form with plain spandrels below the shields. A stalk is carved on each side face emerging below the abacus, and forming a spiral which terminates in a leaf, from the centre of which extends a further flat leaf clasping the outer circle of the stalk.

The main face shows two figures in profile resting against the semi-circular frame of the shield, their faces turned towards the onlooker. They have shoulder-length hair. That on the right holds a flask or a bag, and the other an object which may be a viol or a spindle. The figures are so weathered that at first glance they appear to be nude but in fact are dressed in tunics. On the back of the left-hand figure, traces of a beaded hem and a tussle-like projection hang down from the sleeve of the same figure. Practically identical sleeves are on a relief in St Andrew's church at Landford in Wiltshire on which two women (one of which is probably St Helena) hold a cross. Such extravagant sleeves were fashionable for women in the twelfth century.

What is the meaning of this scene? If the figures are Adam and Eve, Adam holding the seeds given to him by God to cultivate the land and Eve the spindle for making cloth, this could be that rare representation based on the Jewish legend the *Vita Adae et Evae*, known during the Middle Ages both in the Greek and Latin versions.[46] The only scenes so far identified based on this legend are found in English art. For instance a drawing in Caedmon, a metrical paraphrase of biblical narratives written in the first half of the eleventh century (Oxford, Bodleian Library, MS Junius 11, f. 46), shows Adam holding a spade in one hand and a bag of seeds in the other. In Aelfric's paraphrase of the first six books of the Bible of a similar date, the Archangel Michael is teaching Adam how to dig (British Library, MS Cotton, Claudius B IV, f. 7v). More importantly, on the Romanesque frieze on the facade of Lincoln Cathedral, there is a scene showing Adam and Cain tilling the ground and the hand of God appearing from heaven to give Adam a bag of seeds, while the next relief illustrates the birth of Abel and Eve spinning.[47]

The difficulty in accepting the scene on the St Albans capital as Adam and Eve is that between the two figures is what looks like a bird, probably an owl. An owl occupies the same central position on a capital in the church of St Pierre at Aulnay-de-Saintonge, but there the identity of the bird with its wings outstretched is unmistakable. On this French example, the owl is flanked by two dogs which attack it by gripping its wings. The owl, since it prefers to fly at night, was regarded, during the Middle Ages, as the symbol of perverse foolishness.[48] Perhaps the scene on the capital should be understood in the same sense as the majority of purely decorative initials of manuscripts.[49]

The abacus of this capital is decorated with moulded, wavy bands superimposed on lozenges which are joined by horizontal lines. A remarkably similar, but richer design is found on a stone from Reading Abbey incorporated into a font in the church of St James in Reading.[50]

[46] Charles 1913, II, 138.
[47] Zarnecki 1979, p. xv, 25, Pls. 3a and 4.
[48] Anderson 1935, 135.
[49] For instance an owl can be found in an initial of the Bury Bible (Cambridge, Corpus Christi College, MS 2, f. 5v) or in St Augustine's Commentary on the Psalms (Lincoln, Cathedral Library, MS 1.18, f. 80) both illustrated in Kauffmann 1975, Pls. 150 and 164. Human figures fully dressed or nude also frequently decorate the initials and there are a number of such examples, see Kauffmann 1975, Pls. 86 and 88.
[50] The font is discussed and illustrated in Zarnecki 1950, 116–18, Pl. 48D.

Capital 6

The bands emphasizing the cubic shields of this capital spring from the mouths of two animal heads placed at the angles. The side faces of the capital are carved with the same basic design of the intricate, so-called orchid leaf, the tips of which are of the 'island' or 'cap' leaf type. There is a great deal of beading, incised lines, and other enrichments. The front face is the most intricate and includes two orchid leaves. On the side faces, a wheel is interwoven with the leaves, but on the main face the stalks are used for this purpose. The wheels and the stalks seem to pass through some leaves as thread passes through beads. This is a motif of decoration derived from illuminated manuscripts but it had already been adopted by English sculptors at Reading Abbey, where one particular cloister capital presents a very close parallel with St Albans Capital 6. It should be mentioned that a similar motif of leaves intertwining with a wheel is used on the pavement tiles of the St Albans chapter house.[51] Since the designs of the tiles are in relief, it is quite possible that the wooden moulds were carved by the sculptor of Capital 6.

The side faces of the abacus are carved with two palmettes joined together by a trefoil leaf. The main face of the abacus has three circular forms containing two curving leaves with a mandorla-shaped void in the centre. Separating these three forms are two W-shaped bands intertwining with a horizontal band, and this motif is loosely based on Kufic lettering such as frequently occurs in Romanesque art.[52] Capital no. 6 is by far the most elaborate of those surviving at St Albans. The fact that it was unknown to Carter and *The Builder* suggests that Grimthorpe did not obtain it from the old slype. However, in size and general character, it is sufficiently similar to all the other capitals to convince that it was originally used in one of Abbot Robert's other buildings.

Capital 7

The main face is decorated with two dragons back to back, their tails intertwining. The dragons bite their own wings and tread on their own tails. Both tails are beaded but each neck is differently enriched. Representations of dragons similar to these were very popular with Romanesque artists working in all media. One of the Reading capitals is decorated with a pair of dragons biting their own feet.[53] The side faces are carved with X-shaped stalks ending in large leaves with concentric circles at the intersections. On the east face of the abacus are two wavy intersecting bands, while the remaining two faces have graceful pairs of leaves with bowed tips, a motif which is repeated three times on the main face and twice on the west face.

This capital was also unknown to Carter and *The Builder*. It belongs, however, stylistically to the slype series, the leaves being particularly close to those on Capitals 1, 4, 8, and 11.

Capital 8

A mask in the centre of the main face has a long and thin moustache emerging from the nostrils and stalks of foliage from the mouth and these end in leaves. Below the mask there is a flame-like leaf. Each of the side faces has an arcade ending in a large leaf and joined to the abacus by a clasp. From the necking there emerges a flat leaf. The abacus has a continuous diamond pattern. The right-hand corner was repaired on an inserted stone and there is a considerable crack through the mask. A fairly close parallel for this capital exists on the base of the font in St Mary's, Aylesbury, a font which has been attributed to the sculptor of the slype doorway.[54] The motif also appears on one of the capitals of the chancel arch of St Mary's, Hemel Hempstead, a church which seems to have been indebted to St Albans in many features of its decoration. Also close in style to Capital 8 is *RF 2024* from the chapter house excavation which in turn was compared to the Aylesbury font and the slype doorway.[55]

Capital 9

On the main face is a medallion which encloses two stalks ending in trefoil leaves, while on each of the side faces are four leaves within stalks. The decoration of the abacus is similar to that on Capital 7 but upside-down.

Capital 10

This is decorated with a very elaborate, symmetrical design of intersecting stalks with four trefoil leaves. The sides consist of two stalks which are linked to the main face and they end in two leaves placed horizontally and forming a 'blossom' design. The abacus is similar to no. 9, though the stalks bend in a different way. On the modern necking is inscribed the name C. STEPHENS, presumably one of Grimthorpe's restorers.

Capital 11

This angle capital is the only one of the series which is of the 'water-leaf' type but, unlike the correct water-

[51] For the tiles, see Biddle and Kjølbye-Biddle 1984a, 392, no. 552.

[52] Ornaments based on Kufic and Pseudo-Kufic script are discussed fully by Cahn 1974, 16ff and more recently by Watson 1982, 98ff. On the abacus of one of the Reading Abbey capitals there is a decoration which may also reflect the influence of the Kufic script, see Zarnecki 1950, Pl. 38C.

[53] Zarnecki *et al.* (eds) 1984, No. 127a, Pl. p. 64.

[54] Marks 1970, 27.

[55] Kahn 1982, 85, Pls. XXIVb and XXVa.

leaf capital, it has no angle volutes. Instead, the upper part is cubic, with a very similar design to no. 4. The moulded abacus has a horizontal beaded band. The water-leaf capitals in England became popular from *c.*1160 onwards but this tentative form is certainly earlier.[56]

The south transept doorway

The doorway in the south wall of the transept was inserted by Grimthorpe at the same time as the arcade above during the 1885–7 restoration campaign (Illus. 2.4.3). 'This doorway is partially constructed with stones of a very beautiful doorway formerly leading out of the west end of the slype into the cloister, an inner ring has been added to it by Lord Grimthorpe to make the opening smaller'.[57]

The doorway consists of three continuous orders, without any colonnettes or capitals. The inner order, as testified by the passage quoted above, is a clever pastiche made under Grimthorpe's direction 'carved with great care and fidelity to the original in the hope of confusing and confounding some of his many antiquarian critics'.[58] The voussoirs of the two other orders are carved with different motifs but on single blocks of stone. Only two or three of these voussoirs are original; the rest are fairly competent copies. The outer order is decorated with symmetrical spiral stalks growing out of the bottom leaf, bending outwards and then up and inwards and bound by a beaded clasp in the centre and then ending in flat trefoil leaves and flowers. Remarkably similar foliage is found on the rim of the font at St Marys, Aylesbury of which it was said that it 'may with confidence be ascribed to the same hand' as the St Albans doorway. Dr Richard Marks, from whom this quotation is taken, further compared the bobbin motif on the slype arcade to that on the facade of Dunstable Priory.[59]

The inner order of the St Albans doorway, which is rectangular and has a roll at the ridge, consists of two rolls with beading the whole length of one side, forming, at regular intervals, small semicircles coming close to the central ridge-roll. The resulting enrichment is a variant on the more familiar themes of the 'confronted' chevron, sometimes called 'chevron forming lozenges'[60] and the 'confronted' fret, both of which were found *in situ* in the St Albans chapter house.[61]

The type of foliage used on the doorway and the general character of the carving are so similar to those of the slype capitals that there can be little doubt that the doorway is of the same date as the capitals and that all this sculpture was produced in one workshop.

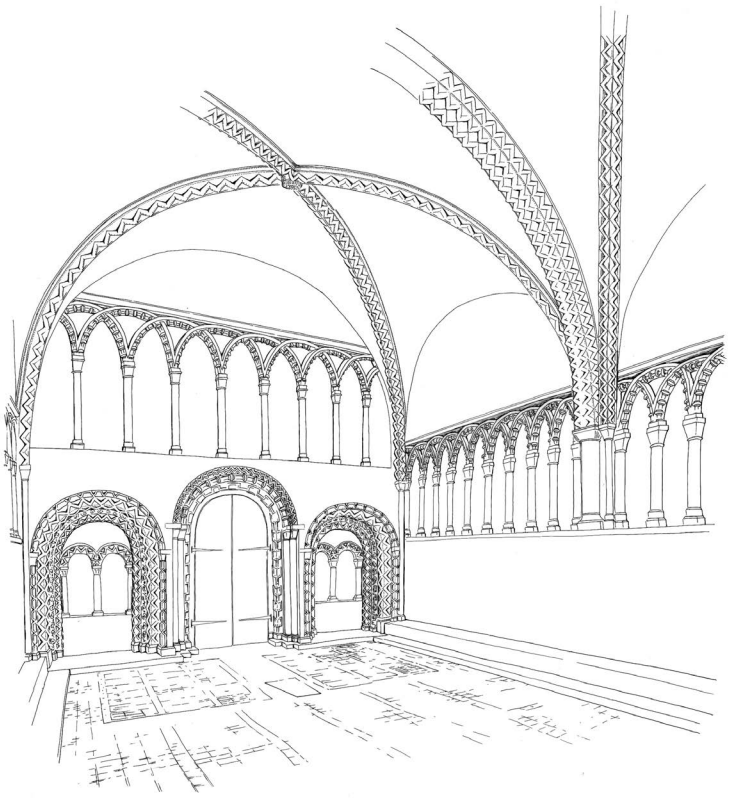
Concluding remarks (i)

In a study of the iconographic programmes of Romanesque cloisters, Léon Pressouyre stresses the frequent reference in the sculpture of chapter houses to the idea of justice on earth and temporal punishment, with the extensive use of such subjects as the Last Judgement and the torments of the damned.[62] The chapter house was, after all, the place where erring monks were punished, sometimes with a birch. It would be futile to speculate whether a subject of this kind was carved at St Albans, whether there were any large-scale figures as at Durham and St Mary's Abbey, York. All that can be said is that the colonnettes and jambs of the interior were splendidly carved with foliage and geometric designs in harmony with the spectacular tiles of the floor. From the plan of the chapter house revealed by the excavation, it must be assumed that the entrance was very complex and decorated both towards the cloister and towards the interior. The two voussoirs that, in all likelihood, were part of this doorway, give a good indication of the delicacy of this sculpture, which bears comparison with the best in manuscript illumination and metalwork of the period.

The part of the cloister outside the chapter house, judging from numerous fragments which most likely came from there, was no less elaborate. Some idea of the splendour of Romanesque cloisters in the twelfth century is given by the surviving claustral arcades and doorways of the Abbey of Saint-Aubin at Angers, *c.*1130. They have some stylistic connection with Reading Abbey and thus are not irrelevant in this context.

Moving north along Abbot Roger's cloister walk and passing under the arch 'confronted fret', the doorway of the slype was reached. Like the chapter house, it combined geometric and foliage decoration and both were closely related to the decoration of the other structures built by Abbot Roger. Because of 'the depth of relief and mastery of handling', the slype doorway has been dated to between 1170–85, and the capitals of the interior to *c.*1170.[63] It is very unlikely that work on such buildings as the chapter house, the adjoining cloister

[56] Bond 1913, 506 dates water-leaf capitals in England to between 1165 and 1190. However, water-leaf capitals are found on the west towers of Lincoln Cathedral which are usually dated to between 1150 and 1160, see Zarnecki and Kidson (eds) 1976, Pl. 155.
[57] Page 1898b, 29.
[58] RCHM *St Albans* 1982, 24.
[59] Marks 1970, 27, 29. He dates the St Albans capitals to before 1166 but places the doorway between 1170 and 1185.
[60] Borg 1966–67, 135.
[61] Biddle and Kjølbye-Biddle 1984a, Figs. 9 and 10.
[62] Pressouyre 1973, 78–80.
[63] Marks 1970, 29.



Illus. 3.3.62. Reconstruction of the third (rectangular) chapter house.

and the slype, which played such a vital role in the life of the monastic community, would have been allowed to drag on, creating obstruction, noise, and dust. It must be assumed that the work was well organized, that most of the stonework, including the sculpture, was prepared beforehand some distance away and that when the old buildings were demolished, the new ones were assembled with speed in one intensive campaign. The stylistic evidence of the surviving sculpture does not support the suggestion of a lengthy campaign, quite the contrary. All the work should have been completed between 1155 and 1160.

The importance of the slype in the life of the monastery cannot be compared to that of the chapter house. In the first place, the slype was a passage connecting the cloister with the monk's cemetery, and in the second it was a parlour where the monks could talk to each other. The *Gesta Abbatum* describe this structure as *regale locutorium* but it has been pointed out that this may be a mistake, and should have been *regulare*.[64] Nevertheless, the decoration lavished on this utilitarian and not ceremonial building illustrates the grand plans Robert of Gorham had for his house. As the premier abbey of England, St Albans was to be suitably impressive in every part and detail (see Illus. 3.3.62).

[64] *Gesta Abbat.*, I, p. 179; *VCH Herts* 2, 508.

Concluding remarks (ii)

The style of the sculpture surviving from Abbot Robert's buildings springs from the rich tradition of English Romanesque decoration. The sculptors were undoubtedly professional lay men. Occasionally, such men entered monastic communities and were allowed to continue using their artistic skills. Many artists of this period worked in several media and this explains the close stylistic connections between all the arts. It has been claimed by Otto Pächt that the St Albans goldsmith Anketil, whom the *Gesta Abbatum* call 'aurifaber incomparabilis', and the chief illuminator of the St Albans Psalter, whom scholars christened the Alexis Master,[65] are one and the same man. The work of the Goldsmiths was the most highly appreciated of all the arts in this period and the term *aurifaber* probably covered skills in other arts as well. Master Hugo of Bury St Edmunds, for instance, is recorded as a metalworker painter and sculptor[66] and it is likely that at least the sculptor of the small figures at St Albans was also a painter, carver in ivory, and metalworker. Romanesque artists travelled a great deal and this provided great opportunities for the exchange of ideas and the spread of styles. Anketil was a monk of St Albans and yet he was for some years in the royal service in Denmark in charge of the mint. Otto Pächt recognized a distinctly St Albans Psalter style in the Danish coins of King Sven Grade (1146–57).[67] It is also intriguing to find an echo of the St Albans stone sculpture in such Danish fonts as that at Tiköb in North Zealand, signed by a certain Alexander, in all likelihood an Englishman.[68]

While English patrons and artists were aware and affected by developments on the Continent, their artistic sources were largely local. During the twelfth century St Albans was an artistic centre of the first importance, comparable only to Canterbury, Winchester, and Bury St Edmunds. Until now, the high reputation of St Albans rested exclusively on book illumination. The new discoveries show that St Albans was also an important centre of stone sculpture.

[65] Pächt *et al.* 1960, 172ff.
[66] Recorded in *Gesta sacristarum monasterii s. Edmundi*, see Lehmann-Brockhaus 1955, I, no. 495 and 501.
[67] Pächt *et al.* 1960, 174.
[68] Mackeprang 1941, 43ff.

PART 3

4. THE PIGMENTS USED IN PAINTING THE SCULPTURE OF THE THIRD (ROMANESQUE) CHAPTER HOUSE OF 1151–66 AND A GOTHIC SCREEN OF *c.*1325–50

by HELEN HOWARD
for the late JOYCE PLESTERS

Mid twelfth-century Romanesque figure fragments, RF 2154 and RF 2155, both from Final phase 27, 1396–1402 (P.ph. 52), from the mortared rubble lining of G. 13, the burial of John de la Moot (d.1402)

X-ray diffraction analysis confirms that the bright blue pigment employed for the drapery of a small headless figure is Egyptian blue. This figure is 180 mm high and comprises two pieces. Paint is present only on *RF 2154*, the lower fragment; the background is red and there are traces of flesh paint and blue and green drapery. Four tiny paint samples taken from *RF 2154* were analysed. In addition to Egyptian blue, the red pigment was identified as vermilion, the green drapery was found to consist of a mixture of yellow ochre with carbon black, and the pinkish-brown flesh tone of the foot, a dullish red ochre combined with calcium carbonate. The binding medium of the paint was identified as egg tempera.[1]

Zarnecki and Kahn have dated this piece of sculpture to the twelfth century on the basis of the circular patches that highlight the figure's shoulders and buttocks, which is a technique utilized in the Terance manuscript produced at St Albans in the mid-twelfth century.[2] In addition, the segmental coils of drapery across the chest also correspond to the drapery of the Terance illustrations, whilst the pleats of the skirt and hem are also similar. Zarnecki and Kahn further note that segmental coils were heavily employed in the large-scale sculpture at Malmesbury Abbey of *c.*1160.[3]

Given the dating of this polychromed figure, the identification of Egyptian blue is quite unexpected. Also known as blue frit or Pompeiian blue, Egyptian blue is the calcium-copper tetrasilicate $CaCuSi_4O_{10}$. Details of the technology of the pigment are given by Tite *et al.*, and its characteristics, use, and criteria for identification are provided by Riederer.[4] Egyptian blue was first used during the Egyptian Old Kingdom and was utilized throughout antiquity, being the principal blue pigment in Egyptian, Greek, and Roman wall painting. Until quite recently, it was assumed that the technology of its manufacture was lost at the end of the Roman period. However, Lazzarini identified Egyptian blue on the mandorla and in the background of the painting of the *Ascension* of *c.*847–55 in the lower church of San Clemente, Rome extending the ascertained use of the pigment by five centuries.[5]

Subsequently the pigment has been identified in a number of instances, which provide confirmation of its continued use in the early medieval period. For example, it has been identified in wall paintings dated to the first half of the eighth century at San Saba, Rome, where Egyptian blue and lapis lazuli have been detected in the same paint layer;[6] in Carolingian paintings of *c.*800 in the convent church of St Johann at Müstair in southern Switzerland;[7] in frescoes dating from the first half of the ninth century at

[1] Analysis was conducted in 1980 by Joyce Plesters and Raymond White of the Scientific Department at the National Gallery, London. The presence of Egyptian blue was confirmed by laser microspectral analysis and by X-ray diffraction powder analysis, which gave a pattern corresponding to the crystalline structure of Egyptian blue. See unpublished report by Joyce Plesters, 31 December 1985. Gas chromatography undertaken by Raymond White on a sample of the flesh paint suggested the presence of an egg tempera medium. This chapter was first submitted in 2012.

[2] See Zarnecki and Kahn above, p. 146–173; Kahn 1983, 86, Pl. XXIXa dated the figure to 1151–66.

[3] See above, p. 148.

[4] Tite *et al.* 1984; Riederer 1997.

[5] Lazzarini 1982, 84.

[6] Gaetani *et al.* 2004.

[7] Mairinger and Schreiner 1986, 195. At Müstair, Egyptian blue was employed for backgrounds, haloes, mandorlas, in the folds of robes, and – as at Castelseprio – as an underpaint for flesh tones. See Emmenegger 1986, 197.

Castelseprio, north of Milan;[8] in the paintings of the first half of the ninth century in the atrium of Santa Maria Antiqua, Rome;[9] in early ninth-century painted plaster from San Vincenzo al Volturno, east of Montecassino;[10] and in early medieval painting of ninth to eleventh centuries at the Basilica of the Forty Martyrs, Saranda, on the south Albanian coast.[11]

All these examples are wall paintings from sites focused in, or very close to, Italy.[12] However, if in addition we consider identifications of the pigment on polychrome sculpture, the geographic spread of findings widens to encompass England and Spain: Egyptian blue has been identified on an Anglo-Saxon capital, dated variously to the early seventh and the ninth century, from St Augustine's Abbey, Canterbury;[13] and on a tenth-century stone altarpiece in Catalonia.[14]

So, though unusual, the identification of Egyptian blue on mid twelfth-century sculptural polychromy from St Albans is not without precedent.[15] It was nevertheless, until very recently, thought to represent the latest known instance of the use of this pigment. However in 2011 Bredal-Jorgensen *et al.* published the identification of Egyptian blue in a panel painting of 1524 by the Italian artist Ortolano Ferrarese. In this instance analysis of the blue paint of St Margaret's dress confirmed that Egyptian blue was combined with ultramarine and applied over an underpaint of azurite mixed with red lake.[16]

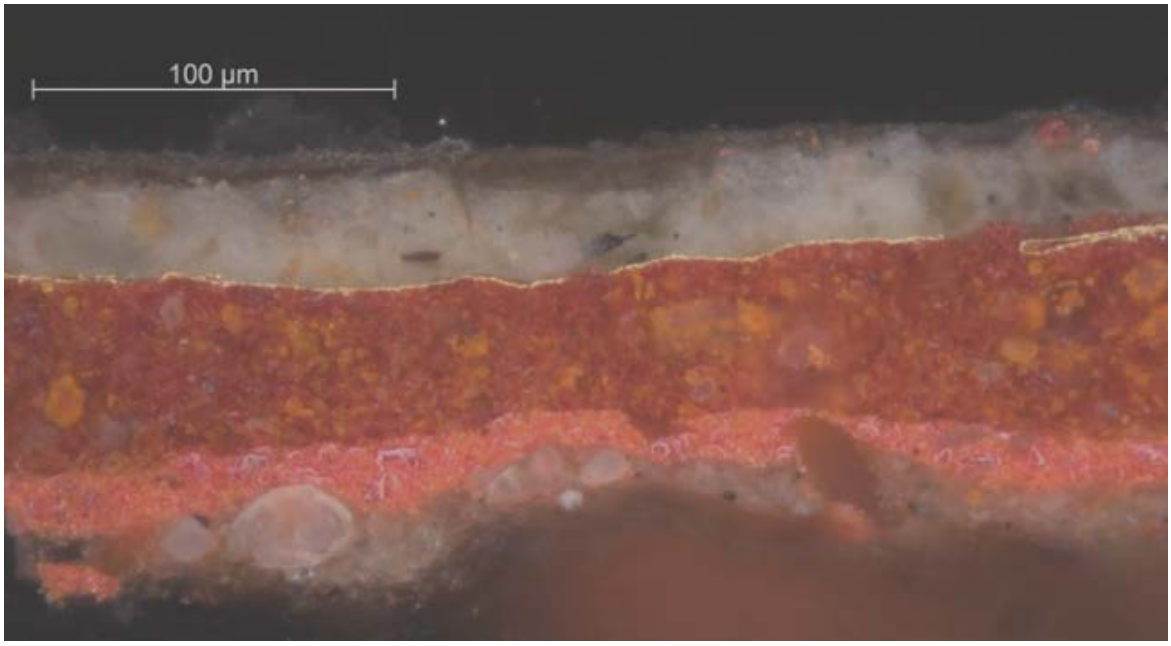
Despite the increasing recognition of Egyptian blue on post-Roman painting and sculpture throughout Europe, it remains to be established whether or not Egyptian blue was manufactured in the medieval period or whether painters discovered and made use of caches of genuine Egyptian blue surviving from the Roman period. Certainly, Egyptian blue has been identified in Romano-British wall paintings and finds have been made at Roman sites across the empire, including Britain,[17] of the small terracotta jars in which the raw materials, shaped into small spheres, were fired, the jars still containing the small blue balls of prepared pigment.[18]

Egyptian blue is conspicuous by its absence from mention in the best-known artists' handbooks and technical treatises of the medieval period to 1900. However, working instructions for the manufacture of Egyptian blue are found in Vitruvius' *De Architectura*, a work much studied in the Renaissance.[19] Plesters found a rough transcript of Vitruvius' instructions (though the authorship was not acknowledged) among miscellaneous recipes for making pigments in a seventeenth-century French handbook of practical hints. It is therefore possible that instances may have occurred of the method of making the pigment being rediscovered in documentary sources, and then tried out in practice. That this happened frequently seems unlikely. So, although it cannot be ruled out that the pigment is a product of the medieval period, on balance, given the strong focus of finds in and around Italy and in the proximity of Roman sites (*Verulamium* – St Albans; and *Egara* – Terrassa, Catalonia), it seems most likely that the pigment identified at St Albans (and elsewhere) represents a reuse of Roman material.

Mid twelfth-century Romanesque pelleted interlace fragments RF 2223–4, both from Final phase 27, 1396–1402 (P.ph. 52), from the mortared rubble lining of G. 13, the burial of John de la Moot (d. 1402)

Analysis was also undertaken of two fragments of Norman pelleted interlace decoration. Both were found to be painted with vermilion over a layer of red lead (on *RF 2223* over lime plaster), and charcoal black was employed for decorative features on the surface of *RF 2224*.

[8] Leveto 1985, 81.
[9] Osborne 1987, 193, n.33.
[10] Howard 2001.
[11] Analysis by Howard in Mitchell 2004.
[12] Identifications have also been made on 6th-cent. wall paintings in Israel and Turkey, see Sidoti *et al.* 2018.
[13] Braine and Welford 1991, 34–5.
[14] The original polychromy of the altarpiece was later modified, probably in the 14th cent. See Lluveras *et al.* 2010.
[15] Blue pigments identified elsewhere in English polychrome sculpture of the 12th cent. include: natural ultramarine and indigo on the excavated stone sculpture of Moses (*c.*1180–5) from St Mary's Abbey, York (Brodrick 1993); and natural ultramarine and a copper blue pigment on the west front of Lincoln Cathedral of 1140 (Larson 1992; Larson 1993).
[16] Bredal-Jorgensen *et al.* 2011. In this study photo-induced luminescence digital imaging was employed to characterize and map the presence of the Egyptian blue pigment. For this method of analysis, see also Verri 2009, and Spring *et al.* 2019.
[17] See analysis by L. Biek, in Davey and Ling 1982, 220–2.
[18] There have also been numerous finds of unused Egyptian blue pigment in the tombs of Roman painters, see Riederer 1997, 26.
[19] Vitruvius, *De Architectura*, Book VII, Chapter II 1934, 122–4, 'The processes for making blue were first discovered at Alexandria; afterwards also Vestorius founded a factory at Puteoli. His method and his ingredients are sufficiently noteworthy. Sand is ground with flowers of soda to such fineness that it becomes like flour. Cyprian copper is sprinkled from rough files like fine dust so that it combines with the mixture. Then, it is rolled by hand into balls and they are put together to dry. When dry they are collected in an earthernware jar, and the jars are put in a furnace. In this way the copper and the sand burning together owing to the vehemence of the fire dry together, and interchanging their vapours, lose their properties; and their own character being overcome by the vehemence of the fire, they acquire a blue colour'.



Illus. 3.4.1. Cross-section of Sample 1 taken from fragment *RF 3022*. vi) oxidized metal leaf consisting of silver combined with a little gold; (v) mordant of lead white combined with bone white and a little red lead and charcoal black; (iv) gold leaf; (iii) thick layer of red earth combined with red lead; (ii) vermilion with bone white; (i) ground of lead white combined with bone white with a little red lead, red earth, and carbon black.

Second quarter fourteenth-century Gothic spandrel fragment with roll and hollow mouldings intersecting, and foliage decoration with oak leaves and acorns, probably from a large and highly decorated screen. RF 3022, Morris Stone Inventory 264[20]

Fragment *RF 3022* appears to be the remains of a hood modelling, foliated with a rosette and partially gilded. Three samples were taken from this for analysis.[21] The first (Sample 1 – gold from inner acorn, Illus. 3.4.1) shows: (i) an underpaint of lead white combined with bone white with a little red lead, red earth, and carbon black; over which (ii) a layer of crystalline vermilion with bone white has been applied. On top of this (iii) is a thick layer of red earth combined with red lead, over which (iv) gold leaf has been applied. Another pale layer of lead white combined with bone white, red lead, and charcoal black (v) is visible over the gold. This probably functioned as a mordant for the overlying layer (vi) which is an oxidized metal leaf consisting of silver combined with gold. The backscatter electron image taken in the VPSEM clearly shows the stratigraphy (Illus. 3.4.2) while X-ray maps indicate that while the lower layer of metal leaf is pure gold, the uppermost, and now tarnished metal leaf on the surface, consists of gold and silver (Illus 3.4.3 and 3.4.4), possibly the remains of a layer of part-gold.[22]

A part of Sample 1 was subjected to medium analysis by gas chromatography which suggested the use of egg with drying oil, possibly the latter as the major component [23] However, in the light of recent findings concerning the identification of oil-egg emulsions in the presence of lead-containing pigments such as red lead, it might be reasonable to reassess the results concerning the original binding medium.[24]

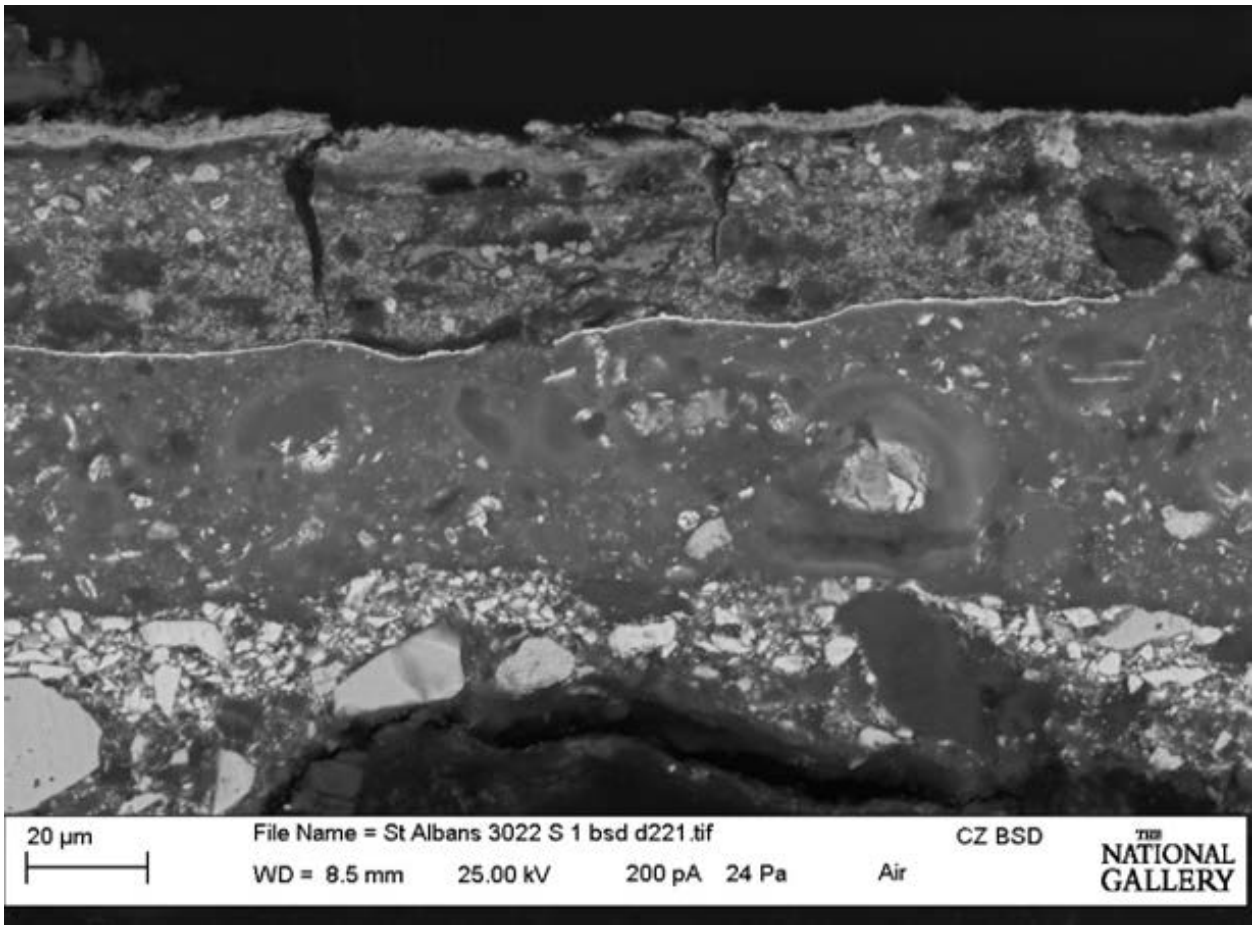
[20] Originally stored in the control room beside the Abbot's Doorway from the east cloister walk into the south aisle, but recovered in 1979 from a dump in the North Churchyard and now in the triforium stone store above the nave south aisle: see Monckton and Morris 2001, Section 6.4.4, 'Group 1', 26: 'probably from a large and highly decorated screen; with exuberant foliage and a proliferation of carving generally reminiscent of the nave S side rebuilding; some of the group's features may be compared to a number of great church fittings in the first half 14C, for example the choir stalls at Ely cathedral (1338–48) or the altar screen at Christchurch Priory, Dorset.'

[21] Initial examination of these samples was undertaken by Joyce Plesters. Further analysis using a Zeiss EVO MA10 variable pressure scanning electron (VPSE) microscope with an Oxford X-Max (80 mm^2) energy dispersive X-ray (EDX) detector was undertaken by Helen Howard in 2012.

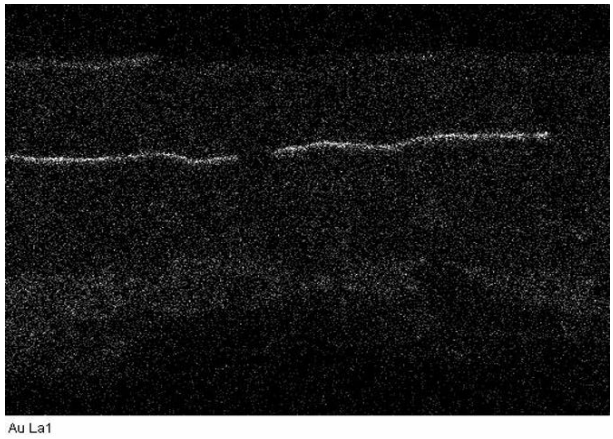
[22] X-ray spot analysis of this layer confirmed that the gold and silver are coincident in the upper most layer. Part gold was produced by beating layers of gold and silver together until a laminate was formed 0.25–5.0 microns thick (approximately the same thickness as gold leaf). This laminate was silver with a very thin layer of gold on the surface and rather paler and cooler in colour than gold leaf, see Nadolny 1999.

[23] This analysis was undertaken by Raymond White in 1980. In the light of recent findings concerning the identification of oil-egg emulsions in the presence of lead-containing pigments such as red lead, it might be reasonable to reassess the results concerning the original binding medium, see Spring and Higgitt 2006.

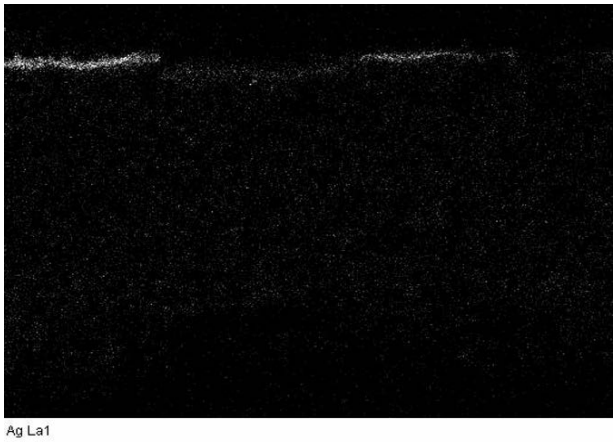
[24] Spring and Higgitt 2006, 223–5. A low azelate layer in the red paint layer was originally thought to suggest an oil-egg emulsion binding medium. However, research now indicates that a low azelate level is



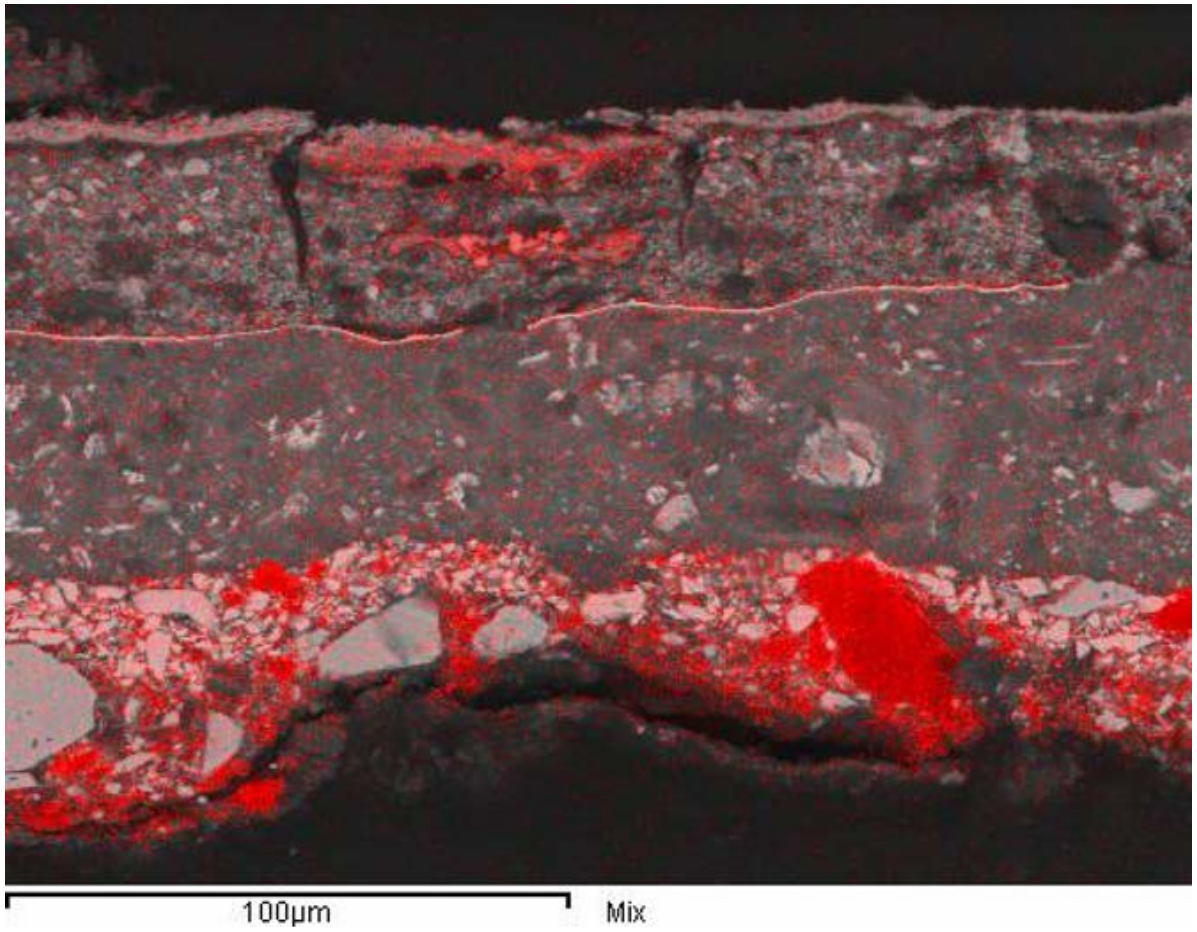
Illus. 3.4.2. Backscatter electron image of the cross-section shown in Illus. 3.4.1. The layer of gold leaf at the centre of the sample is clearly visible. A thin, though less distinct line is also visible at the top of the sample confirming the presence of gold in the tarnished metal leaf at the surface. This was confirmed by X-ray spot analysis of the area.



Illus. 3.4.3. X-ray map showing the distribution of gold (Au) over the area of the sample shown in Illus. 3.4.1.



Illus. 3.4.4. X-ray map showing the distribution of silver (Ag) over the area of the sample shown in Illus. 3.4.1. The now tarnished metal leaf on the surface of the sample consists of silver combined with a little gold.



Illus. 3.4.5. X-ray map for phosphorus (P) shown in red and overlaid onto the backscatter image of the sample shown in Illus. 3.4.1. The main zones of phosphorus are coincident with calcium and suggest the presence of bone white in the white ground (i), vermilion paint layer (ii) and mordant for the uppermost metal leaf (v).

See Illus. 3.4.5 for evidence of the use of bone white (tricalcium phosphate) as a constituent of both the ground and white mordant in Sample 1.[25]

The second sample (Sample 2 – red from undercutting) has a comparatively simple layer structure of bright red vermilion particles on the surface (like layer ii in the first sample), with an underpaint of a less bright red which also seems to contain some red ochre particles.

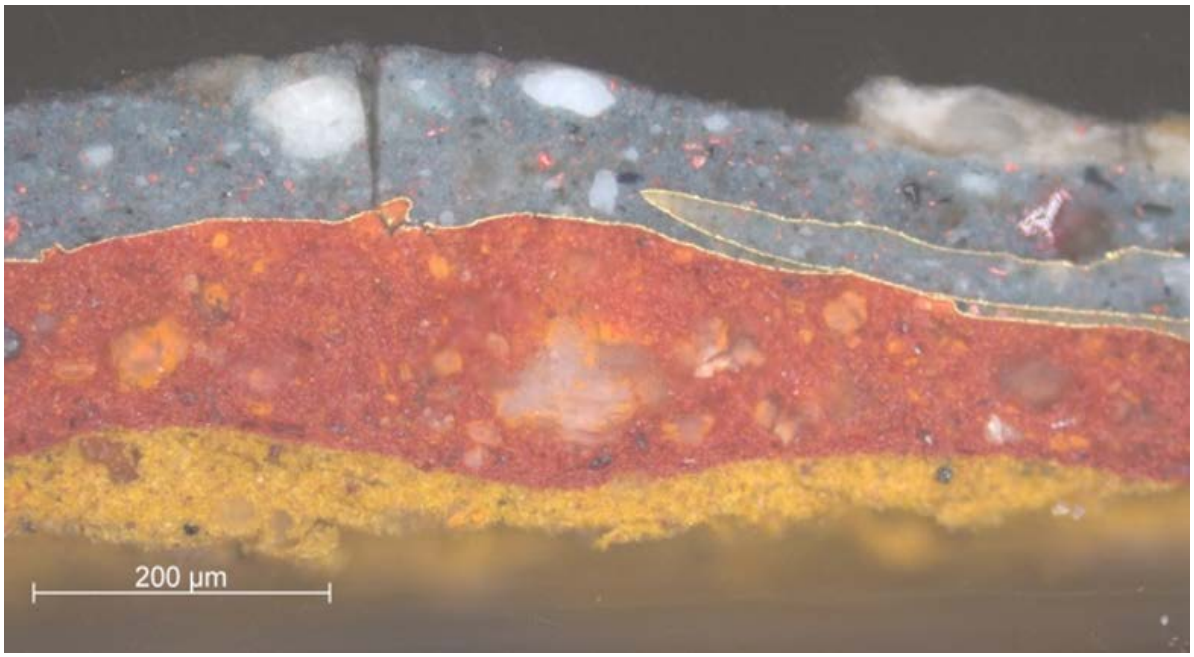
The third, Sample 3, of what initially appeared to be black paint from a large leaf, turned out, on closer inspection, to be a grey/purple paint (Illus. 3.4.6). The structure of this sample is as follows: (i) a bright 'mustard' yellow ochre with a few red ochre and black particles over which is (ii) a thick granular layer consisting of red earth combined with red lead; and gold leaf (iii) which folds back on itself in two places in the cross-section probably due to wrinkling during application of the metal leaf.[26] Both the grey/purple and red layers (iv) have penetrated right into and under these folds. The grey/purple layer (iv) consists of lead white combined with indigo, vermilion, and red earth and has been applied wet-on-wet in two or even three layers, the uppermost appearing slightly bluer and containing a higher proportion of indigo.[27] At the

often a consequence of lead soap formation. Close examination of the paint layer shows agglomerates typical of lead fatty acid soaps. In a number of similar cases, the FTIR analysis has shown that no protein is present and that the binding medium is oil which has reacted with the lead-based pigment to form lead soaps.

[25] See below p. 179–80.

[26] Similar multiple layers of gold leaf have been found in samples from the late 14th-cent. wall paintings in the Byward Tower, Tower of London. For the painting technique and sequence of painting of this scheme, see Spooner and Howard 2019.

[27] The presence of indigo was confirmed by FTIR analysis. Analysis of two areas from the upper layer on the cross-section by ATR-FTIR found no evidence for the strong, distinctive CN stretching band at *ca.* 2100 cm-1 that would be expected if Prussian blue had been present. However, the presence of indigo in both areas was confirmed by matching the spectra obtained from some of the blue particles against an indigo reference spectrum. The spectra contained all the expected bands in the fingerprint region, which together with the absence of the CN band, indicates that indigo and not Prussian blue is present. I am grateful to David Peggie of the National Gallery Scientific Department for his assistance with this analysis.



Illus. 3.4.6. Cross-section of Sample 3 taken from fragment *RF 3022*. (v) trace of a pale layer on the surface similar in appearance to layer (v) in Sample 1 (Illus. 3.4.1); (iv) grey/purple layer consisting of lead white combined with indigo, vermilion and red earth; (iii) gold leaf; (ii) thick layer of red earth combined with red lead; (i) bright yellow ochre with a few red ochre and black particles.

right side of the sample is a pale layer very similar in appearance to the mordant (v) for the now oxidized metal leaf on the surface of Sample 1.

The interpretation of the results from Fragment *RF 3022* is tricky. The identification of indigo in combination with vermilion, red earth, and lead white to form a purple colour is unusual. Indigo has been identified elsewhere in medieval polychromy but generally as a blue colour, combined only with a white pigment to adjust the tonality, [28] or in combination with yellow pigments to produce a green colour.[29] The documentary sources do however provide evidence for the use of indigo combined with vermilion and other pigments to form purple at an early date. Thus the Montpellier *Liber diversarum arcium,* lists a mixture of 'indigo and cinnabar and brazil and white' [1.27.32B].[30] Cennini, writing in the fourteenth century, suggests combining indigo with haematite to make a violet colour for use in fresco.[31]

The use of bone white (tricalcium phosphate) as a constituent of both the ground and white mordant in Sample 1 is also of interest as it has rarely been identified in early polychromy (see Illus. 3.4.5).[32] The white bone-ash pigment has, however, recently been identified in the polychromy of the tomb of Edmund Crouchback *c.*1300 in Westminster Abbey,[33] and notably, also in a mordant layer, in the late fourteenth-century *Apocalypse* cycle in the chapter house of Westminster Abbey.[34] The remains of tarnished metal leaf on the

[28] For example, indigo has been identified in important late 14th-cent. wall paintings in the chapter house of Westminster Abbey where the pigment was combined with lead white and used for details in blue over a red ground for stenciled borders in the *Apocalypse* cycle. The blue paint was applied in considerable impasto and so the red background colour has little or no effect on the final appearance of the blue layer. Indigo was also employed for the *Majesty* in the eastern bay of the chapter house though here it was applied over a copper green for the lining of drapery, see Binski and Howard 2010. For a discussion of the use of indigo in English medieval polychromy generally, see Howard 2003.

[29] Indigo was overlaid with orpiment to produce the green colour at the base of the mid-13th-cent. *Wheel of Fortune* in Rochester Cathedral. This analysis was undertaken by J. Darrah. See unpublished report of 1992 held in the archive of the Conservation of Wall Painting Department, Courtauld Institute of Art.

[30] The Montpellier *Liber diversarum arcium* contains classical and early medieval standard texts as well as a high proportion of apparently new material but is nevertheless written in Latin. It contains no source that is dated after 1300, see Clarke 2011, 35–6, 121.

[31] Cennino Cennini's compendium, *Il Libro dell'arte* describes the traditional Florentine workshop practices of the late Trecento and early Quattrocento, see Cennino 1960, 52. Cennino (1960, 32) also describes combining indigo with orpiment to produce a green colour.

[32] X-ray mapping of the sample in the VPSEM showed coincidence of calcium and phosphorus in some of the translucent/white particles confirming the presence of bone white (Illus. 3.4.5).

[33] Bone white was identified in a sample taken from the chain mail. The pigment was combined with yellow earth, calcium carbonate, and a few particles of silica in a layer applied over azurite on gold leaf. Howard 2009, 332.

[34] Here bone white was combined with lead white and yellow earth for the mordant for the gold leaf of the nimbus of St John in the *Celestial Host*. In the *Judgement* cycle, also in the chapter house at Westminster, bone white was combined with silica and lead white to form the fill mass of the attached crown held by one of the cherubim, see Binski and Howard 2010, 197–201.

surface of Sample 1 are also of interest. Previously accumulated analytical evidence has shown part-gold to be first utilized by painters in the early thirteenth century, though its use became more common in the fourteenth century.[35]

Though it was initially thought possible that the uppermost layers of the stratigraphy (i.e. those above the gilding) might be later additions, analysis of the samples suggests that all the layers of polychromy are coeval: the use of bone white both in the ground layer and in the uppermost mordant in Sample 1; the intermingling of both the red (below) and purple (above) layers with the gold leaf in Sample 3; and the lack of intermediary dirt layers. The dating of all the paint layers are thus intrinsically linked to the dating of this sculptural feature.

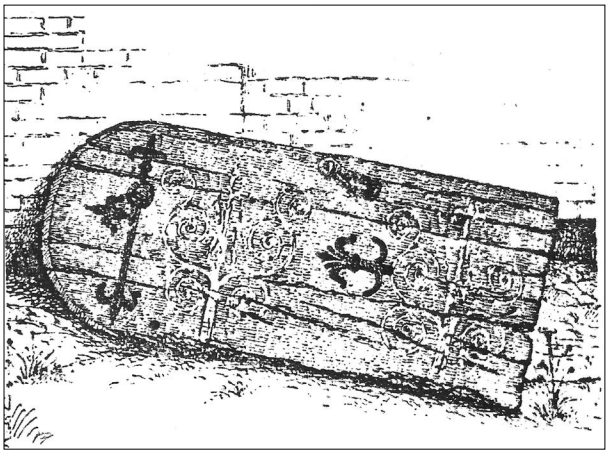
[35] Nadolny 2000, I, 160–1.

PART 3

5. THE IRONWORK OF THE (ROMANESQUE) DOOR OF THE SLYPE

by JANE GEDDES

Between 1154–9 and 1166, Abbot Robert of Gorham completely replaced the chapter house of Abbots Paul of Caen and Richard d'Albini.[1] This necessitated rebuilding the south wall of the slype and greatly embellishing the south face of the south wall of Paul of Caen's transept.[2] The highly decorative western doorway to the new slype was originally constructed in one build with the west wall of the new chapter house (Illus. 2.4.3). After the Reformation the east and west doors of Gorham's slype were walled up and a plain round-topped doorway inserted in the south wall of the transept, resulting in the slype becoming a dim chamber (Illus. 2.4.4).[3] Into this doorway was inserted an ancient door covered with decorative ironwork (Illus. 2.4.5).[4] When Grimthorpe entirely reconstructed the slype in 1886 and rebuilt the south transept, he uncovered the stonework of the magnificent original west doorway to the slype and installed it in the middle of the south wall of the south transept (Illus. 2.4.3). The previous, plain doorway in the south wall of the south transept was obliterated and the door discarded (Illus. 3.5.1).



Illus. 3.5.1. The Romanesque west door of the slype, 'thrown aside amongst the builders rubbish and ruined' by Lord Grimthorpe's workmen. Drawn by Steinmetz, published in *The Building News*, 56 (1889), 795, cf. p. 815 (issue for 7 June 1889).

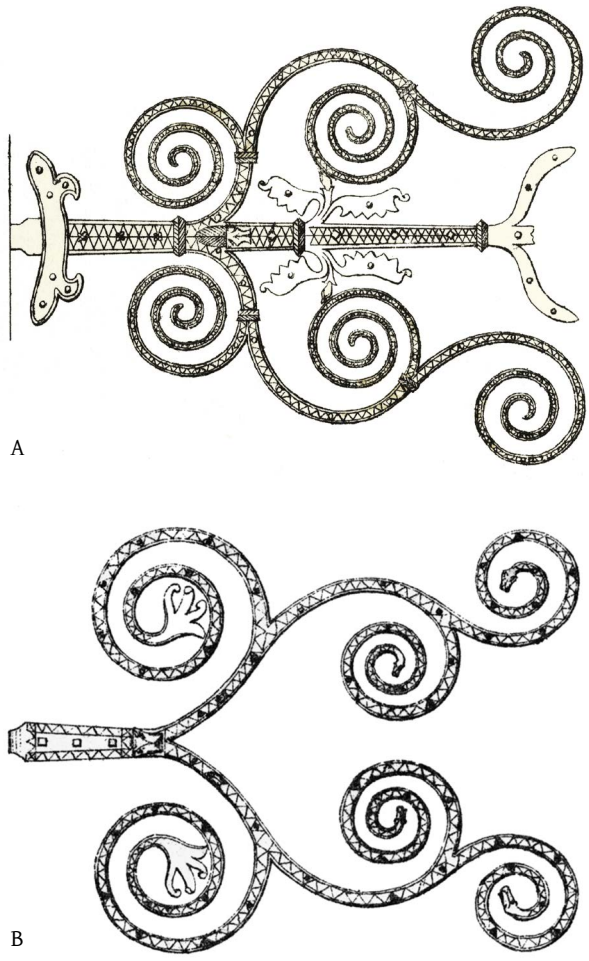
J. H. Steinmetz was among others who complained bitterly about this, with the result that the ironwork was salvaged and presented to the Victoria and Albert Museum by Archdeacon Lawrence.[5] The rebuilt slype doorway in the south transept accommodates a two-leaf, nineteenth-century door, altogether 1.28 x 2.47 m. (Illus. 2.4.3). The single door on which the original ironwork is now mounted in the Victoria and Albert Museum is slightly smaller, 1.17 x 2.29 m, probably reflecting the size of the post-Reformation plain doorway. These measurements demonstrate nonetheless that the old hinges could physically have fitted into the original doorway of the slype. It thus seems likely that the door and ironwork came originally from one of the two entrances to Robert of Gorham's slype and were therefore made between 1154/9 and 1166. As the western entrance from the cloister was the most frequented and important, the surviving ironwork probably came from there.

The ironwork consists of two lyre-shaped scroll hinges with a broken central bar between the scrolls (Illus. 3.5.2). The central bars are both decorated with four cut-out leaves. All the surfaces are covered with bold zigzag chisel patterns. Between the leaves on the central bar and at the end of each spiral scroll are raised animal heads. A bar at the top of the door and the brackets holding the hinges to the door terminate in fleur-de-lys and also have a lightly-chiselled zigzag surface pattern. On the brackets, the pattern is rather faint, while on the bar the zigzag is made with a double line. The bar at the top has two raised rosettes attached to it on folded stems, and a stepped circular boss for a door handle closing ring. Attached to the door above

[1] See above, pp. 39–41.
[2] See above, pp. 65–714.
[3] For a view looking east, see Fig. 3 from *The Builder*, 14 (1856), 331
[4] In Illus. 2.4.5 the bottom of the door and its ironwork are concealed by the step against which the door closed, cf. Illus. 3.5.1, upper left.
[5] Steinmetz 1889. Sheet 2, drawn in 1888, includes this picture of the slype door when discarded, and a letter to the *Times* dated 6 October 1888 complaining about it. Steinmetz's drawing of the discarded door was subsequently published in *The Building News*, 56 (1889), 795, cf. text on p. 813 [issue of 7 June 1889].



Illus. 3.5.2. The Romanesque ironwork of the west door of the slype, mounted on modern woodwork: Victoria and Albert Museum, London, Ironwork cat. 356/1889 (copyright V&A: photo, GF 738).



Illus. 3.5.3A–B. The Romanesque ironwork of the west door of the slype (above), and of the inner door of the north-west porch (below), drawn by R. and J. Brandon: the earliest known record (Brandon and Brandon 1847).

the strap is another similar rosette and a separate fleur-de-lys. The door has a crude staple and hasp.

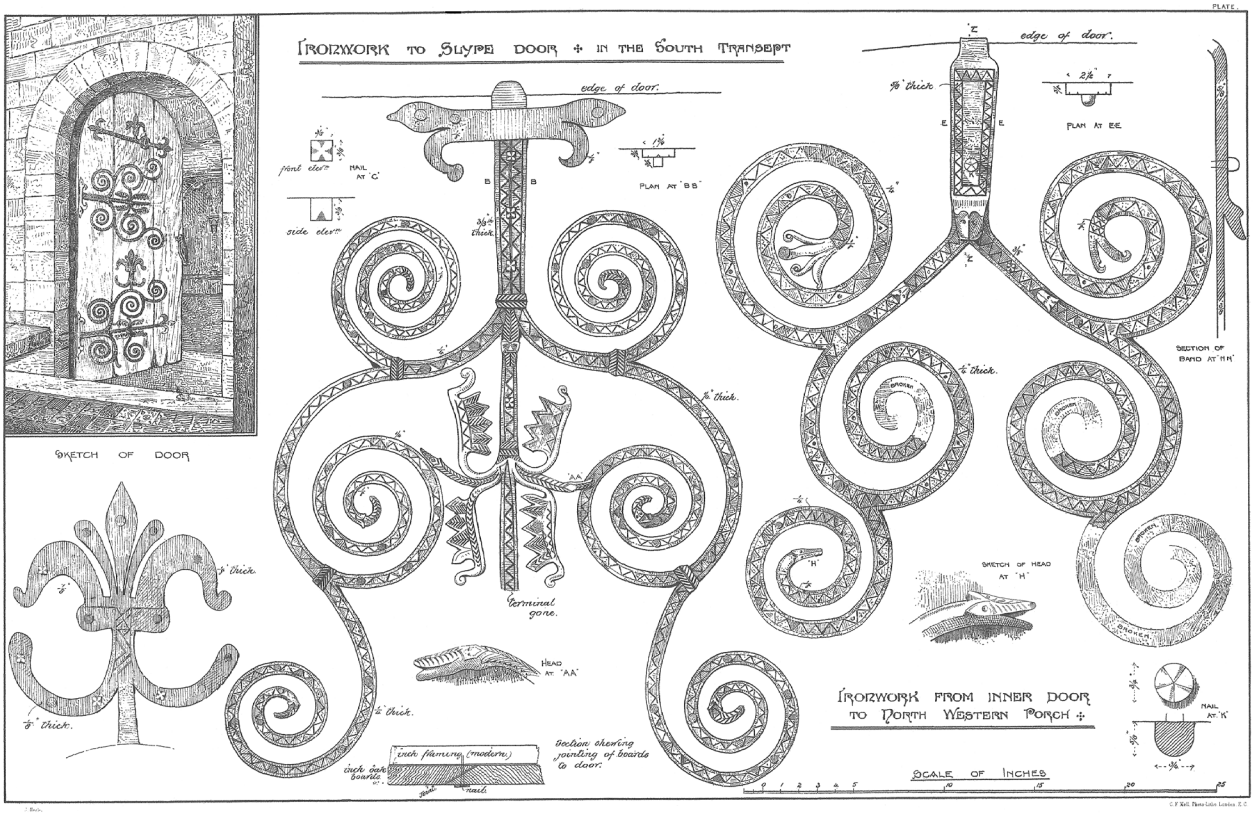
Antiquarian records of the door are ample but somewhat contradictory. The earliest published drawing is in Brandon and Brandon's *Analysis of Gothic Architecture*, from 1847 (Illus 3.5.3A and B).[6] This shows only the upper hinge, with all six spirals surviving and the central strap ending in two forward-pointing curved bars with a broken central stem between them (now lost). Lee shows a convincingly detailed drawing of the complete door *in situ*, drawn in 1849 (Illus. 2.4.5). Here the lower hinge is battered, with only three scrolls, and the bottom of the door is hidden, tucked behind a step. The top fleur-de-lys strap has lost its left terminal. In addition to the vertical fleur-de-lys on the top strap, a similar feature has been tacked on to the lower hinge. The medieval door itself is impressive, with exceptionally wide boards showing the quality of the timber that was available to St Albans Abbey in the twelfth century. The plank on the opening edge has been replaced and a coarse hasp added. The drawing appears to be careful and accurate because it even shows traces of the lost scrolls visible in the wood at the bottom left of the door. Middleton sketches something quite different in 1864.[7] He completes the fleur-de-lys terminal on the top bar. He draws a line across the bottom few inches of the door and writes 'step' to indicate that the door continues below the step. His lower hinge now has five scrolls, the bottom right shorter than Lee's version, but the two scrolls left complete.

Neale in 1877 shows the door open, its lower edge visible behind the step (Illus. 3.5.4).[8] Now the iron is almost complete, with missing terminals added and five complete scrolls along the bottom hinge. Neale gives

[6] Brandon and Brandon 1847, Section 2, Metalwork Pl. 1.

[7] Middleton 1864: Society of Antiquaries, Middleton Collection, drawing dated 7 June 1864.

[8] Neale 1877, Pl. 29.



Illus. 3.5.4. The Romanesque ironwork of the west door of the slype as located in the south transept (to left), and of the inner door of the north-west porch (to right), drawn by John Neale (Neale 1877, Pl. 29)

an enlarged detail of the lower fleur-de-lys cluster, a feature which does not survive on the Victoria and Albert door. Lastly Steinmetz in 1889 (Illus. 3.5.1) seems to confirm Neale's version. Here the discarded door lies on its side with only the fleur-de-lys features still attached. However, it shows ghosts of the lyre scrolls surviving in the wood: two complete sets with ample wood continuing below the bottom hinge.

On its reception at the Victoria and Albert Museum in 1889, the ironwork is described as 'sixteen pieces of hinges and other fittings of doors removed from St Alban's, old and defective'.[9] The ironwork was mounted on a new door and some crude replacement scrolls added, notably to the bottom hinge (Illus. 3.5.2). Which of these artists told the truth? Lee appears to be the most objective, interested in the whole view, carefully observing light and texture. Brandon had an agenda to show 'perfect models' to serve as future design templates; Neale was interested in the minutiae of construction with a view to replication, while Steinmetz was polemically concerned with preserving an important artefact, hence the latter three would benefit from perfecting the less complete truth.

The lyre-shaped hinges appear to be contemporary with Robert of Gorham's slype and because of this documented date-range provide an important fixed point in the otherwise poorly documented development of twelfth-century decorative hinges. The surface pattern struck with a chisel was a simple and fairly common device used to enhance the surface texture of the straps. Examples of criss-cross and zigzag are found throughout the twelfth century from Stifford, Margaret Roding, and Eastwood (north door) in Essex, and from Canterbury Cathedral (north door, north choir aisle, dated by dendrochronology to *c*.1175).[10] Three features of the St Albans hinges are of particular significance: they are the earliest surviving examples of a more sophisticated fashion in door hinges which developed towards the end of the twelfth century. First, the lyre-shaped hinges are the earliest known attempt to elaborate on the common twelfth-century C-shaped hinge. By the end of the century, designs frequently became more fluid and extensive, with scrollwork spreading all over the door. Other doors showing the evolution from C-shaped hinges to flowing scrollwork are at the Oxfordshire churches of Sparsholt (*c*.1185–95), St Thomas the Martyr, Oxford (1189–91), Faringdon

[9] Victoria and Albert Museum, Ironwork catalogue 356/1889.

[10] Fletcher and Tapper 1984, 123. All the ironwork comparisons mentioned here are catalogued and illustrated in Geddes 1999.

(*c*.1200), and Uffington (*c*.1220–50); at Lincoln Cathedral, north transept, north wall (1192–1200); and at Caistor, Lincs. (early thirteenth century).[11]

The second and third features, the raised animal heads and foliage, are motifs which became common in the thirteenth century and are first found at St Albans. The raised animal head became a common convention for door decoration in France, Spain, Germany, and Scandinavia. Although the motif had been used since prehistoric times, its earliest survival on iron door hinges in England is at St Albans. It was used at about the same time on the (undated) door at Hartley, Kent, and later in the twelfth century at Castle Hedingham, Essex, Little Hereford, Herefs., and Faringdon and Uffington, Oxon. From the thirteenth century they are found, for instance, at St George's, Windsor and York Minster, both on a cope chest and on the chapter house doors.[12] The leaves at St Albans have no obvious parallels in the twelfth century: foliage terminals became popular in the thirteenth century when they could be accurately duplicated by die stamping. This technique was first used on English ironwork on the doors of St George's Chapel, Windsor, in 1247–9.[13] It is to be expected that a monastery such as St Albans, which excelled in the production of fine metalwork in the twelfth century, should also have pioneered new designs in wrought ironwork.[14]

The cruder pieces of ironwork ending in fleur-de-lys terminals are clearly later additions. They may even have come from another door. The strap with the door handle boss was already out of reach at the top of the door when it was first recorded. Fleur-de-lys terminals are used on door furniture throughout the Middle Ages and thus do not provide any form of dating evidence. However the flat cut-out rosettes are found on later medieval objects such as the cupboards in the Zouche Chapel, York Minster (1395–1410), and the large cupboard of post-1390 in the Westminster Abbey muniment room,[15] so the St Albans fleur-de-lys straps are likely to be *c*.1400 or later.

The Brandons and Neale both record another lyre-shaped hinge on the inner door of the north-west porch (Illus 3.5.3A and B and 3.5.4).[16] It was very similar to the hinges on the slype door but slightly simpler. It lacked the central strap with foliage, and the two scrolls ended in amorphous seaweed-looking terminals. The west front was begun by Abbot John de Cella (1195–1214) and completed by Abbot William de Trumpington (1214–35).[17] It is unlikely that in an abbey with such abundant artistic talent, new hinges for the west front would have copied those in the slype made at least 40 years earlier. These hinges were probably therefore taken from some part of Robert of Gorham's building, perhaps even from the east door of the slype leading to the monks' cemetery, a slightly less important entrance than that from the cloister. This could have occurred after the dissolution, when the slype was walled up and the putative west door moved to the south transept.

The so-called 'Pilgrim's Door' in the north transept also has an ironwork motif in the centre of the door, inspired by the slype hinges (Illus. 3.5.5). The design is cross-shaped, made up of back-to-back scrolls with a chiselled zigzag surface pattern, and a pair of leaves at the top and bottom like those from the slype door. The ironwork is described as eleventh-century by the Royal Commission,[18] but it is more likely to be a reproduction or new design made in 1889 by Grimthorpe when he



Illus. 3.5.5. The 'Romanesque' ironwork, probably of 1889, on the outer face of the so-called Pilgrim's Door', in the north wall of the north transept (NMR, BB80/1057).

[11] Geddes 1999, 136–40.
[12] All catalogued and illustrated in Geddes 1999.
[13] Geddes 1999, 153–7.
[14] Oman 1932, 221ff.
[15] Fletcher and Tapper 1984, 123; Geddes 1999, 219–21.
[16] Brandon and Brandon 1847, Section 2, Metalwork Pl. 9; Neale 1877, Pl. 29.
[17] *VCH Herts* 2, 484–5.
[18] RCHM 1910, 184.

remodelled the north transept.[19] It shows no signs of wear and tear. The iron scrolls have very regular, even edges suggesting that the original bars were produced in a rolling mill and not hand hammered; the surface chiselling is much less confident than that on the slype door which would indicate they were made by two different smiths; and lastly the ironwork on the Pilgrim's Door was not recorded in the very thorough investigations by Brandon and Brandon in 1847 and Neale in 1877.[20]

[19] Steinmetz 1889.

[20] Brandon and Brandon 1847; Neale 1877.

PART 3

6. THE VAULTED ARCHITECTURE OF THE FOURTH FIFTEENTH-CENTURY CHAPTER HOUSE

by the late RICHARD K. MORRIS

Preface

This report is essentially the account I rendered in 1988, with some additions following further research on the stones carried out by my students and myself between 1991–4, and now updated with a revised final section and taking account of some of the more recent literature. I suggest that the report should be seen in the context of the state of medieval archaeology around 1979–80, when I carried out the main fieldwork/assessment on the stones. Very few practitioners in the fields of archaeology and architectural history at that time had the relevant experience and knowledge to make accurate assessments of medieval worked stones. There were notable exceptions, of course, such as Dr Lawrence Butler and the late Stuart Rigold, and my friend, David Walsh, who had just started recording and reconstructing the architectural finds at Bordesley Abbey.

My involvement at St Albans came about through a chance visit to the cathedral in 1979; I did not see the actual excavation the year before. My visit and subsequent research coincided with the publication of the first fruits of my art historical investigations into English later Gothic moulding profiles.[1] Shortly afterwards Dr Walter Leedy's book on Fan Vaulting appeared,[2] and he came to St Albans to see the pieces of fan vault, which we thought were terribly exciting at the time. The finds from the chapter house site constitute my first foray into assessing worked stones from a large archaeological excavation, and I ask the reader to appreciate that this report has most significance for me as a pioneering essay in attempting to identify, provenance, and date fragments of medieval masonry, regardless of any merit it may have as an architectural history of the fifteenth-century chapter house. All the worked stones relating to that building, and which have been retained, are now stored in the nave south triforium of the abbey church.

[1] Morris 1978 and Morris 1979. I have carried out many similar assessments since, the ones on monastic sites summarized in Morris (2003).
[2] Leedy 1980.

Acknowledgements

I am particularly indebted to Martin Biddle for stimulating discussions we have had on numerous occasions, which have substantially increased my understanding of this material; to Helen Paterson for hospitality, and for her boundless energy in organizing, assisting and encouraging; and to Hamish Robertson for his endless patience in producing the reconstruction drawing of the fifteenth-century chapter house interior. I am grateful to Walter Leedy Jr. (in 1980) and Phillip Lindley (in 1988) for generously sharing with me their research on fan vaulting and on late Gothic at Winchester Cathedral respectively. I shall always remember with pleasure the help with sorting, recording, and interpreting the worked stones from my students from the History of Art department at Warwick University, especially initially (about 1980) Cliff Brigden, Chris Coombs, John Downey, John Edwards and Suzie Potter, and later (about 1991) Chris Cobb, Linda Monckton, Geoff Quilley and the late Phil Ap Iowerth, and in 2000 Linda Monckton again, Jamie Preston, and Matt Crossick. I am also much indebted to the departmental photographer, Alan Watson (History of Art, Warwick University), for making the initial photographic record of the finds (all the negatives are still kept in the Department); and to Maureen Bourne, curator of the Department's Slide and Photograph Library, for providing digital copies of the relevant photographs for the illustrations in the final version of this paper.

Introduction

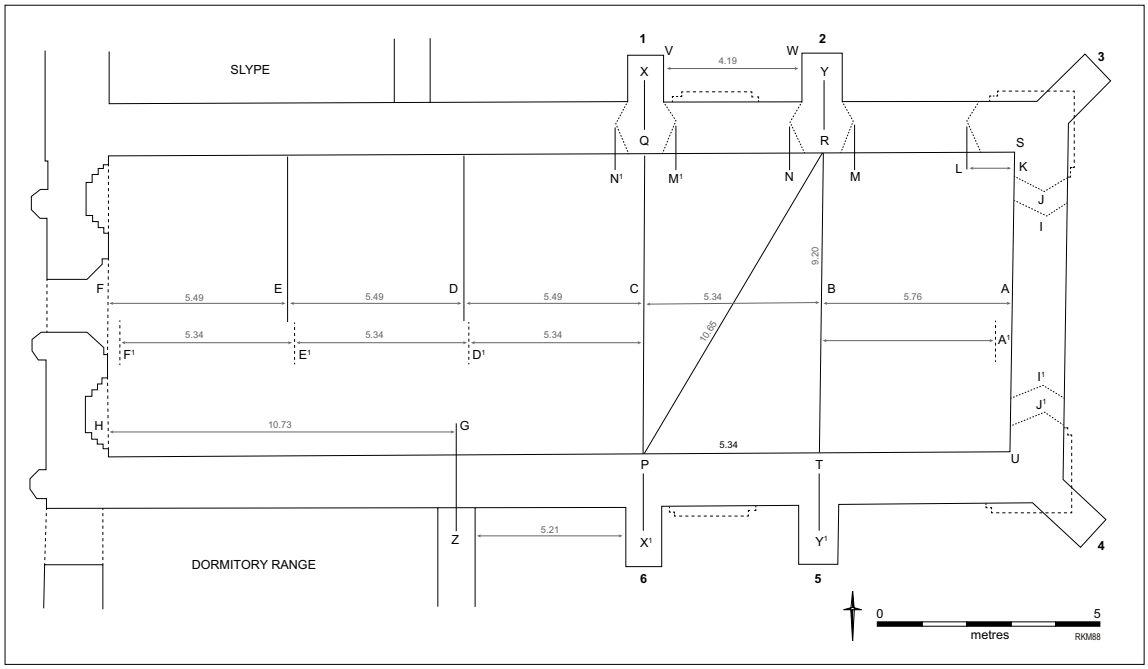
Before the 1978 excavation nothing was known about the fifteenth-century chapter house, beyond the brief documentary references in the Register to its remodelling during the second half of the century in the time of Abbots John of Whethamstede and William Wallingford. However, the exceptional quantity of late Gothic masonry fragments uncovered during the excavation has made it possible to attempt to reconstruct features of its design and have transformed our knowledge of this important building. Therefore the report will begin with a review of the information

derived from the study of the finds, and will conclude with an assessment of the architectural history of the new chapter house and an evaluation of its style.

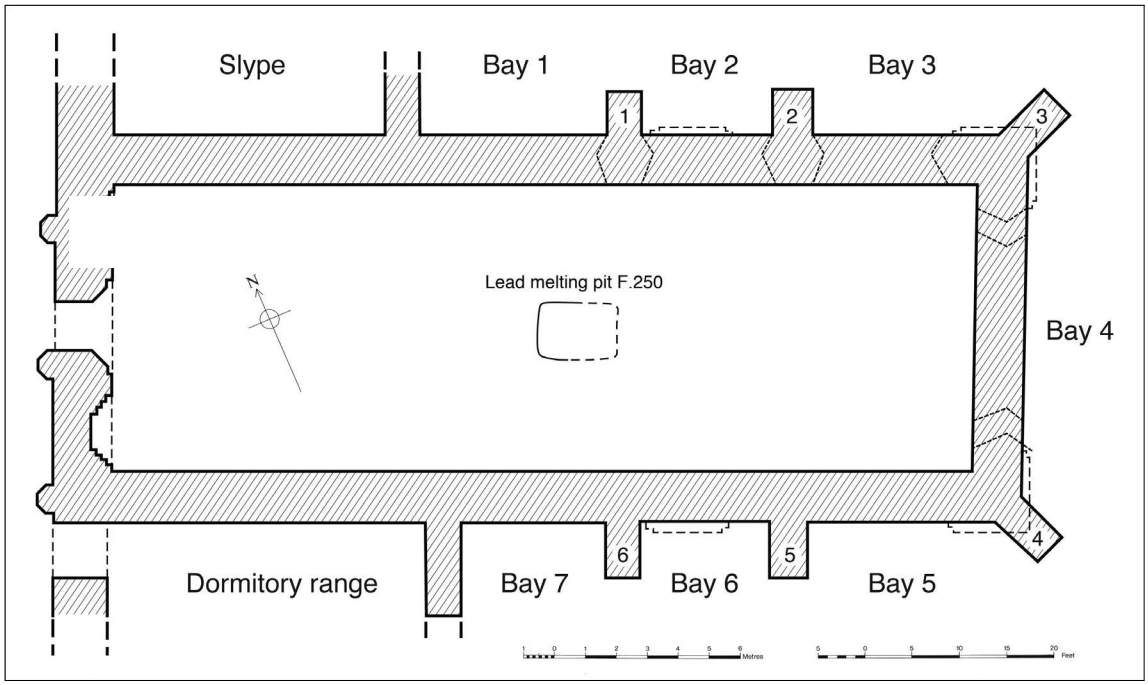
1. The vault

It is appropriate to commence with a discussion of the vault, not only because fragments from it constitute by far the largest category of architectural finds, but also because any attempt to reconstruct its design involves an appraisal of the plan and layout of the chapter house.

From the excavations, it is known that six large buttresses were added to the eastern half of Abbot Robert's edifice: two diagonally abutting the twelfth-century pilaster buttresses at the north-east and south-east corners, and two lateral buttresses on each of the north and south walls (Illus. 3.6.1, 1–6). They were



Illus. 3.6.1A. The fifteenth-century chapter house: diagrammatic plan showing dimensions and features relevant to the fifteenth-century remodelling.



Illus. 3.6.1B. The fifteenth-century chapter house, showing Buttresses 1–6 and Bays 1–7, after Illus. 3.6.1A.

ashlar faced externally, in contrast to the use of brick with ashlar quoins for the twelfth-century buttresses. On average they were about 1.18 m (3 ft 10½ in.) thick and projected about 1.52 m (5 ft) from the exterior wall plane at ground-level.[3] Their masonry did not survive above this level, so no stylistic features exist to provide dating evidence. Nonetheless, the archaeological levels which contained them were late medieval, and as there is no documentary or other form of evidence that any major work was undertaken on the main body of the chapter house since Abbot Robert's time, it can be assumed that they belong to the fifteenth-century reconstruction begun by Abbot John of Whethamstede.

The spacing of the new buttresses ultimately defined the arrangement of the high stone vault. Internally they imply a new articulation of five bays, thus doing away with the layout of three square bays which had prevailed since the 1160s (Illus. 2.3.3).[4] The two easternmost bays of the new system are clearly defined by the positions of the buttresses, and their combined length internally from east to west is 11.10 m (36 ft 5½ in.) (Illus. 3.6.1, A–C).[5] This dimension is very close to two-fifths of the total internal length of the chapter house, at 27.58 m (90 ft 6 in.) (Illus. 3.6.1, A–F), and so it is assumed that the remaining three-fifths was divided into three more bays. Some corroboration for this reconstruction is provided by the position of the pre-existing east wall of the dormitory range, which joins the chapter house on the south side in a suitable position to abut the south-west corner of the central bay in a five-bay arrangement (Illus. 3.6.1, Z).[6] It should be noted that physical evidence was completely lacking from the interior of the chapter house to locate the bay divisions more precisely. A considerable length of the interior face of the north wall, which retained its 12th-century masonry, survived up to three stone courses above the seat bench, and showed convincingly that no stone shafts or responds to accentuate the bay divisions had ever existed at this level (Illus. 2.3.3). This is in agreement with the evidence from certain other Romanesque chapter houses, such as those of Gloucester Cathedral (formerly St Peter's Abbey) and Wenlock Priory (Shrops.), where the lateral walls directly above the seat bench are also plain and unarticulated.

An analysis of the dimensions of the fifteenth-century chapter house based on surviving features produces some variation in the length of the five bays. The most clearly defined bay is the second from the east, and this must therefore be used as the best indication of the designer's intentions with regard to dimensions. It measures 5.34 m (17 ft 6¼ in.) between the centre axes of the lateral buttresses, X and Y (Illus. 3.6.1, B–C).[7] This dimension is very close to half the diagonal width of the bay, about 10.65 m (35ft, Illus. 3.6.1, P–R), and it may be that this constituted the main geometrical rationale of the design. Thus, the bay size approximates to half of one side of an equilateral triangle (Illus. 3.6.1, PRT).[8] However, the east bay is noticeably longer, measuring 5.76 m (18 ft 10¾ in.) from the inner face of the east wall to the centre axis of lateral buttress Y (Illus. 3.6.1, A–B).[9] Its greater length at ground-level is probably to be explained by the return of the seat bench along the east wall. The estimated depth of the bench, 480 mm (19 i–n.), accounts fairly closely for the difference between the length of 5.76 m for the bay A–B, and of 5.34 m for the model bay B–C. The way in which this discrepancy was handled at vault level is open to speculation, but the possibility is that a transverse arch of similar width to the bench was inserted to reduce the bay to the standard size for vaulting (Illus. 3.6.1, A^1).

For the three western bays, the combined length of 16.48 m (54 ft 1 in.) from the centre axis of buttress X to the presumed inner face of the west wall (Illus. 3.6.1C–F) gives an average length of 5.49 m (18 ft) for each bay if divided equally (i.e. 150 mm longer per bay than the model bay, BC).[10] One possible solution is that the combined length for the three western bays also included a transverse arch about 450 mm (18 in.) deep between the vault proper and the west wall. Then all the bays, except AB in Illus. 3.6.1, would have a uniform length of about 5.34 m (Illus. 3.6.1, D^1,E^1,F^1).[11]

[3] These observations and measurements were made on the north side and at the north-east corner, where the stonework and buttresses survived for several courses above seat-bench level. On the south side, the lateral buttresses projected about 1.80 m, but only traces of their footings remained. The site of the south-east buttress lay outside the excavation and, for the purpose of reconstructing the design of the vault, has been reconstructed on the plan as a mirror image of the north-east buttress. In fact, Martin Biddle tells me that reconstruction of the chapter house plan at 1:20 'revealed anomalies in the line of the south wall and benches only explicable by a slight kink south' in the former east bay of the 12th-cent. building; 'precise positioning is impossible' (pers. comm., 1988).

[4] Each bay approximately 9.14 m square (30 ft); the internal width was 9.20 m (30 ft 2¼ in.), almost exactly one third of the internal length, 27.58 m (90 ft 6 in.).

[5] Measured from the internal face of the east wall (Illus. 3.6.1, A), assumed to be level with the back of the east seat-bench, to the centre point (C) of the westernmost 15th-cent. buttress on the north side (X).

[6] There is no evidence that an equivalent abutment existed on the north side, but the slype would have afforded some support in the area of the two western bays; and some sort of flying buttress between the south-east corner of the south transept and the chapter house is also a possibility.

[7] On the south side, 5.29 m (17 ft 1¼ in.) between X^1 and Y^1 (Illus. 3.6.1).

[8] If one allows for slight tolerance because these measurements have had to be calculated of necessity from the ruined foundations, then it is quite possible that the geometry was exact at vault level.

[9] On the south side, 5.82 m (19 ft l in.) to the centre point in Illus. 3.6.1, Y^1.

[10] For the dimensions given above, the inner surface was assumed to be on the same vertical plane as the bases of the easternmost order flanking the entrance: that is to say, virtually level with the east edge of the pedestal recesses.

[11] Another possibility, though less likely, is that the two western bays should be treated separately. If the division between the second bay from the west and the centre bay were to be aligned with the centre axis of the dormitory range east wall, then the combined width of the



Illus. 3.6.2. Chapter house vault, some of the larger pieces of rib.

Turning now to consider the loose stones that were recovered during the excavation, pieces from the vault are the predominant survival amongst the fifteenth-century stonework. Hundreds of fragments of vault rib were identified, of the type illustrated in Illus. 3.6.2, identified here as 'Type 951'.[12]

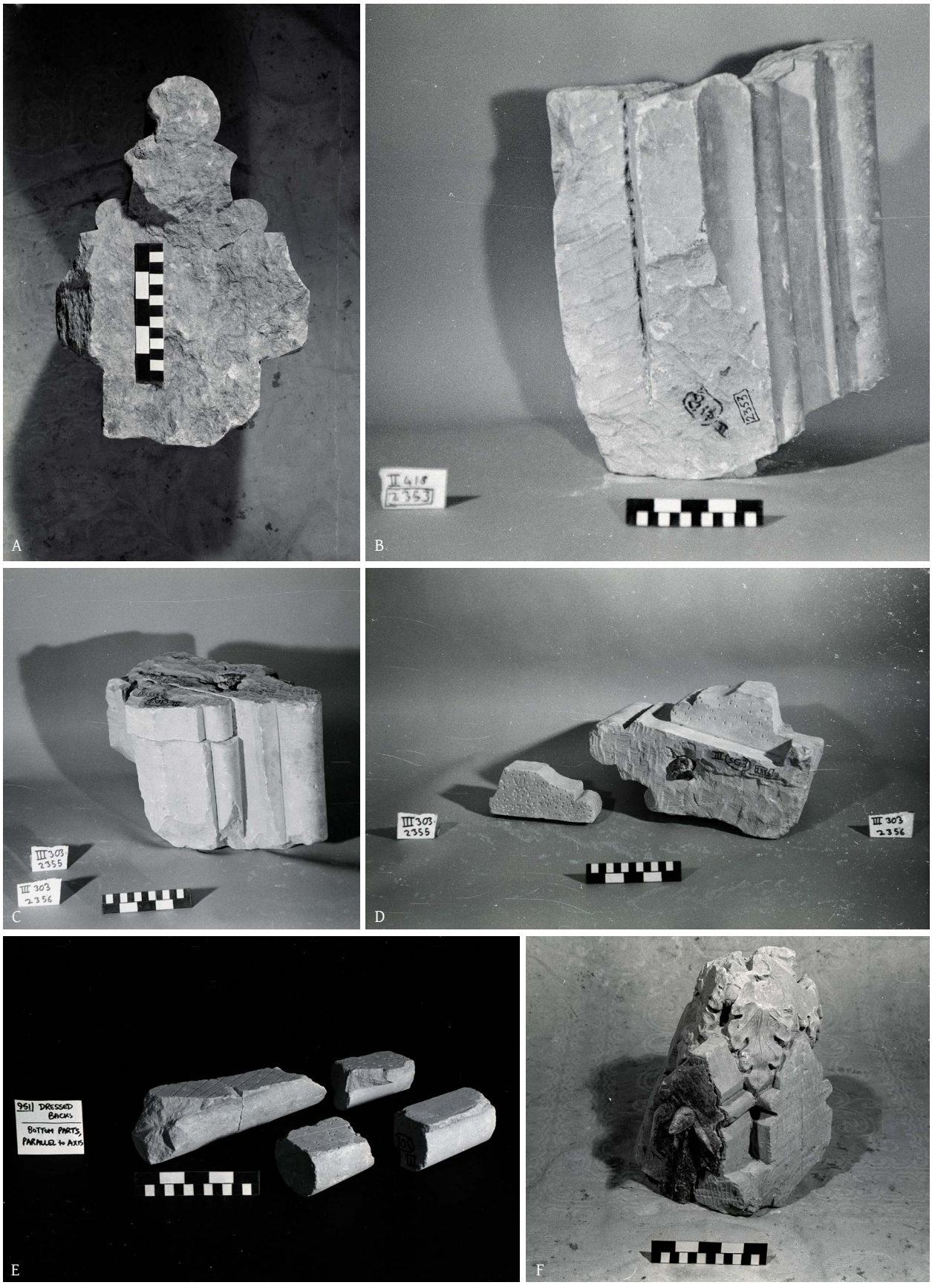
The evidence for their provenance derives, first, from the slight but discernible concave curvature from end to end, which most of the longer examples possess, and indicates that they derive from an arched context (Illus. 3.6.3B). Second, this is proven to be a vault, because of the two typical rebates cut into the back of each stone to receive the infilling of the vault cells (Illus 3.6.2, 3.6.3A, 3.6.4, 1C). There can be no doubt that these ribs derive from the chapter house vault, not only because of their extensive distribution throughout the site of the chapter house excavation, but also because their design is inconsistent with a context in the adjoining conventual buildings. The mouldings are too elaborate for the vaulted undercrofts beneath the dormitory range, and too large for the delicate vault of the east walk of the cloister. Rib stones for both these contexts were recovered in the 1978 excavation, and are of quite different designs (e.g. Illus. 3.6.3F).

A particular observation about the rib stones was the number that had been repaired with stone 'patches'. In one unique instance the rib and the patch belonging with it were recovered together (*RF 2355–6*; Illus. 3.6.3C–D), but otherwise the patching stones were found in isolation from their original context. Over 60 examples were recorded, almost all of which related to the axial roll moulding of the rib (Illus. 3.6.4, 1A), which generally either had a short patching stone inserted at one end or applied as a replacement along a longer length (Illus. 3.6.3E). The flat surfaces which joined each patch to the rib had been patterned in an intriguing variety of ways – punched or incised – to create a key for whatever substance held them in place, presumably mortar (Illus 3.6.3D, 3.6.3E).[13] The patches

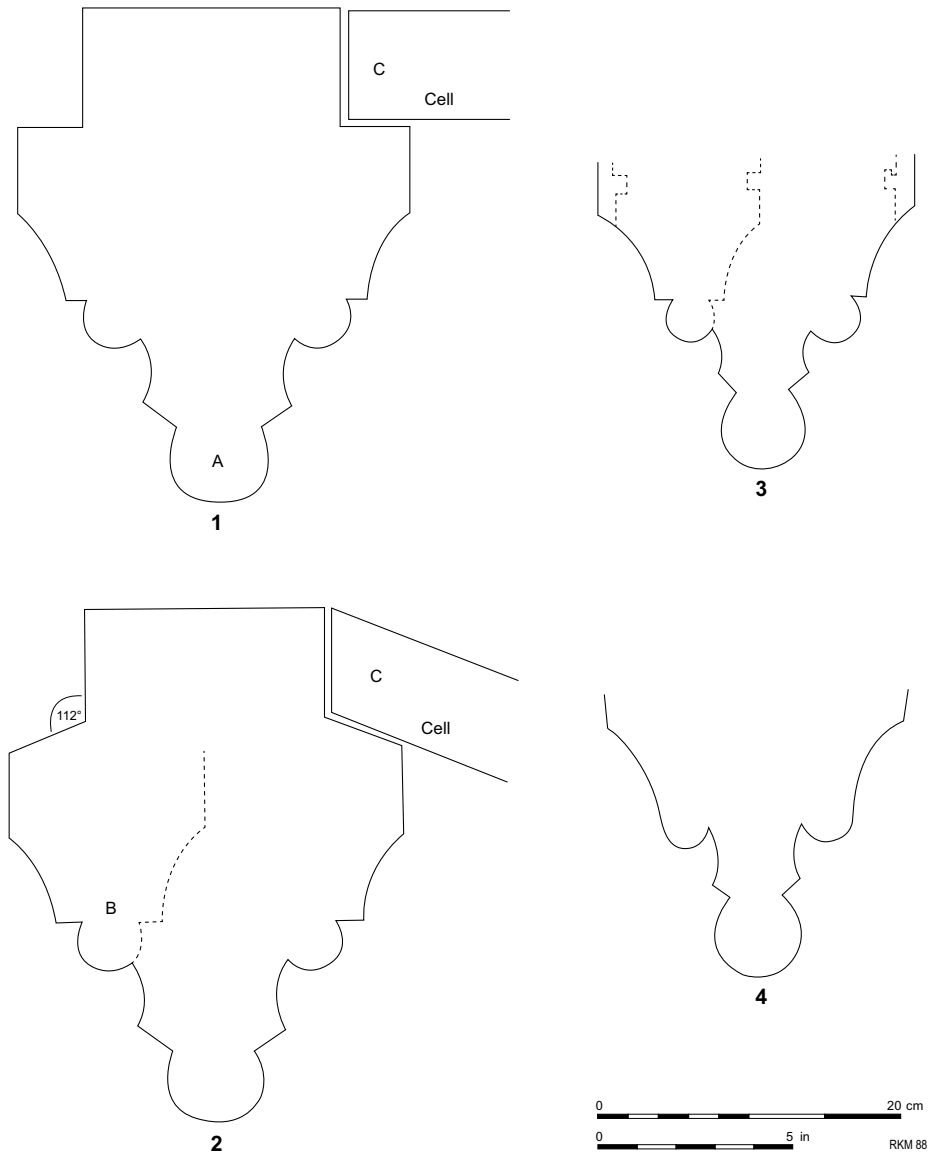
two western bays would be 10.73 m (34 ft 10 in.), which is very close to two model bays of 5.34 m each (Illus. 3.6.1, G–H). In other words, the centre bay might have been disproportionately wide, at 5.76 m (18 ft 10¾ in.), though this can be no more than speculation.

[12] The worked stones from the excavation, originally recorded as 'Recorded finds' (*RF*), were later sorted by their moulding profile into types, and each type was given a number by the author from T951 to T995. There can be many examples of each type-stone. In 2001, as part of the process to produce a Cathedral Inventory, and following Cathedrals Fabric Commission guidelines, these were each given a 17/400–460 number and their locations recorded in the lapidary store in the nave south triforium; see Morris and Monckton 2001, and below in Concordance, pp. 237–8.

[13] For a discussion of medieval methods of fixing patches, see Sampson 1998, 103–07, citing 13th-cent. examples from Wells Cathedral and documentary evidence. The repairs at Wells were executed using a white lime mortar, as well as a mastic mixture apparently made from wax, rosin and pitch; though no trace of either of these was observed on the St Albans fragments.



Illus. 3.6.3A–F. Chapter house vault, ribs. Scale 5in./125mm. A: vault, a section of a rib-stone (from Trench 3, Layer 303); B: vault, side view of a rib-stone, with the rebate for the cell at left (*RF 2353*); C: vault rib (*RF 2356*) with inserted patch (*RF 2355*); D: vault rib (*RF 2356*) with patch removed; E: vault, replacement patches for the axial roll of the main rib (*RF 2368*, top left); F: cloister, east walk, fourteenth-century foliage boss from the cloister vault.



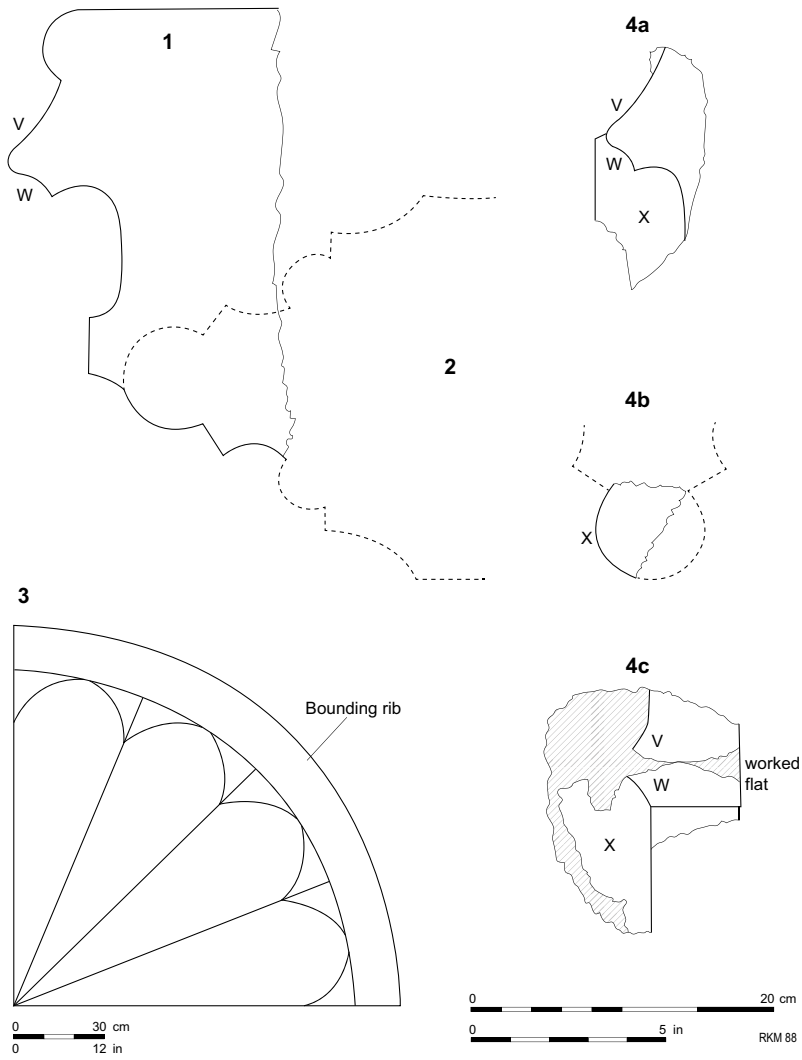
Illus. 3.6.4. Chapter house vault, ribs and comparisons. 1: main rib profile, *RF 2353*; 2: main rib profile with different rebate angle; and potential minor rib profile (B); 3: Oxford, Divinity School, rib & mullion profiles; 4: Oxford, Divinity School, main mullion profile.

must have fallen off at the demolition of the vault at the Dissolution and were left on site as useless fragments, which would explain why many more patches than complete rib stones were found in 1978. The use of patches or inserts to mend worked stones accidentally damaged during production, transport or assembly is a common practice in traditional masonry, and this is the most likely explanation here.[14]

The vault stones, like all the fifteenth-century worked stones recovered from the chapter house, were cut from Totternhoe chalk-stone, which may have been more prone to accidental damage than a limestone or a sandstone, especially in a monumental work like this vault.[15] Another possibility for some of the patches is that they were used to reinstate an area of the rib deliberately cut out for constructional reasons. It is noticeable that some of the longer lengths of axial roll moulding are tapered in their longitudinal section (e.g. Illus. 3.6.3E, top left), the flat back being generally at between 5–8° to the extrados of the rib. The angle

[14] If the carving of the block is near completion, it is more economical to patch it than to start the work all over again. Examples known to the author of patches in medieval stonework include those at Wells cited in the previous note (Doulting and Dundry limestones), and the canopies of the 14th-cent. monuments of Hugh III Despenser and Guy de Bryan at Tewkesbury Abbey (fine-grained oolitic limestone) (pers. comm., Bruce Induni).

[15] For Totternhoe stone in medieval architecture, see e.g. Tatton-Brown 2001, 200.



Illus. 3.6.5. Chapter house vault, bounding ribs. 1–2: *RF 2366*, bounding rib profile (solid line), superimposed on the main (radial) rib profile (dotted line); 3: diagrammatic plan of a quarter-conoid of a fan vault; 4: *RF 2433*: A, profile; B, horizontal section (solid line), superimposed on part of the main rib profile (dotted line); C, front face.

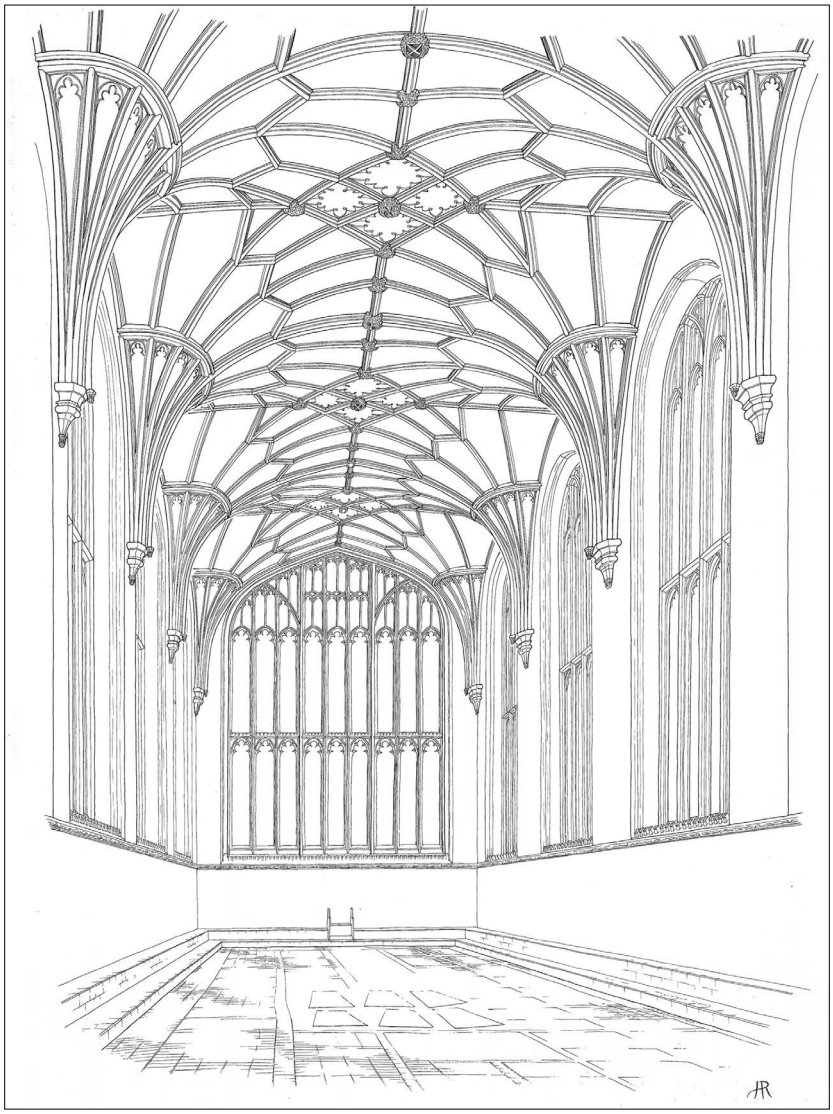
suggests that these ribs were close to the apex of the vault, and possibly that part of the front (extrados) of various rib stones had been cut away on the scaffold in order to insert temporary vertical wooden props to assist assembly of a complex vault.[16]

A smaller number of stones relating to fan-vault construction may also be assigned with some certainty to the chapter house vault. Where parts of the vertical rib survive on some of these pieces, the profile matches exactly the Type 951 rib profile (Illus. 3.6.5, 2). Almost 100 fragments of the fan-vault conoids have now been identified from the excavation, a quantity which suggests their original provenance was the chapter house.[17]

Unfortunately very few of the vault pieces are more substantial than a length of moulding knocked off the extremity of each rib stone, usually from the area of the prominent axial roll moulding (Illus. 3.6.4, 1A). Indeed, the fragmentary and broken state of the remains is a telling indication of the almost wholesale removal of the main blocks at the Dissolution, for re-use as building materials elsewhere. Inevitably, therefore, any attempt to reconstruct the vault and other architectural features of the chapter house is hampered by the loss of almost all the most useful stones. Nevertheless, painstaking post-excavation searches through all the

[16] *RF 2356* also has an iron dowel wrapped in lead surviving in one end (Illus. 3.6.3D), which would have provided an additional reinforcement in fixing to the next rib stone, suggesting that it was located at a position of potential stress in the vault, such as close to the apex.

[17] Trench 1, 7 pieces; Trench 2, 26; Trench 3, 51; Trench 4, 15 – total, 99 pieces.



Illus. 3.6.6. The fifteenth-century chapter house, interior reconstruction looking east.

fragments of worked stone revealed evidence for the vault's cells, springers, cusped decoration and pendant wall brackets, in addition to the vault ribs. Only the main corbels and any carved vault bosses have eluded detection, but they would have been such excellent stones for re-use on account of their size that they were all virtually certainly removed from the site in the sixteenth century.[18]

From the information gleaned from these fragments, it is possible to propound an hypothetical reconstruction for the vault (Illus. 3.6.6). The most remarkable discovery is that it must have been a combination of fan-vaulted conoids and a large-scale lierne vault, for which contemporary parallels are rare. Extant examples of a generally comparable kind are provided by the choir and nave vaults of Sherborne Abbey (*c.*1437–59 and *c.*1485–1504 respectively),[19] but the evidence implies that the chapter house vault consisted of less fan and more lierne, and that the inspiration for its design is to be sought more in the micro-vaults of chantry chapels (see further below).

The stones provided a lot of information about the construction of the vault, which combined 'rib-and-panel' with 'jointed masonry'.[20] The infilling ('web' or 'cell') between vault ribs had evolved to large single stones ('panels') in England by the later Middle Ages, in the fashion of major late Gothic vaults like those at Sherborne Abbey, St George's Chapel at Windsor, and the Divinity School at Oxford (Illus. 3.6.7).

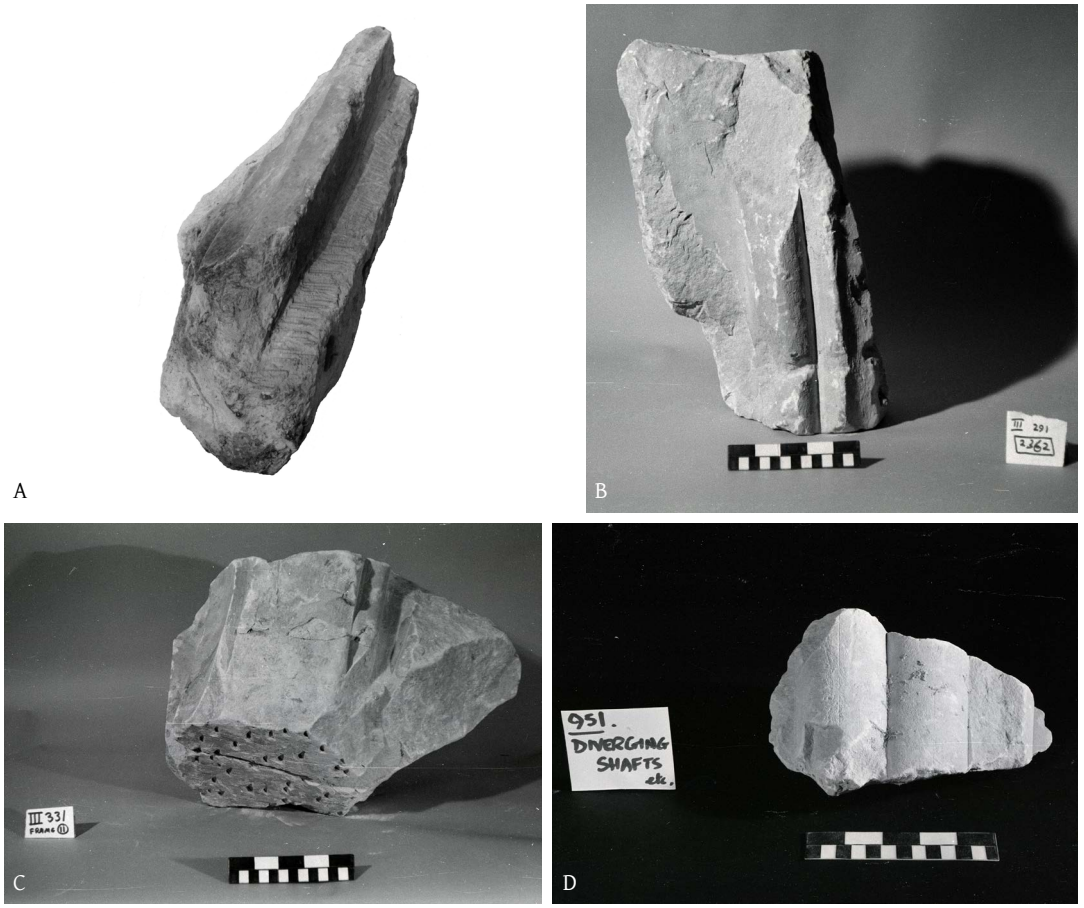
[18] For example, carved stone bosses taken from Merton Priory at the Dissolution were re-used for building materials at Nonsuch Palace; Dent 1970, 79–80.

[19] For Sherborne, see Monckton 2000.

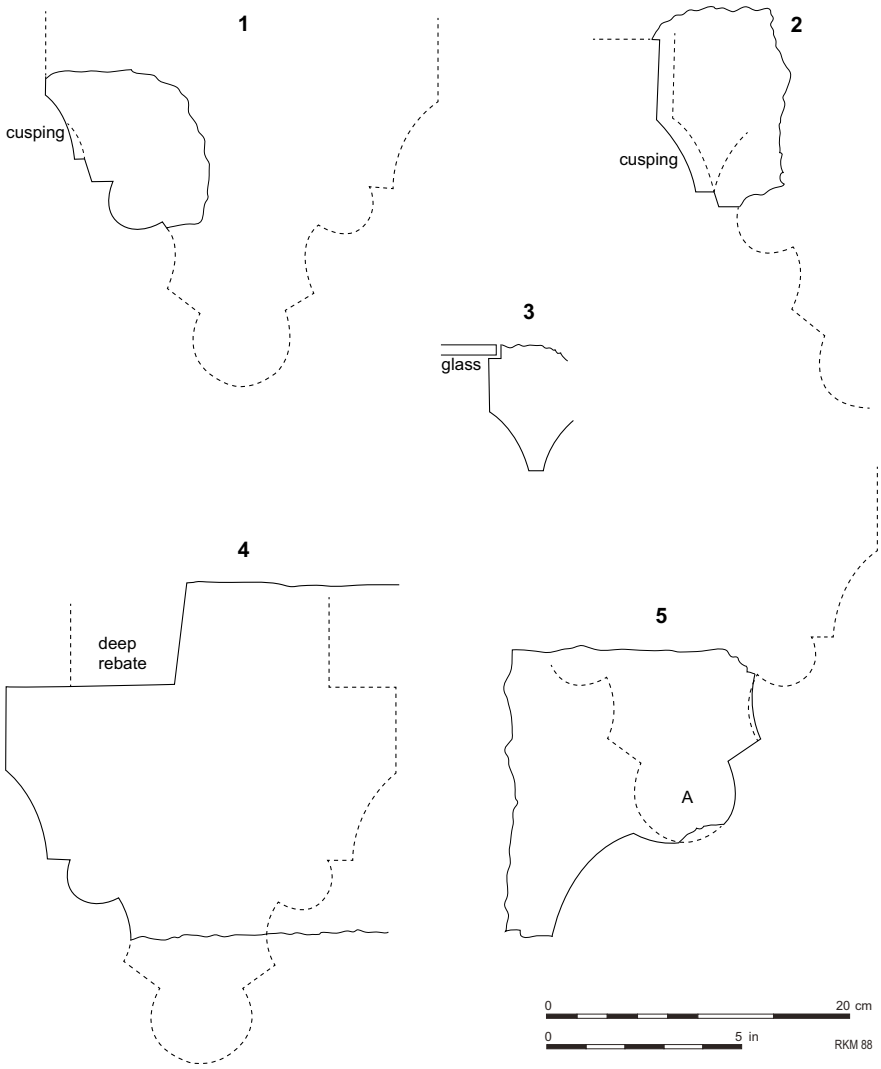
[20] For terminology, see Leedy 1980, ch. 2.



Illus. 3.6.7. Oxford, the Divinity School, interior.



Illus. 3.6.8A–D. Chapter house, stones related to the vault. Scale 5 in./125mm. A: vault, a large piece of wall-rib, with the rebate at right (*RF 3640*). B: stone with rib mouldings, possibly a wall-rib (*RF 2362*). C: stone incorporating parts of two rib profiles (*RF 3512*). D: vault, fragment from a vault springer (*RF 2479*).

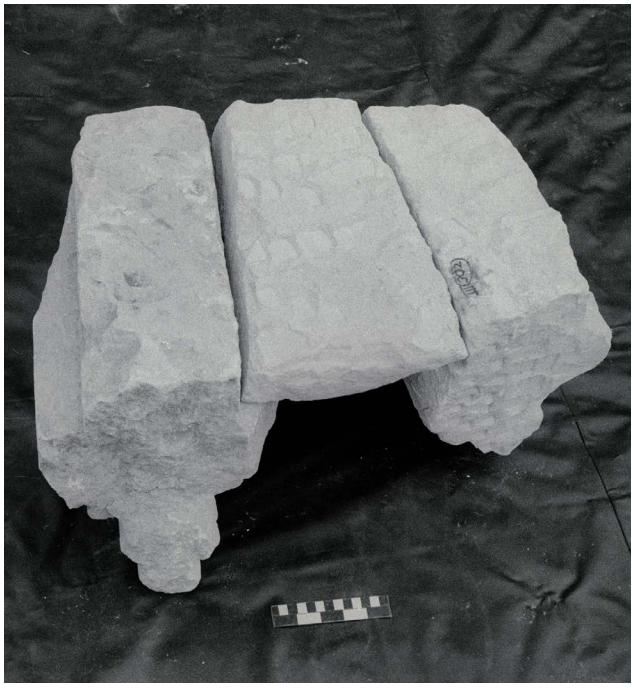


Illus. 3.6.9. Chapter house vault, profile details, superimposed on the main rib profile (dotted line). 1: *RF 2443*, rib-stone fragment with cusping. 2: *RF 2516*, fragment with cusping. 3: *RF 2520*, cusped fragment from window tracery. 4: *RF 3640*, probably a wall-rib. 5: *RF 2362*, perhaps part of a wall-rib.

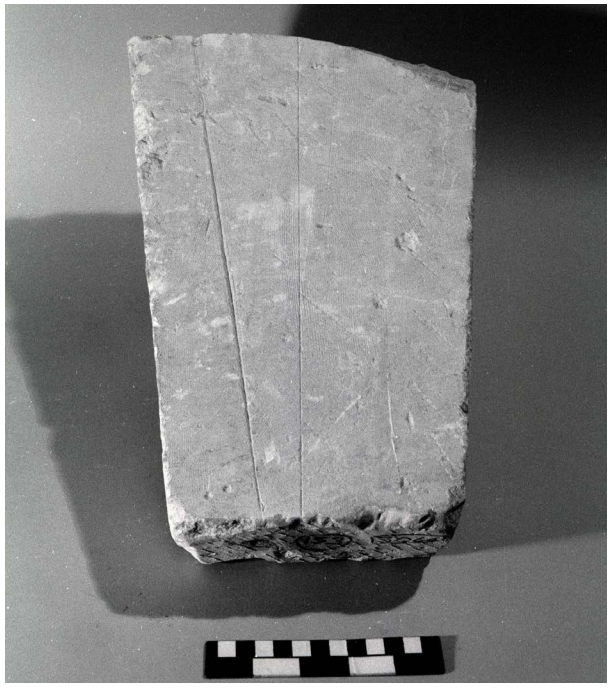
The evidence for this rib-and-panel construction at St Albans derives mainly from the rebates for the infilling on the backs of all the chapter house rib stones. Most of the surviving rebates approximate to a right-angle in section (Illus. 3.6.4, 1C), but in several places they are at an angle of about 110–120˚ to the perpendicular axis of the rib section (Illus 3.6.3A; 3.6.4, 2C).[21] The latter are presumably lengths of ridge-rib from the apex of the vault: the ones with the narrower angle of 120° perhaps from a transverse ridge-rib over the lateral windows. A very large piece of wall-rib (*RF 3640*) was also recovered in the excavation, and its function is indicated by its asymmetrical profile, with the deep rebate on one side only of the stone (Illus 3.6.8A; 3.6.9, 4).[22] Despite its severely damaged state, the mouldings of the upper

[21] A piece of Type 951 from Trench 3, 303 has an angle of 110° (Illus. 3.6.3A), and another from Trench 4, 108 has 120° ('3, 303' and '4, 108' denote Trench 3, Layer 303 and Trench 4, Layer 108 respectively; references of this type are used here when a Find Number has not been allotted).

[22] The stone, which is broken at one end, measures a minimum of 0.76 m (30 in.) long by 0.38 m (15 in.) wide.



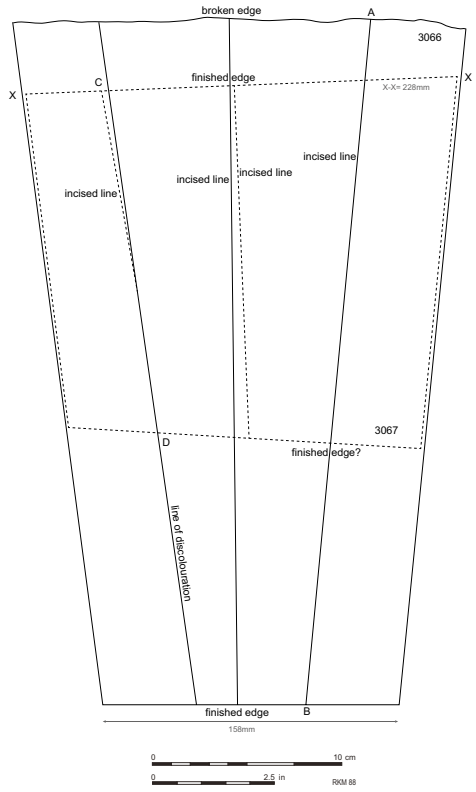
Illus. 3.6.10. Chapter house vault, piece of cell (*RF 3066*) reconstructed with two pieces of main rib, seen from the back. Scale 5 in./125mm.



Illus. 3.6.11. Chapter house vault, the most complete piece of cell, showing incised guidelines (*RF 3066*). Scale 5 in./125mm.

part of the rib profile are still discernible, proving without doubt that its provenance is the vault.[23]

In addition, at least six sections of vault cell ('panel') were identified, of which the two best preserved are *RF 3066–7*.[24] Both are large stones measuring between 76–86 mm in depth, and fit convincingly in the rebates of the surviving vault ribs, which have an average depth of 80 mm (Illus 3.6.4, 1C; Illus. 3.6.10).[25] Moreover, the incised guide lines are well preserved on the finished surface of each (Illus 3.6.11, 3.6.12), and these align with the edges of the rebate on the back of the ribs. The average width of the latter, 47 mm, is identical to



Illus. 3.6.12. Chapter house, cell stones from vault, *RF 3066* (solid line) superimposed on *RF 3067* (dashed line).

[23] Another largish stone of similar curvature which may be connected with the wall rib is *RF 2362*, in which the surviving mouldings are those of the lower part of the rib profile (Illus 3.6.8B, 3.6.9, 5). The stone preserves part of a hollow casement moulding adjoining the axial roll of the rib profile (Illus. 3.6.9, 5A and X), which might indicate that it formed part of the transition between the wall-ribs and the frame of one of the lateral windows of the chapter house (see Illus. 3.6.46, 1–2). Several other fragments also show the beginnings of a casement moulding adjoining axial roll A (e.g. *RF 2444*) and therefore would appear to belong with *RF 2362*, though the angle of the curvature of the casement to the axial roll moulding is slightly different. Another piece which also might conceivably be part of a window surround or transverse arch is *RF 3512* (Illus. 3.6.8C), a fairly large stone with some concave curvature, and which has proved difficult to assign to any specific part of the structure. It seems to incorporate the fragmentary profiles of at least two ribs, perhaps set at an angle to each other (Illus. 3.6.21, 3), but it appears too irregular to be part of one of the vault springings.

[24] Also *RF 3069–70*, which fit together, are probably part of another panel.

[25] Measured on a stone from Trench 2, Layer 418, as also the width of the rebate.



Illus. 3.6.13A–B. Chapter house, fragments of cusping. Scale 5 in./125mm. A: piece of cusping from the vault (*RF 2516*, left); fragment of cusping from glazed tracery, rear surface show glazing slot (right). B: fragment of vault rib with traces of cusping, top (*RF 2443*).

the distance between the lateral incised lines and the edge of the panel on *RF 3066*, and within 3 mm of the same dimension on *RF 3067* (Illus. 3.6.12, A–B and C–D). So there can be no doubt that at least part of the vault – probably a large part of it – was made up of rib-and-panel construction.

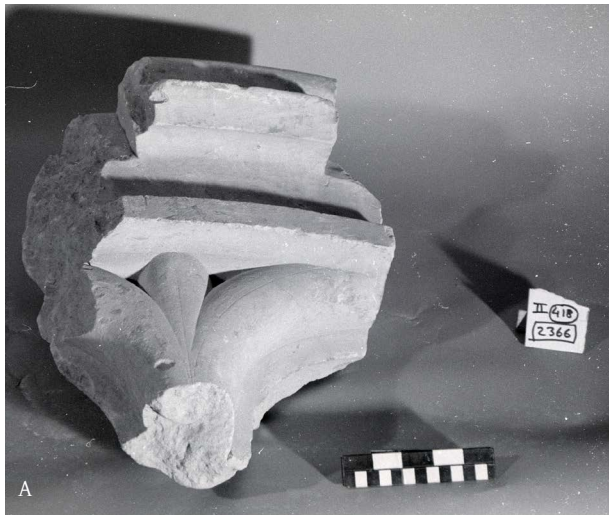
It is clear that the alternative technique of jointed masonry must have been employed on the heads of the panelling on the fan conoids, and perhaps in some other areas of the vault. It is an invariable feature in fan vaults and in many late Gothic vaults with cusped decoration (e.g. Illus. 3.6.19).[26] At St Albans, however, the evidence has been destroyed on virtually all the relevant stones. Typically only the axial roll moulding and parts of the immediately adjacent mouldings survive from the sections of panelled heads of the fan conoids (e.g. Illus. 3.6.14A–B): the back half of each stone, including the actual panel, has been broken off in demolition. *RF 3512* is the only piece of rib with part of a panel surviving as part of the same stone (Illus. 3.6.8C). Interestingly, the finished edge of the left panel runs diagonally to the axis of the radial rib (Illus. 3.6.8C, left), and this helps explain a surviving piece of cell (*RF 3566*), in which the edge is also diagonal to the axial line incised on the cell's surface. In both pieces the divergence from the main axis is about 13°, so when they are fitted together, the axial line on the cell piece is parallel with the axial roll moulding of the rib. Examples of diagonal assembly between a loose piece of cell and a piece of jointed masonry panel appear to be quite common in fan vaults from their inception (e.g. Gloucester Cathedral cloister).[27]

The existence of jointed masonry construction may also be inferred from the existence of cusped decoration in some parts of the vault. The evidence relies on one piece of stone (*RF 2443*), which alone brings together carved cusping and a moulding profile that definitely belongs with the rib profile (Illus. 3.6.9, 1). *RF 2443* should be associated with at least 12 other fragments, which have the same profile in section for their cusping but have lost any other mouldings by which they can be identified with certainty; the best example is *RF 2516* (Illus 3.6.9, 2; 3.6.12, left).[28] These stones superficially resemble those of another group of cusped fragments derived from window tracery (e.g. *RF 2520*), but the profiles of their cusped parts are different on close examination. More importantly, the second group is

[26] See Leedy 1980 for numerous illustrations of this technique, e.g. Pls 84–86.

[27] ibid., Pl. 45; Leedy also illustrates an excavated piece from Cirencester Abbey, Pl. 124, apparently similar to *RF 3512*.

[28] Of the twelve pieces, five are definitely from some sort of blind tracery, almost certainly from the vault: pieces from Trench 1, Layer 53, Trench 2, Layer 625, Trench 3, Layers 82, 190, Trench 4, Layer 26. The other seven are too fragmentary to show any remains of blind tracery, but they are related to the former by details of their mouldings: pieces from Trench 1, Layer 170, Trench 2, Layer 350, Trench 3, Layers 300, 331, 341, Trench 4, Layer 102 and *RF 2517*. Including *RF 2443* and *RF 2520* described in the main text, the distribution of the pieces is fairly even across the area excavated – Trench 1, 3 pieces; Trench 2, 2; Trench 3, 6; Trench 4, 3.





Illus. 3.6.14A–B. Chapter house vault, two pieces of fan vault, showing the bounding rib. Scale 5 in./125mm. A: *RF 2366*. B: *RF 3515–8* reassembled.

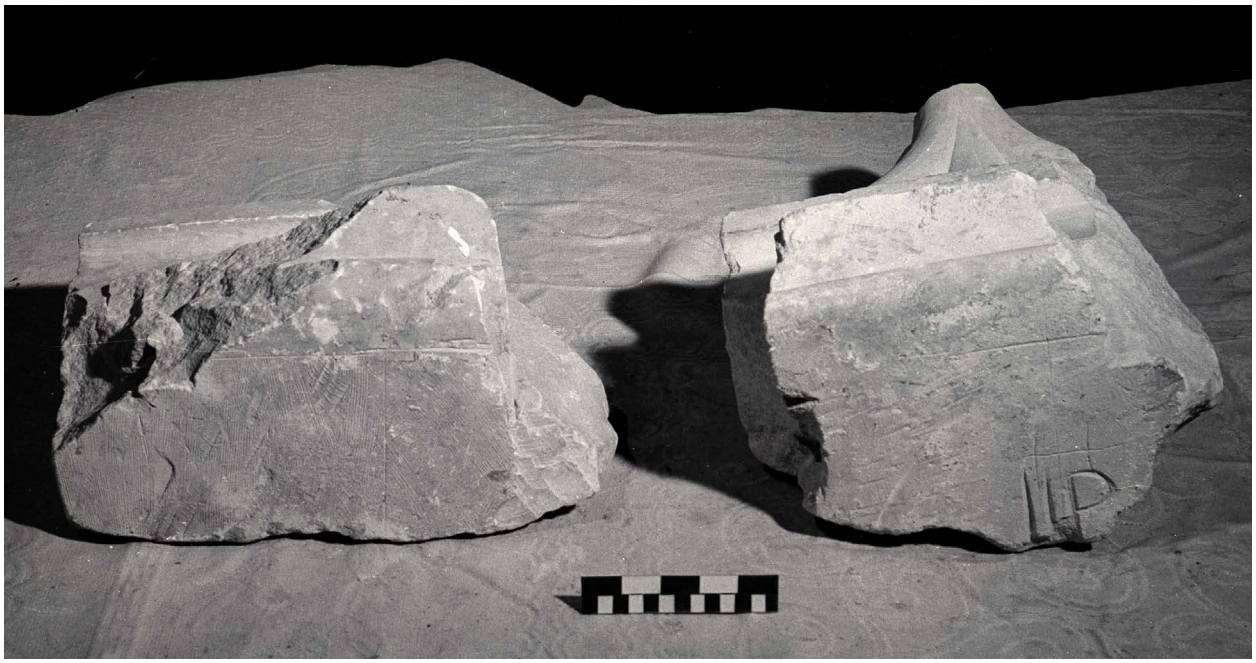
characterized by the remains of a slot for glazing (Illus 3.6.9, 3.6.13A, right-hand piece).

In the cusped stones assigned here to the vault, instead of a glazing slot, there is evidence that the cusping directly adjoined a masonry surface at about 90°, and was presumably carved from the same block of stone (Illus. 3.6.9, 2). The masonry surface would be the cell of the vault, and these stones therefore constitute additional evidence for the employment of jointed masonry construction. Unfortunately they are too fragmentary to provide any clues as to their location in the vault, so they cannot be used to prove that the fan conoid panels were cusped. None of the arched heads from the surviving panel pieces show any trace of cusping, but they have all lost the inner mouldings from which the cusps would have been carved (Illus. 3.6.14A–B). As virtually all known fan vaults have cusped heads to their panels, it is very likely that this embellishment also existed on the fan conoids of the chapter house.[29]

Twenty-five stones recovered can be identified as points of intersection between two or more ribs, though unfortunately all are fragmentary, and only a few of them preserve enough detail to allow any useful observations to be made. As a group, they reveal three things. First, there is no evidence from these or any other excavated fragments for the existence of carved bosses, and in fact the 12 intersections of which enough of the underside is preserved provide positive evidence that at least some of them were definitely devoid of bosses (Illus. 3.6.17A–B).[30] However, the possibility that the main intersections had bosses cannot be discounted: every one of them may have been removed at the demolition, as noted above. A combination of major intersections with bosses and some minor intersections without them would be quite typical of late Gothic lierne vaults, such as the high vaults of Sherborne Abbey, St George's Chapel, Windsor, and Winchester Cathedral presbytery (e.g. Illus. 3.6.29). Elaborate bosses were rarer in pure fan vaults, but the cumulative evidence suggests that the St Alban's vault was not of this type anyway, but a hybrid.

Second, the majority of the surviving intersections show that the moulding profiles of the ribs at each intersection were not exactly aligned: to use Willis' term, they do not 'mitre'.[31] This means that some of the ribs were not perpendicular to the surface of the vault (e.g. Illus. 3.6.18).[32] Such distortion was normal in decorative rib vaults until the advent of the fan vault in the later fourteenth century, which established the technique of all the ribs being cut perpendicular to the vault surface.[33] Subsequently, this technique was applied to all fan vaults of which we have knowledge. It also became employed more widely for many of the ribs in some late Gothic lierne vaults, such as the high vaults of St George's Chapel, Windsor. In this context the most remarkable aspect of the chapter house vault is that apparently it combined the mitred technique alongside 'unmitred' intersections; for there can be little doubt that the former technique was used for the fan conoids of the vault.

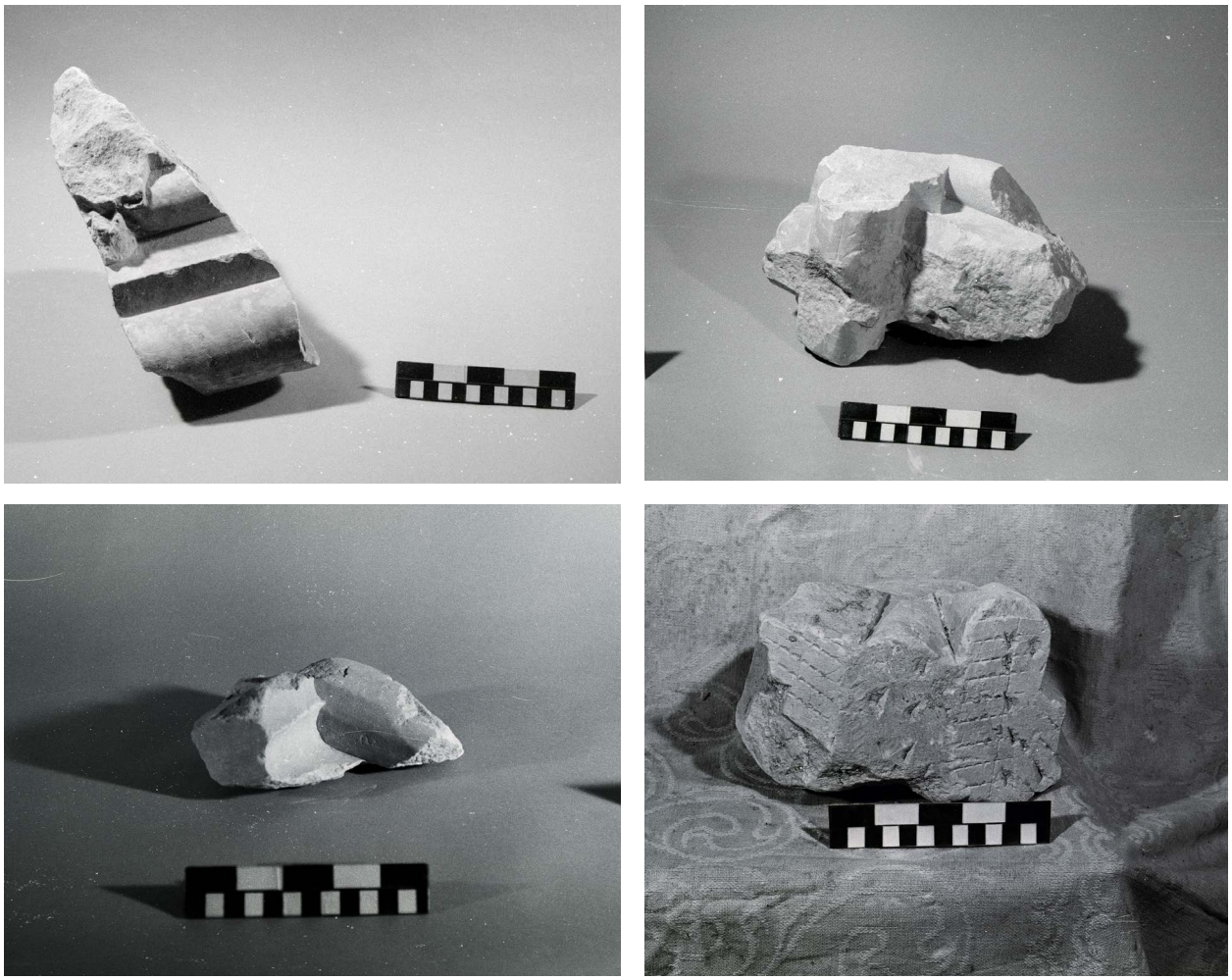
[29] A rare exception is the fan vault of the Lady Chapel at Canterbury Cathedral, 1448sqq.; see Leedy 1980, Pl. 97.
[30] One or two tiny fragments of carved foliage were recovered, but it cannot be proven that they derive from roof bosses or even from the chapter house; see above, p. 189 and Illus. 3.6.55A–B.
[31] Willis 1842, 51.
[32] ibid., 51–2 and Figs 14, 23.
[33] See Leedy 1980, 6–7, for an account of this development in the 14th cent.



Illus. 3.6.15. Chapter house vault, two pieces of fan vault, showing the back (extrados) of the bounding rib left, *RF 3515*; right, *RF 2366*. Scale 5 in./125 mm.



Illus. 3.6.16. Chapter house vault, piece of cell (*RF 3066*) reconstructed with pieces of fan vault and two pieces of main rib. Scale 5 in./125mm.



Illus. 3.6.17A–D. Chapter house vault, rib intersections. Scale 5 in./125mm. A: vault, fragmentary intersection of ribs (*RF 2402*). B: vault, fragmentary intersection of ribs (*RF 2432*). C: vault, perhaps the intersection of a bounding rib and transverse rib (*RF 2433*). D: vault, an intersection with three ribs diverging (*RF 3569*).

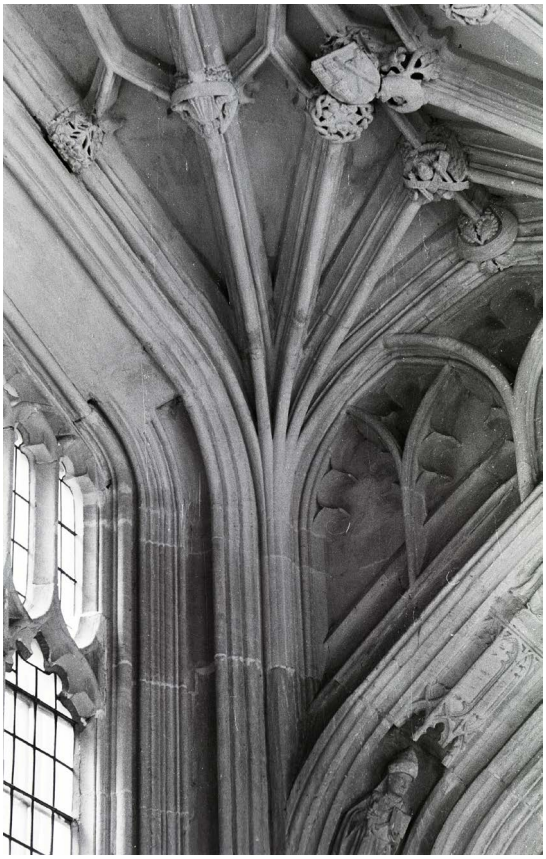


Illus. 3.6.18. Winchester Cathedral, the nave vault, detail.

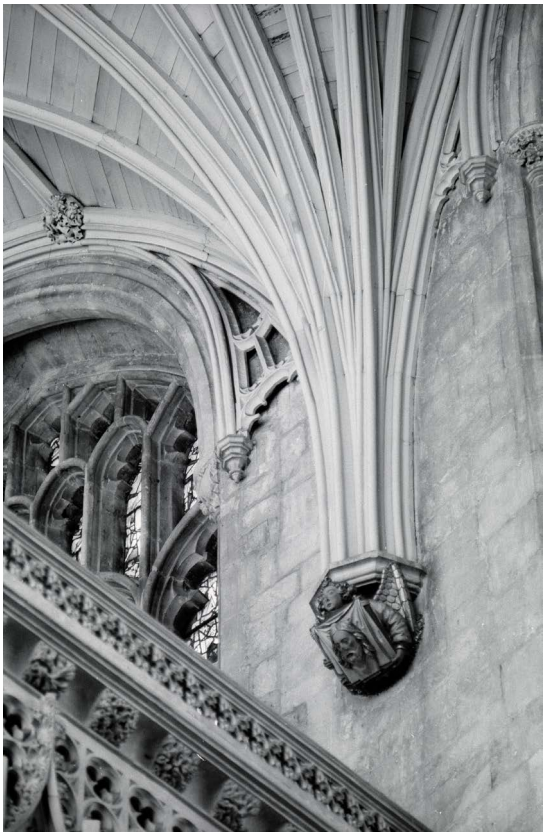
Third, none of the intersections have provided any definite evidence that a minor or subsidiary rib profile was used in the vault, a feature that is almost invariably present in large vaults of the late Gothic period (e.g. Illus 3.6.18, 3.6.29). It will be noted that the elaborate profile of the main rib, Type 951, has the potential to provide a minor rib based on the secondary roll moulding B (Illus. 3.6.4, 2B). Nonetheless, no independent lengths of minor rib were found, which is very surprising, and in only two of the surviving intersections is the existence of a minor rib a possibility (e.g. Illus. 3.6.17A). In the others which are sufficiently well preserved to judge, only the main profile is used, and one must conclude that minor ribs were employed very sparingly in the vault, if at all.[34]

Surviving evidence from the springing points of the vault is almost non-existent, and its absence is a major hindrance to any reconstruction of the vault's form and pattern. Only two likely pieces of springer have been located (*RF 2479* and *RF 3570*), of which the latter is too small to be helpful. *RF 2479* is also fragmentary but retains enough worked stonework to indicate that it belonged to a point low down in the tas-de-charge (Illus. 3.6.8D).[35] A recognizable feature is that the axial mouldings of the ribs have been compressed together in the lower part of the tas-de-charge, so that none of the other mouldings of the rib profiles is visible at this level. Such treatment is not unusual in later Gothic vaults, and is associated quite often with the works of Oxford masons, as may be seen in Illus. 3.6.19 showing the Oxford Divinity School vault springers, which provides a helpful illustration of the likely position of the St. Albans' stone.

Another major example is St George's Chapel, Windsor, in all the high vaults and aisle vaults.[36] In contrast, the alternative treatment of keeping the rib profiles partly separate right down to the base of the tas-de-charge is found in the high vaults, for example, of the Lady Chapel at Canterbury Cathedral, and of the presbytery and nave at Sherborne Abbey and Winchester Cathedral (Illus. 3.6.20). That *RF 2479* actually derives from a tas-de-charge is shown by the way its lines are diverging, as is made clear by the incised lines still preserved on the axes of the two best preserved roll mouldings (Illus 3.6.8D; 3.6.21, 2).



Illus. 3.6.19. Oxford, Divinity School, the vault springing at the south-west corner.

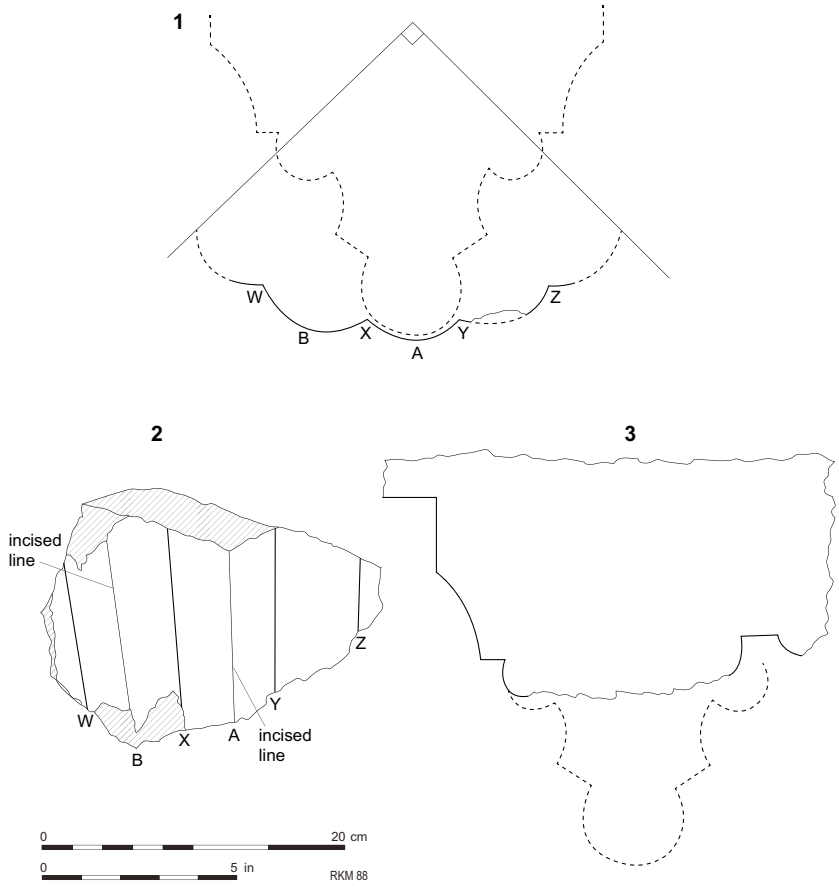


Illus. 3.6.20. Winchester Cathedral, presbytery vault, detail of the vault springing.

[34] In St George's Chapel, Windsor, the ribs of the nave vault (before 1506) are almost entirely of one profile.

[35] Tas-de-charge is the lowest part of a vault springing, where all the incipient rib profiles are usually carved on one block of stone.

[36] Other examples include North Leigh, Oxfordshire (the Wilcote Chapel); Christ Church Cathedral, Oxford (presbytery); King's College Chapel, Cambridge; Peterborough Cathedral (retrochoir); Norwich Cathedral (nave). An early example, and perhaps the pioneer work, is the presbytery vault of Gloucester Cathedral (1337–*c.*1365), where the device was used to overcome the visual problems of springing a very decorative vault with many ribs, probably benefitting from experience derived from the less successful south transept vault (1331–7).

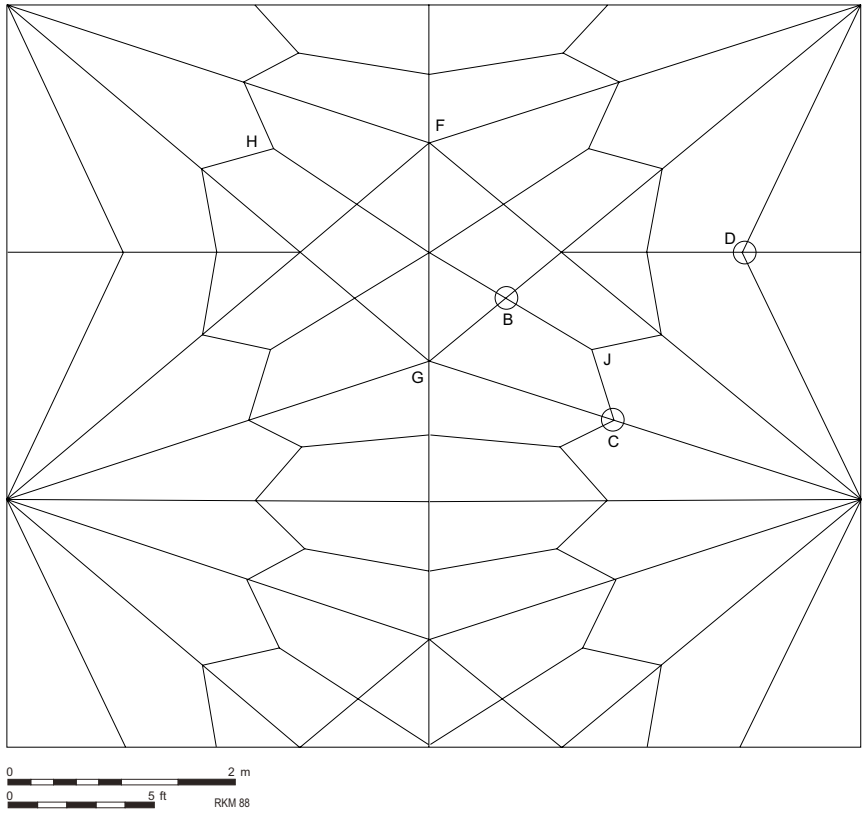


Illus. 3.6.21. Chapter house vault, details, superimposed on the main rib profile (dotted line). 1: *RF 2479*, fragment of a vault springer, (solid line), reconstructed in profile as corner springer (dashed line). 2: *RF 2479*, elevation. 3: *RF 3512*, an arched stone incorporating rib profiles.

The fact that these mouldings assume almost the full diameter of the axial roll moulding of the rib, 69 mm, at the top of the stone indicates that *RF 2479* stems from the point immediately before the ribs separate and begin to reveal their full profiles (see Illus. 3.6.19 for comparison). Three roll mouldings are clearly visible, but the beginnings of two others are also present, implying a minimum of five ribs. The curvature of the stone reveals that five ribs[37] would fit well in a quarter circle in plan, i.e. a corner springing point (Illus. 3.6.21, 1 and, for example, Illus. 3.6.19); and therefore that nine ribs would probably be the number to be accommodated in a semicircle, i.e. an intermediate springing point along the lateral walls (Illus. 3.6.22).[38]

The available evidence also suggests that these springers led directly into fan-vaulted conoids. The two best surviving stones from the latter are *RF 2366* (Illus. 3.6.14A) and another stone broken into four pieces (*RF 3515–8*, Illus. 3.6.14B), but numerous other fragments of this type were recovered from the chapter house site.[39] Both of them show what should be a 'vertical rib' diverging to create panelled units, at its junction with a horizontal 'bounding rib', all of which is characteristic of a fan vault (as suggested by the hypothetical reconstruction in Illus. 3.6.16).[40] The main reason for linking these stones with the vault is that what remains of the profile of the vertical rib is exactly the same as the axial mouldings of the standard rib, Type 951 (Illus. 3.6.5, 1–2). Also, two lengths of their vertical rib show a slight concave curvature along their surface plane,[41] corroborating the connection of these

[37] Three diagonal ribs and two wall ribs.
[38] Six diagonal ribs, two wall ribs and one transverse rib.
[39] 116 pieces were recorded, mainly fragments of bounding ribs.
[40] See Leedy 1980, ch. 2, for terminology. I am most grateful to Walter Leedy for help with interpreting these stones on site in May 1980.
[41] 1) The rib length which is physically part of the reconstructed stone *RF 3515–8* (Illus. 3.6.14B). 2) A shorter piece from Trench 1, Layer 150, which is related to the fan vault pieces by the curving bifurcation in plan of its axial moulding. It would be unusual for a lierne vault with angular intersections, like the one reconstructed above for the chapter house, to include curvilinear ribs as well.



Illus. 3.6.22. Diagram of a hypothetical lierne vault, to illustrate some possible features of the chapter house vault pattern.

stones to a vault rather than to an architectural context with a flat surface plane, such as blind tracery on a wall.

Moreover, the features on both stones identified as parts of the bounding rib have a regular curvature in plan and, if continued, would describe a circle of about 1.32 m (4 ft 6 in.) in radius, which could define the lowest row of panels on the conoid of a fan vault. If these dimensions were applied, for instance, to a corner springer, then a likely sub-division would be four panels, each with a maximum width of about 460 mm (18 in.) between the centres of the ribs (Illus. 3.6.5, 3). This is compatible with the estimated width of 430 mm (17 in.) for one of the panels, calculated by measuring half the head of a panel which survives on each stone (e.g. Illus. 3.6.24, 1); though it will be shown below that not all the panels were the same width. A sub-division into four panels (i.e. five ribs) for a quarter conoid and eight panels (nine ribs) for a demi-conoid would also agree with the evidence for the number of ribs derived from the springer stone *RF 2479* (Illus. 3.6.21, 1).

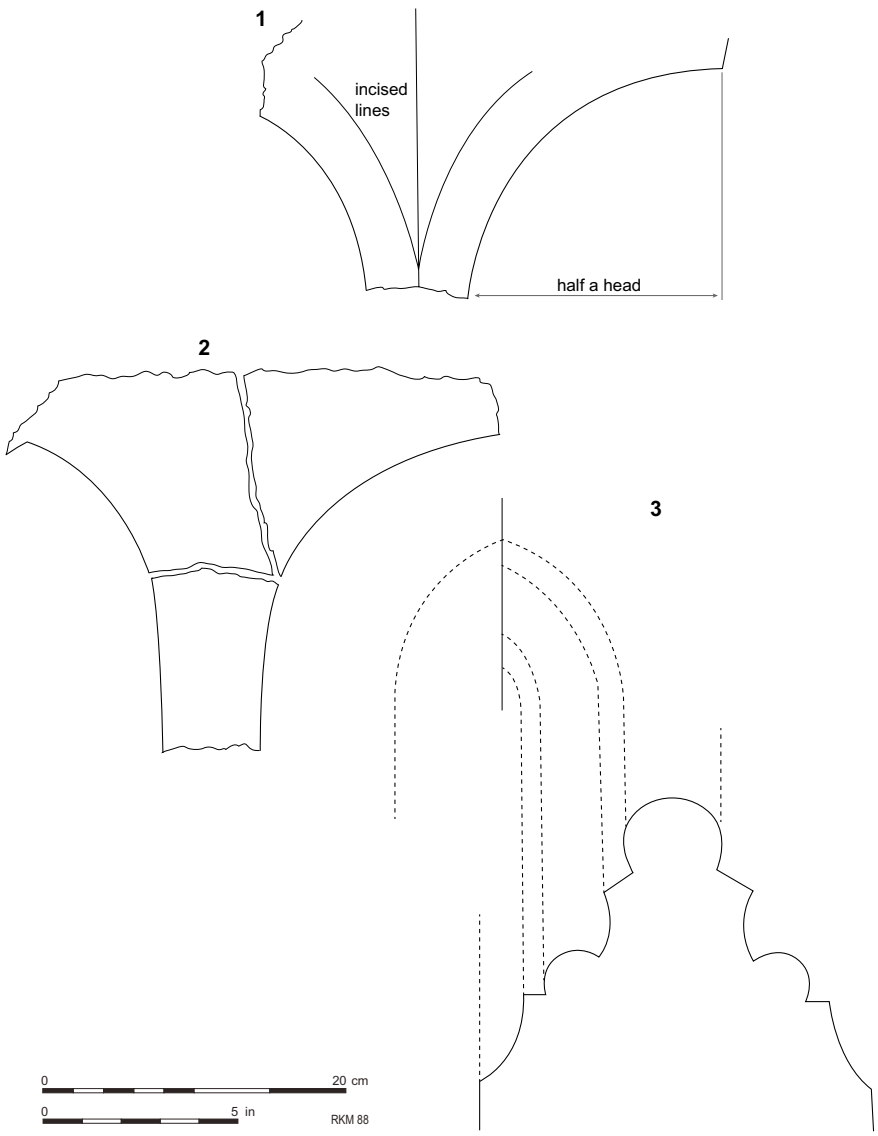
The deduction from the fragments of bounding rib that the radius of the fan-vault panelling was only about 1.32 m (4 ft 6 in.) has significant consequences for the design of the vault. As no evidence was recovered from the excavation for bounding ribs of larger curvature, it is assumed for the purpose of reconstruction that only one layer of fan-vaulted panelling actually existed, an unusual circumstance for a monumental vault (Illus. 3.6.6). This supposition is reinforced by the heavy profile of the bounding rib which appears to delineate the visual parameter of the fan conoid (Illus. 3.6.16).

The best preserved of the cell stones seem to have belonged with the fan sections of the vault. Their narrowness suggests that they derive from panels quite close to the springing: for example, *RF 3066* is 158 mm (6¼ in.) wide at its bottom-worked edge, and *RF 3067* is only 228 mm (9 in.) wide at its top-worked edge (Illus. 3.6.12). Thus the main constructional technique for the fan conoids was rib-and-panel (see Illus. 3.6.16).

On the other hand, there are a number of features about the fan-vault stones which are unorthodox and, in certain instances, unprecedented, in the context of known fan vaults. Particularly enigmatic is the profile of the bounding rib, which is not only completely different to that of the vertical rib (Illus 3.6.5, 1; 3.6.14A), but is also uncarved on its extrados (Illus. 3.6.15). A case for the use of the different profile might have been made if it had been decorated with carved cresting as, for



Illus. 3.6.23. Windsor Castle, St George's Chapel, crossing vault, detail.



Illus. 3.6.24. Chapter house vault, the heads of the fan-vaulted panels. Scale 5 in./125mm. 1: *RF 2366*, elevation. 2: *RF 3516–8*, elevation. 3: left panel reconstructed (dashed line), with main rib profile (solid line).

example, are some of the bounding ribs in the crossing vault of St George's Chapel, Windsor (Illus. 3.6.23).[42] but enough remains of this surface of the stones to indicate that this was not so (Illus. 3.6.15). The plain extrados is particularly curious, for the bounding rib of every known fan vault, whatever its location in the vault and whether decorated or not, is carved with a rib profile on the extrados. However, too little survives of the surfaces of the extrados for us to understand exactly how they linked visually to the rest of the vault above. It must be certain that practically none of the extrados surface showed in the finished vault, and from a constructional aspect, several of the bounding rib stones reveal angular recesses presumably for jointing to the stones directly above.[43]

One of the reconstructed stones, made up of *RF 3515–8*, is just sufficiently preserved to reveal that the panels on each side of the vertical rib were of different sizes. The rib defining the head of the left-hand panel is noticeably tighter in curvature than that on the right, and the apex of the left-hand panel is actually visible on the stone, as is the asymmetry of the spandrel between the panels (Illus 3.6.14B; 3.6.24, 2). *RF 2366* also has variations in the curvature of its panels, though apparently less marked (Illus. 3.6.24, 1). Our perception that the rationale of a fan vault requires sub-divisions of identical size in the surface pattern would imply that these unequal panels are aberrations.

However, irregularities do occur in extant fan vaults, as when the edge of a conoid adjoins a transverse arch decorated with panelling;[44] and even in fan vaults famed for their symmetry, such as those at King's College Chapel, the vertical ribs are not evenly spaced, though this is indiscernible by eye from the ground.[45] The existence of some narrower panels is presumably linked to another oddity, which is revealed when reconstructing the left-hand panel of the stone in Illus. 3.6.14A. This shows the panel to be so narrow that when the full width of the vertical rib profiles are taken into account, there is no space left between them for any exposed area of cell (Illus. 3.6.24, 3).[46] So there can be little doubt from the physical evidence that asymmetrical elements were present in the fan-vault conoids, but there is no way of knowing how prevalent these may have been throughout the vault, or whether they were restricted to just one section.

Some sort of supports must have existed beneath the tas-de-charge stones of the vault. As it is certain that there were no responds running up the full height of the wall from the seat bench, the vault is most likely to have sprung directly from corbels, as reconstructed here (Illus. 3.6.6).[47] No corbel blocks were recovered in the excavation, but doubtless they would all have been removed at the Dissolution.

Nevertheless, fragments of a smaller type of corbel have survived, which must be related to the vault and which are amongst some of the most intriguing mouldings excavated from the site. At least 15 pieces have been identified, all of them very small (Illus. 3.6.26A–B), and cumulatively they indicate a minimum of six corbels surviving,[48] one of which is reconstructed in Illus. 3.6.25, 1. Their lower mouldings form a complete octagon in plan (Illus 3.6.25, 2–3; 3.6.26B, top right), and for a time it was thought that they might belong to pendant bosses decorating the vault, as may be seen, for example, in the Divinity School at Oxford (Illus. 3.6.7). However, examination of at least two of the pieces (*RF 2021* and *RF 2048*) revealed vertical lines of fracture, indicating that they were originally joined laterally to a larger block (Illus. 3.6.26A, left side, top and bottom rows). Therefore they must derive from some sort of corbel which terminated at its base in a moulded octagonal pendant. At the demolition of the chapter house, they were knocked off the larger blocks from which they had been carved, and it is suggested here that the latter were the main corbel blocks of the vault. The evidence that the smaller pendants should also be associated with the springing of the vault derives from

[42] See also Henry VII's Chapel in Westminster Abbey; Leedy 1980, Pl. 212.

[43] A piece from Trench 4, Layer 108, with a rebate 10 mm deep but of unknown depth because the back of the stone is missing; possibly to take a metal reinforcement.

[44] For example, Bath Abbey (east end of the chancel vault), Sherborne Abbey (crossing), North Petherton (Som.) and Hereford Cathedral (Bishop Audley's Chapel, small scale); all illustrated in Leedy 1980, Pls 53, 193, 69 and 44 respectively. However, in such examples the vertical rib between the conoid and the arch is at least the same size as the bounding rib, if not heavier, so that the vertical junction is clearly delineated: this appears not to be the case with the stones under discussion.

[45] Leedy 1980, 2, 142.

[46] This narrow 'panel' was not the only one of its type in the chapter house, for two other fragments belonging with the rib profile preserve heads of the same size (*RF 2361* and another find from Trench 2, Layer 418).

[47] Or possibly from responds which were corbelled out from the wall above the sedilia as, for example, in the chapter house of Christ Church, Canterbury (Illus. 3.6.34).

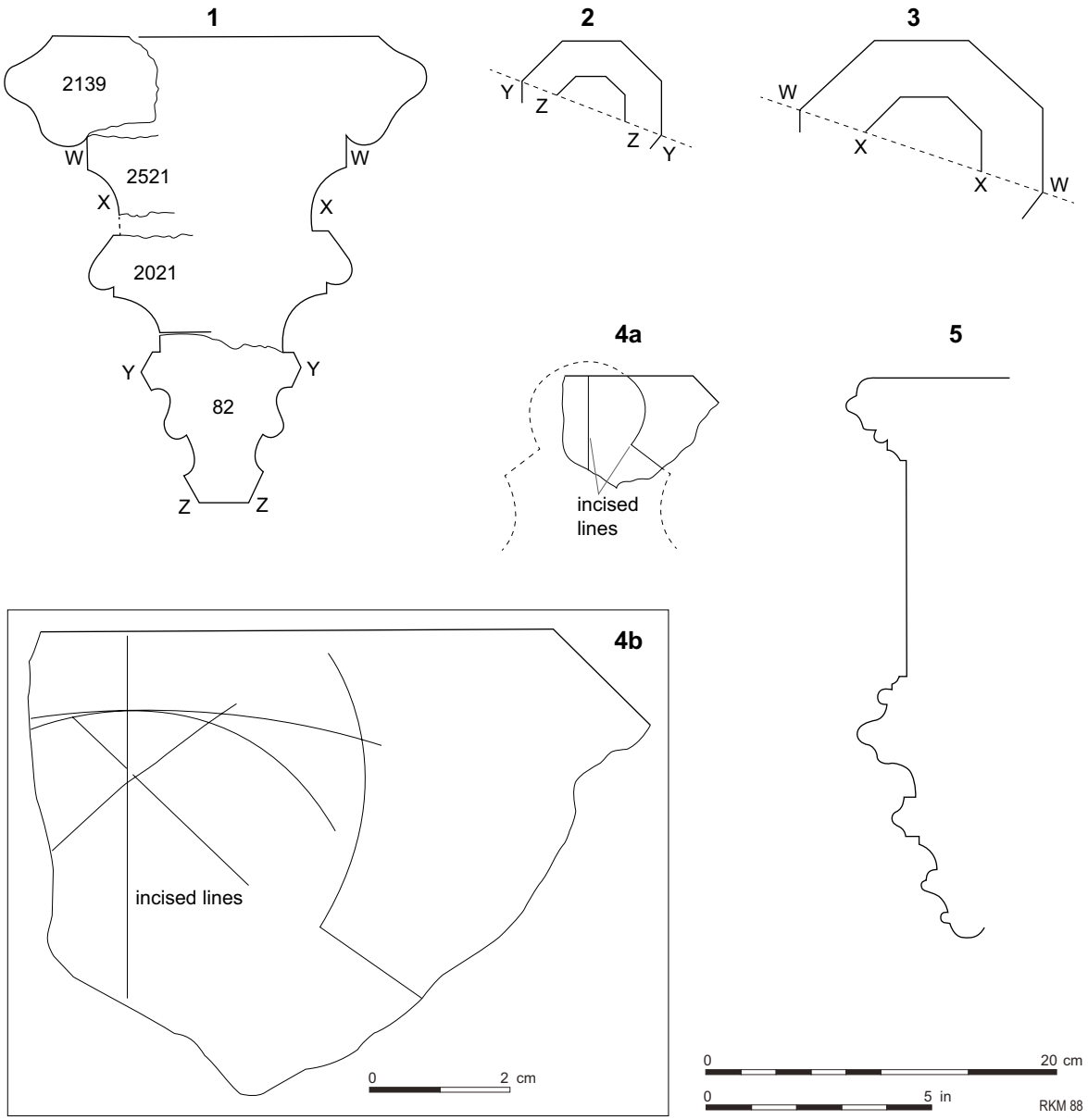
[48] Deduced from (1) which pieces physically connect with each other; and for the other pieces, (2) whether the location in the excavation indicates that they should or should not be regarded as belonging together. In Category 1 are *RF 1780–1*, and *RF 1783* (all Trench 2, Layer 563). For the purposes of Category 2, the fragments fall into three groups – those coming from the bottom (pendant) section of the corbel; from the middle section; and from the top section (see further Illus. 3.6.25, 1). This gives:-

Bottom: Trench 1, 2 pieces, 82 and 122, which must come from two separate corbels.

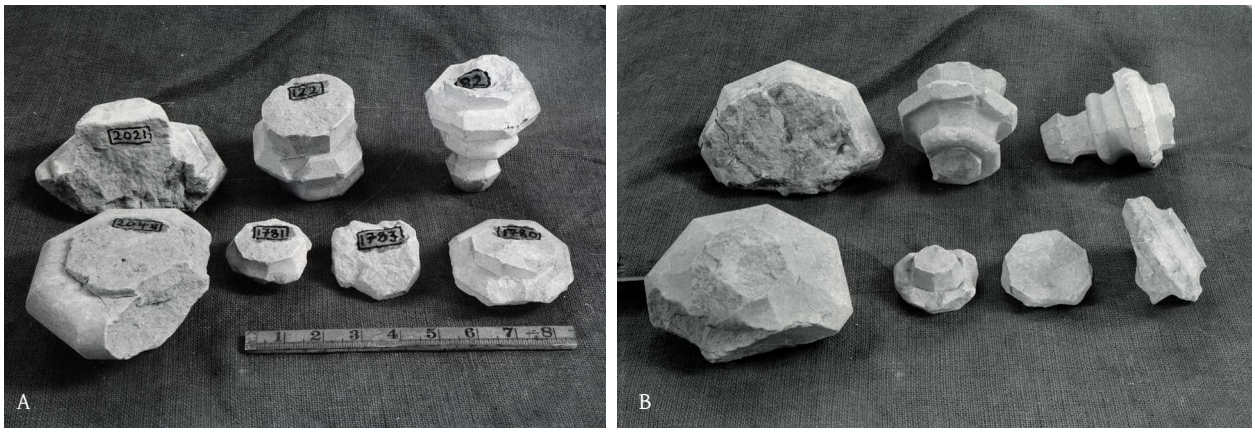
Middle: Trench 2, 3 pieces, two of which must come from different corbels 2021 and 2048, and the other may belong with either of them or be separate.

Top: Trench 2, 1 piece which may belong with one of the other corbels from Trench II; and 5 small pieces from Trench 3, which may all derive from one corbel, but presumably not from one of the corbels found in Trenches 1 or 2.

This gives a minimum of six corbels:- Category 1: 1 corbel. Category 2: bottom section – Trench 1, 2 minimum; middle section – Trench 2, 2 minimum; top section – Trench 3, 1 minimum.



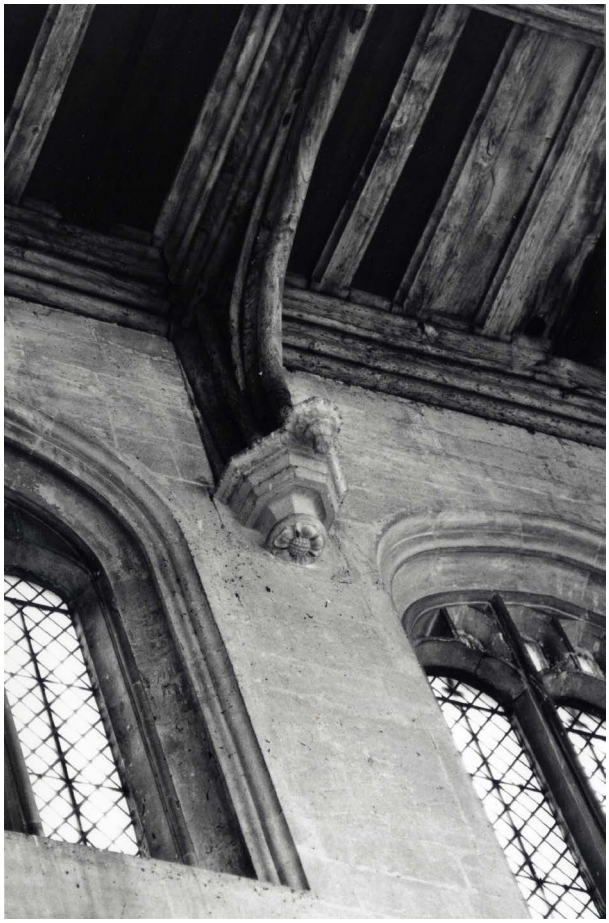
Illus. 3.6.25. Chapter house, octagonal pendant corbels. 1–3: pendant corbel, reconstruction, vertical and horizontal sections, with the *RF* marked. 4: A, *RF 2319* (solid line), superimposed on part of the main rib profile (dotted line). B, *RF 2319*, top surface, to show the incised lines (detail of Illus. 4.8.25.4A). 5: St Albans Cathedral, sanctuary, the great reredos, octagonal corbel for image bracket, vertical section.



Illus. 3.6.26A–B. Seven pieces of octagonal pendants. A: top row (left to right), *RF 2021*, *RF 122*, *RF 82*; bottom row, *RF 2048*, *RF 1781*, *RF 1783*, *RF 1780*. *Scale in inches.* B: the same pieces, photographed from different angles.



Illus. 3.6.27. Piece of a capital showing circular and polygonal shapes in plan (left, *RF 1389*); and the top surface of a pendant corbel, showing the incised pattern of the main rib axial moulding (right, *RF 2319*). Scale 5 in./125mm.



Illus. 3.6.28. Tattershall (Lincs.) collegiate church, transept roof, interior detail.

one small but significant observation. On the upper surface of one of the fragments assumed to be from the top part of a pendant corbel (*RF 2319*) are incised lines which fit perfectly the axial mouldings of the main rib (Illus 3.6.25, 4B; 3.6.27, right). They are centred with the main axis of the corbel, and it seems reasonable to interpret them as design or construction guidelines for this part of the work.[49] It is also significant that the incised profile is that of a single rib, rather than that of the main springer, which has been shown to consist of several roll mouldings compressed together (cf. Illus 3.6.21, 1; 3.6.25, 4A).

In the late Gothic period, corbels with polygonal pendant terminations are most commonly found in chantry chapels and fittings as supports for image brackets or cresting,[50] but this usage is unlikely here. Rather, in monumental Perpendicular architecture, only two applications appear possible which take account of all the above information. One is their employment attached to the front of a larger corbel, to support the axial moulding of a transverse arch, as in the transept roofs of the collegiate church at Tattershall (Lincs., *c*.1470–80; Illus. 3.6.28). Alternatively, they occur in the

[49] Note also that this interpretation depends on the reconstruction of *RF 2319* as part of one of the corbels. Its size relates to them, but it is not a jigsaw fit with any other piece.

[50] For example, the chantry chapels of Archbishop Bourchier (d.1486) at Canterbury Cathedral and Bishop Fox (d.1528) at Winchester Cathedral; and most significantly, Abbot Wallingford's great reredos at St Albans (probably *c*.1480, definitely before 1492). See Illus. 3.6.25, 5, for a profile of the screen's pendants.

presbytery vault of Winchester Cathedral, where they appear as stops for hoodmoulds created by extending the wall ribs around the heads of the clerestory windows (Illus. 3.6.20). The former idea has been adopted here, to carry an additional roll moulding of a transverse rib between each bay of the vault. Emphasized transverse ribs of this kind are known in some fan vaults (e.g. at King's College Chapel, 1508–15),[51] though corbelling it out in this way would be unique amongst surviving fan vaults. The Tattershall model accommodates more precisely the position of the rib moulding as incised on top of the corbel, and it provides a more general functional application than the rather unconventional usage at Winchester.

In addition, there is potential corroboration for the existence of transverse ribs from *RF 2433*. This stone, though fragmentary, clearly represents the outer mouldings of a bounding rib, intersected by a roll moulding of the same size as the axial roll of the main rib type (Illus 3.6.5, 4A–C,'X'; 3.6.17C). As all other comparable surviving junctions show the vertical ribs dying into the inner mouldings of the bounding ribs (Illus 3.6.5, 2; 3.6.14), it seems reasonable to propose that the extra projection of the roll-moulded feature in *RF 2433* is the axial moulding of a transverse rib.

So far the main visual elements established for the pattern of the vault are transverse ribs between each bay, ridge ribs at the apices, and the existence of fan-vault conoids in the lowest layer. In addition, the form of the springer stone *RF 2497* analysed above implies that five ribs rose in each corner bay (Illus. 3.6.5, 3). For the purposes of attempting a reconstruction of the main area of the vault pattern, we have to assume that the spaces between these ribs were about equal. This means we have to set aside the evidence noted above that there appeared to be irregularities in the size of the panels in the two largest fragments of fan vault recovered. As so little of the fan-vault stonework survived, we cannot know whether these irregularities were confined to only one section of the vault or occurred more generally; and, anyway, it would make any reconstruction of the vault virtually impossible if one had to second guess the design implications of them. Thus, on the basis that the ribs were evenly spaced, within the context of the rectangular bays of the chapter house, it is unlikely that any of the ribs could have formed a main diagonal rib (Illus. 3.6.22). Instead, in the reconstruction, the various diagonal ribs intersect to create a large lozenge shape at the centre of each bay (Illus 3.6.6; 3.6.22, QF, QG), a feature common in monumental decorative vaults of the Perpendicular period (e.g. Sherborne Abbey, Winchester presbytery, Oxford Divinity School; Illus 3.6.7, 3.6.29).

[51] Illustrated in Leedy 1980, Pls 52, 114.

Reconstructing the details of the vault pattern within this framework is severely impeded by the paucity of fragments incorporating the junction of two or more ribs. Only two surviving types provide information which may be usefully interpreted about the intersections of ribs higher up the vault. The junction of two or more ribs creates both a two-dimensional relationship in plan and a three-dimensional relationship in section, as the plan is projected around the volumes of the vault with the result that adjacent ribs are often in a different plane to each other. The combination of these factors allows one to suggest possible locations for such stones within the vault pattern.

The most useful type of intersection is from a group of surviving stones in which three ribs come together in a 'crow-foot' pattern (Illus. 3.6.30, 4). In two of these examples (*RF 2475–6*), the angle of each diverging rib to the axial rib is about 45° (Illus. 3.6.30, 4). The axial rib is on a different plane to the diverging ribs, rising towards the ridge at an angle which for *RF 2475* can be calculated at about 16° to the horizontal plane (Illus. 3.6.30, 5). Two features allow one to be more specific about potential locations. First, the diverging ribs are more or less in the same plane as each other at the intersection (Illus. 3.6.30, 6), which tends to preclude the possibility that they derive from the junction of two tierceron ribs and a transverse ridge rib, a relatively common intersection in later Gothic vaults (Illus 3.6.22D; 3.6.29D). Second, in plan the ribs diverge in the direction in which the axial rib is rising.

This analysis suggests that each of these stones probably derives from the intersection of a tierceron rib and two lierne ribs in the upper half of the vault (Illus 3.6.22C; 3.6.29C). Zigzag arrangements of liernes like this, lacing between the lines of diagonal and tierceron ribs and often closely mimicking the radial effects of fan vaults, are common in later Gothic lierne vaults in the south, in centres like Oxford and Winchester.[52] If this interpretation is correct, the chapter house vault would constitute the only known instance in monumental architecture of the juxtaposition of this arrangement and fan-vaulted panelling within one design. However, related ideas can occasionally be observed in extant examples, such as the crossing vault of St George's Chapel, Windsor, in the row of lozenges beyond the bounding rib of each fan (Illus. 3.6.23); and more so in the miniature vaults of some chantry chapels.

The other type of intersection which is well preserved is represented by *RF 2432*, which in plan consists of two ribs coming together to form a saltire cross pattern

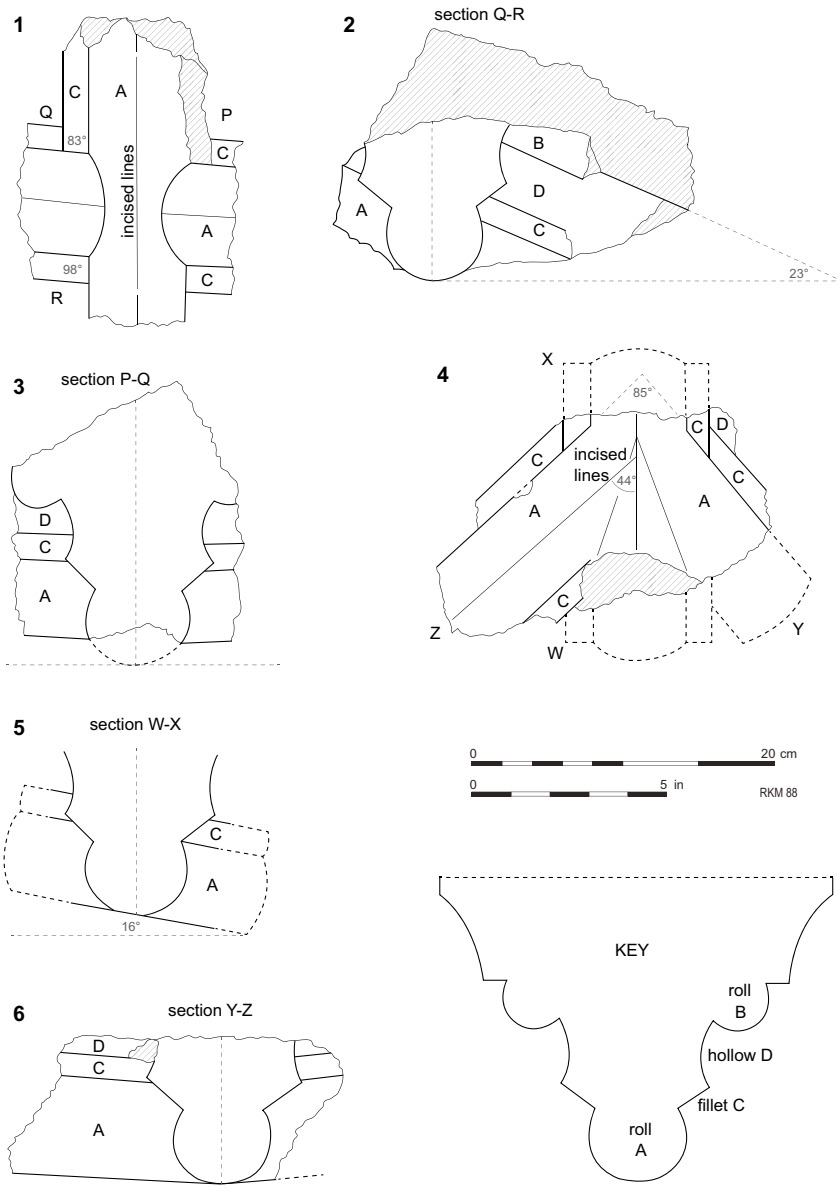
[52] Apart from the vaults of Winchester Cathedral, Oxford Divinity School, and Oxford Cathedral presbytery, examples are found in the high vaults of St George's Chapel, Windsor (a variation), the nave vault of Norwich Cathedral, and the Lady Chapel of Gloucester Cathedral. An early example is the choir vault of Ely Cathedral (c.1330–40).



Illus. 3.6.29. Winchester Cathedral, presbytery vault, a lierne vault to illustrate some of the possible features of the chapter house vault pattern. Photograph by John Crook.

(Illus 3.6.17B; 3.6.30, 1).[53] There is no sign of any carved decoration, so this must be a minor intersection. In elevation, one of the ribs is rising at an angle of about 23° in relation to the other one (Illus. 3.6.30, 2); and in plan the ribs cross at angles of approximately 80° and 100° (Illus. 3.6.30, 1). A number of typical intersections in late Gothic vaults would generally accommodate the geometry of this piece, particularly in conjunction with lozenges or kite-shaped patterns near the apex of the vault (e.g. Illus. 3.6.29B). Therefore this piece tends to corroborate the interpretation of the springer stone, that the diagonals from the fan conoid rose to create some form of lozenge pattern in the centre of each bay. A possible location adopted for the purpose of reconstruction would be where a lierne rib linking two of the 'crow-foot' intersections (Illus. 3.6.22HJ) crosses over a diagonal rib forming one side of the lozenge (Illus. 3.6.22B). The angle of about 20° at which the lierne is rising towards the centre-point of the vault (Illus. 3.6.30, 2) is almost exactly the same as that noted

[53] *RF 2439* and probably *RF 2441* are other surviving examples of this type of intersection, though less well preserved.



Illus. 3.6.30. Chapter house vault, fragmentary intersections of ribs. 1–3: *RF 2432*, plan and sections. 4–6: *RF 2475*, plan and sections. Key: main rib profile, to locate the details of the intersection stones.

above for some rebates of the ridge ribs at the apex (Illus. 3.6.4, 2C). All of which implies that the vault was relatively steeply angled in section, rather than using the flat spandrel panels associated with classic fan vaults.[54]

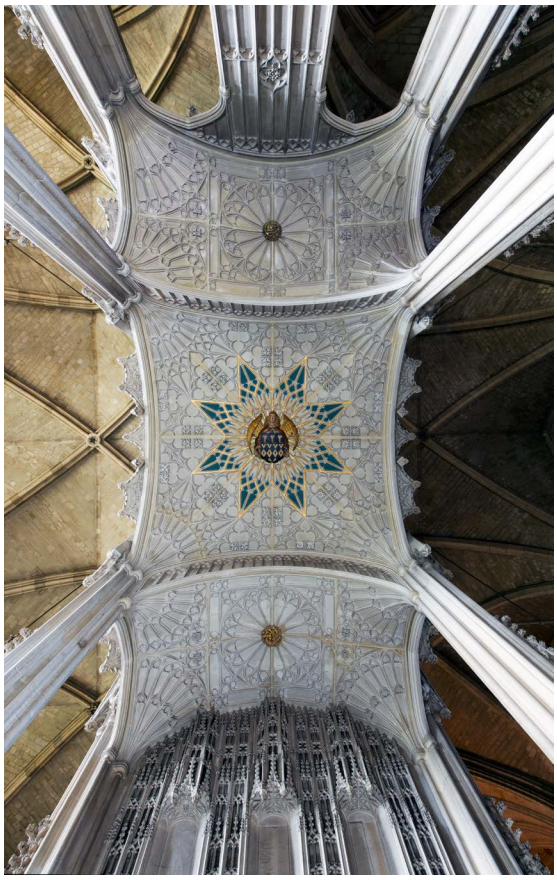
The intersection stones thus provide invaluable information about the general design of the vault, despite their fragmentary state of preservation. It must be virtually certain too that intermediate surfaces were decorated with lierne patterns, but no attempt has been made to add such detail to the reconstruction because of the innumerable possible permutations (Illus. 3.6.6). For example, *RF 3569* shows a group of three diverging ribs, apparently being joined by at least one other rib at roughly 90°, but the piece is so mutilated that it has been impossible to place it in the vault (Illus. 3.6.17D). Its oddest feature is that the middle rib appears to be rising at a different angle to the other two diverging ribs, somewhat reminiscent of a springer stone – which this piece definitely is not.[55] The best

[54] Compare Leedy 1980, Pl. 1.

[55] Especially because of the rib joining it on the side; and also because it is a group of only three ribs.



Illus. 3.6.31. St Albans, monument to Humphrey, duke of Gloucester, vault. Photograph by John Crook.



Illus. 3.6.32. Winchester Cathedral, Bishop Waynflete's chantry chapel, vault. Photograph by John Crook.

parallels for its linear pattern, as well as more general features of the vault, are to be found in the fantastic micro-vaults of some late Gothic chantry chapels and monuments. Their smaller scale, often more akin to sculpture in technique and using jointed masonry, encouraged masons to experiment with outrageously ornamental patterns, some of which were subsequently put to use in monumental architecture.[56] For example, the juxtaposition of relatively small fan conoids with extensive areas of lierne patterning is found in two miniature vaults which seem especially relevant to the chapter house design. The first is Duke Humphrey of Gloucester's monument in the feretory of the Abbey (*c.*1443–7),[57] which must have been known to the architect of the chapter house vault and may have been used as an exemplar (Illus. 3.6.31).

The other is Bishop Wayneflete's chantry at Winchester Cathedral, especially the centre section of the vault, probably erected in the 1470s (Illus. 3.6.32).[58] With regard to *RF 3569*, this vault also illustrates numerous instances of a right-angled junction between a single lierne rib and a group of three diverging ribs. The architecture of Wayneflete's chantry is virtually contemporary with the date of the chapter house vault.

A few years later, this general effect of a lower layer of fan-vault panelling leading into an upper area of liernes in a zigzag arrangement became part of the repertoire of the vault of Henry VII's Chapel, Westminster Abbey. It is likely that the lost vault of St Albans chapter house was one of the pioneering stages in the development of this most ostentatious of all late Gothic vaults.[59]

[56] The variety of invention in chantry chapel vaults provides more ideas for reconstructing the chapter house vault than can be accommodated in this report. One possibility worth noting is that the vault was tripartite in cross-section, with fan conoids forming the lowest layer on each side and acting like shoulders for a longitudinal tunnel-vaulted area in the upper part of the vault; in principle like Bishop Fox's chantry chapel vault at Winchester Cathedral (1513–8), and the tiny vault of the dean's chapel adjoining the Beauchamp Chapel at St Mary's, Warwick (*c.*1450). This could help to explain awkward junctions in the ribs, and perhaps the unique profile of the bounding rib.

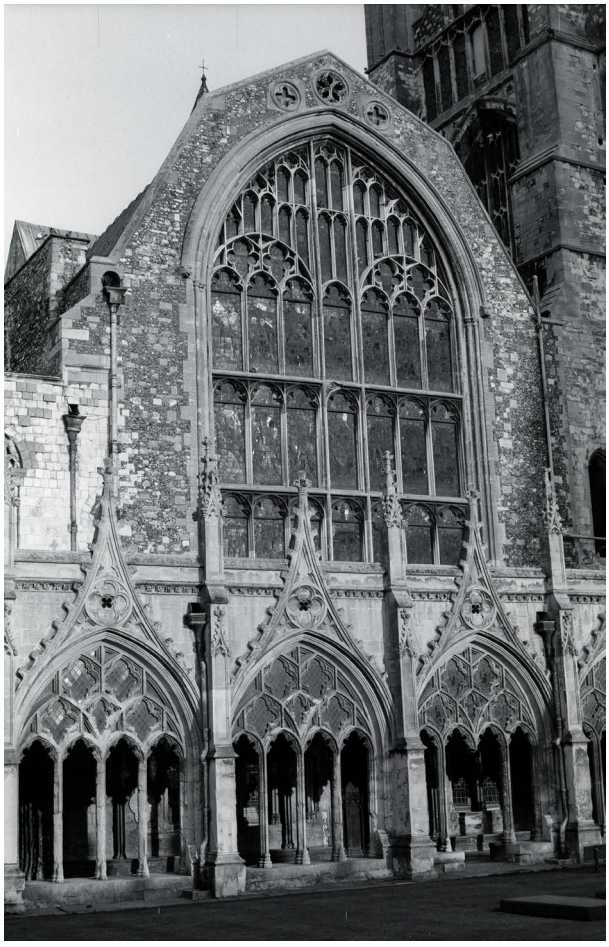
[57] This is the dating proposed by Goodall and Monckton 2001, 236–7; but Fehrmann 2011, 90–1, argues that the monument was erected after the duke's death in 1447.

[58] Other small-scale vaults which include details comparable to those observed on the chapter house fragments include Bishop Audley's chantry chapel at Hereford Cathedral (*c.*1500) and the vaults of St Stephen's cloister at the Palace of Westminster (1526–9). Most of these vaults are discussed and illustrated in Goodall 2005, 195–202.

[59] Illustrated in Leedy 1980, Pl. 49.

2. The exterior and the walls

In reconstructing the rest of the fifteenth-century chapter house, we cannot do better initially than have before us an image of existing chapter houses of comparable form. The rectangular plan was not uncommon for chapter houses in medieval Britain, but the majority of those which have survived the Reformation are polygonal. Moreover, of the few rectangular ones which have come down to us intact, only Canterbury and Exeter, and Gloucester to a much lesser extent, possess substantial fabric which is later Gothic in style (Illus. 3.6.33).[60] Their evidence is particularly important for reconstructing the exterior of the chapter house. As no worked pieces of stone were recovered which could be identified as belonging definitely to the fifteenth-century exterior, nothing can be said with certainty about its detail. However, judging from the other chapter houses, there is no reason to expect that it would be ornate. Canterbury is very plain externally except for its window tracery (Illus. 3.6.33), and though this may be influenced by the fact that it is rather boxed in by other conventual buildings, the east facades of the chapter houses at Exeter and Gloucester are treated with similar reserve.[61]



Illus. 3.6.33. Canterbury Cathedral, the chapter house, exterior from the cloister garth.

In assessing the height of the chapter house, Canterbury and Gloucester provide some guidance. As at St Albans, the dormitory at both monasteries did not extend over the chapter house to limit the height. At Canterbury, the dimensions of its plan are not much greater than those of St Albans,[62] but its interior height of 18.48 m (60 ft) is enormous and quite exceptional in the context of rectangular chapter houses (Illus. 3.6.34).

The proportion of width to height in the interior of Canterbury is approximately 5:8. Applying similar proportions to St. Albans would produce a height of about 14.79 m (about 48 ft) at the apex of the vault. However, two other factors which are absent at Canterbury suggest that it was probably slightly lower.

Structurally the introduction of a stone vault at St Albans would argue for a reduced height in comparison with Canterbury, where the walls have to support a lighter wooden ceiling (Illus. 3.6.34). The stone-vaulted chapter house at Gloucester has an interior height of only 11.87 m (38 ft 7 in.) on a width internally of 10.38 m (33 ft 9 in.);[63] though the height of the new vault bay was determined there by the bays of twelfth-century tunnel vaulting which were retained. Second, an additional consequence of a rib vault would be that the apices of all the windows would rise to about the same level as the ridge of the vault. Any excess in the height of the vault could produce unacceptably tall proportions particularly in the lateral windows;[64] whereas this dilemma is avoided at Canterbury by using a high-coved ceiling. Overall, therefore, the best estimate one can make on this basis for the St Albans chapter house is that its internal height would have been around 13.00 m (about 42–43 ft).

The sections of the wall recovered in the 1978 excavation had been demolished at the Dissolution down to the ground-level of the late medieval period,

[60] The Romanesque chapter house at Canterbury was rebuilt by Prior Eastry in 1304, and extensively remodelled by Prior Chillenden *c.*1400, with new windows and roof; Woodman 1981, 167. The Exeter chapter house is an Early English structure (1224–44), the upper parts of which were rebuilt with new windows and a new roof in the 15th cent. The window glass is attributed to Bishop Neville (1458–65); Brooks and Evans 1988, 123. At Gloucester the chapter house is Romanesque except for the east bay, which is a modification of the Perpendicular period, with new tracery and vault, usually dated to the 15th cent.; Hope 1898. In contrast, the other important rectangular chapter houses which survive at Bristol, Chester and Oxford belong entirely to the 12th or 13th cent.

[61] At Gloucester, this facade looked out on to the monks' burial ground, as at St Albans.

[62] Canterbury is 28.63 m x 11.69 m (93ft x 38 ft) internally.

[63] For these dimensions I am grateful to the late Bernard Ashwell, formerly Architect to the Dean and Chapter of Gloucester Cathedral.

[64] See further above, pp. 197–8 and Illus. 3.6.38.



Illus. 3.6.34. Canterbury Cathedral, the chapter house, interior looking east.

which explains why none of the exterior detail survives. Only the foundations remained, and all direct evidence for the fifteenth-century ground-course moulding and the exterior treatment of the walls above it had been removed. However, the study of other sources provides some grounds for speculation, and suggests that the remodelled walls were only slightly less thick than their twelfth-century predecessors.[65] It is also possible that considerable areas of the core of the twelfth-century walls were retained in places. This would be in agreement with what we know about the obsession of medieval builders to incorporate pre-existing fabric into new work, quite at variance with the economics of modern architectural practice.

The main source for this interpretation is the statement in the Register that Abbot Whethamstede began the remodelling of the chapter house on the 'exterior'.[66] This precise remark surely implies that the work in his time was indeed concentrated on refacing the exterior, especially in the eastern part which stood clear of the other conventual buildings. Such a procedure would explain how he could have carried out considerable works and yet have left the building in such a condition that 'it might be easy for his successor, if he wished, to complete it' (author's underlining).[67] In other words, the chapter house was apparently still in a useable state at the end of the first campaign, inferring that the pre-existing roof was still in place (at least in the west bays). For the work, he intended to use what presumably were dressed stones ('lapidibus politis'), and the excavation revealed that the footings of the fifteenth-century buttresses were indeed of ashlar: though the walls had not survived to test our assumption that ashlar was used for the whole exterior refacing. The excavation established that when the interior was remodelled, at least three courses of twelfth-century masonry were retained above the seat bench,[68] so the new wall must have preserved more or less the thickness of the old. Another implication is that a substantial part of the twelfth-century core of the walls would probably have been retained behind the new exterior facing, in order to keep the chapter house standing during the first campaign.

The viability of this proposed method of remodelling is revealed by considering how well the three east bays of the fifteenth-century chapter house would fit into the shell of the eastern half of its predecessor. The new east window and the lateral windows of the centre bay would simply be enlargements of the existing apertures in these positions. In the lateral windows of the east bay, the earlier apertures could be partly reused, though enlarged; whilst in the new second bay from the east, apertures would need to be opened where there were none before (Illus. 2.3.4). The Romanesque pilaster buttresses would be cut down to ground-level, and the scars left by them would be covered as part of the refacing.[69] In sum, in the eastern half of the chapter house the twelfth-century core could have been retained below window level throughout, and to a greater height between all the windows.

[65] The new walls would be slightly thinner if a typical late medieval ground-course moulding had existed on top of the stubs of the walls exposed by the excavation; this would have reduced their thickness by anything from about 80 mm to 180 mm. Alternatively, without the introduction of a ground-course, no reduction in thickness would have occurred in the 15th cent. The 12th-cent. walls were presumably the actual thickness of the walls recovered, because their ground-course moulding survived at a lower level on the wall that was excavated (Illus. 2.3.3. NE corner), the exterior ground level having been considerably lower than that of the 15th cent.

[66] RS 1872, 472. For the relevant documentation, see further below, p. 214.

[67] See above, pp. 50–2.

[68] This observation is based on the north wall.

[69] In fact, the scars of the pilaster buttresses between the east and centre bays of the 12th-cent. chapter house would be absorbed mainly by the new 15th-cent. windows in this position.

The evidence for the situation in the western part of the chapter house, which constituted the two west bays in the new articulation, derives from the north wall which was shared in common with the slype (Illus. 2.3.4).[70] An opportunity for the closer study of this wall was afforded when the slype was dismantled in 1980. In section, the northern half of the wall consisted of a refacing from Lord Grimthorpe's period, re-using medieval stones, mainly from the twelfth century; behind which was a substantial layer of hard mortar also of Grimthorpe's time (Illus. 2.4.2).[71] The southern half of the wall had been refaced in brick, probably in the eighteenth century, but behind this was a core of rubble in mortar, which in its constituents would be quite compatible with a late medieval date.[72] The assumption must be that it belongs with the fifteenth-century remodelling. All these layers terminated at the modern ground-level, which was about the same as the late medieval ground-level, and beneath them the core of the twelfth-century wall was preserved, acting as the foundation (Illus. 2.4.2).

Therefore it is evident that in the two new west bays, the north wall was refaced in the fifteenth century from the equivalent of ground-level upwards, and that this operation included the provision of a substantial depth of new core behind the facing. By the eighteenth century, the fifteenth-century facing stones had been replaced with bricks, but fortunately for the historical record the late medieval core survived behind. The fifteenth-century facing (and its subsequent brick replacement) stopped at the equivalent of ground-level, below which several courses of twelfth-century ashlar were preserved above the seat bench, as in parts of the north wall further east. On the north side of the wall, the twelfth-century fabric had remained intact to the full height of the slype, and may well have included a layer of twelfth-century core behind the facing, lost only in the thorough reworking of this area in Grimthorpe's time.

The application of this analysis to the walls of the rest of the chapter house can be only speculative, in the absence of any physical evidence. One assumes that similar treatment is likely to have been given to the south wall of the two new west bays, abutting the dormitory range: namely, the older wall preserved on the dormitory side, and new facing with some new core on the chapter house side. With regard to the three eastern bays, the situation is slightly different because here the chapter house stood clear of other structures, and therefore the slype wall is less appropriate as a model. Nonetheless, our interpretation of the slype wall does not deny the viability of the hypothesis suggested by the documents, that substantial areas of twelfth-century core were retained in the eastern bays as well. Moreover, the interpretation corroborates the idea that most of the north, south, and east walls were refaced on the interior, with the exception only of the lowest stone courses.

The interior of the west wall appears to have been rather less affected by the new work. The extensive decorative stonework from the twelfth century discovered at the west end in 1978 suggests that the Romanesque tripartite division of the west wall was retained, at least to a height equivalent to the cloister roof. Above this level, the insertion of a large Perpendicular west window is likely, as at Canterbury (Illus. 3.6.33), and therefore some internal and external refacing may have been necessary. There is also documentary and archaeological evidence that the entrance area had been updated by Prior John de la Moot before 1396 when work was in progress on the east cloister walk.[73] The likelihood is that his work would have been retained without change in the chapter house, though no carved stones belonging to a doorway have survived to corroborate this assumption.

3. The interior

We are fortunate in having a considerable variety of stonework relating to the interior of the chapter house. There are indications of blind and glazed tracery with cusping, of a miniature battlemented stringcourse, and of small figure and foliage carvings with exquisite detail: in addition, of course, to the elaborate vault already described. An examination of comparable chapter house interiors, such as those at Canterbury and Exeter cathedrals, provides an indication of features to which these elements could belong (e.g. Illus 3.6.34, 3.6.35). Apart from window tracery, we should anticipate moulded window surrounds, perhaps with niches or panelling in between (e.g. Exeter); a decorative stringcourse or parapet at window sill level (e.g. Canterbury, Exeter); and presumably some form of sedilia along the lower walls (e.g. Canterbury), with the possibility of more elaborate stalls or blind panelling at the east end (e.g. Gloucester).

[70] The equivalent section of wall on the south side of the chapter house had disappeared entirely. With regard to the west wall, the excavations showed that its 12th-cent. fabric was retained in the new work: probably to a height at least equivalent to the top of the cloister walk.

[71] For Lord Grimthorpe's work at St Albans, see Ferriday 1976; Perkins 1903, 17–21; and Chs II, III, passim.

[72] The constituents included a piece of clunch worked with a claw-chisel and therefore likely to be later medieval (probably a waste piece); as well as pieces of clunch with earlier medieval striated tooling (loosely cut parallel lines) and one piece with a fragment of 12th-cent. ball ornament, all likely to be re-used, in addition to re-used pieces of Roman brick.

[73] The lowest courses of the door aperture were recovered and showed that the 12th-cent. door had been narrowed on the north side, presumably to correspond with the rebuilding of this part of the cloister during Moot's time as prior.



Illus. 3.6.35. Exeter Cathedral, the chapter house, interior looking east. © Conway Library, Courtauld Institute of Art, London; photograph, Peter Draper.



Illus. 3.6.36. Chapter house, window tracery fragments, including junction pieces *RF 2500* (top centre) and *RF 3523* (top right). Scale 5 in./145mm.

In fact, it seems that sedilia in stone were definitely absent from the lateral walls at St Albans, because the surviving masonry courses above the seat bench were found to be completely plain when excavated (Illus. 2.3.3). A comparable situation may still be seen at Gloucester, Wenlock, and Exeter, though with a row of older blind arcading retained between the plain wall and the windows: Romanesque at the first two and early Gothic at the third (Illus. 3.6.35).

We do not know if the twelfth-century chapter house at St Albans had arcading in a similar position, but even if it once existed, it is unlikely to have survived because the wall at this level was refaced during the fifteenth-century remodelling, as explained above. Instead, there may have been some form of sedilia constructed in timber, of which all trace has been lost. Anyway, these suppositions apply only to the lateral walls. It remains an open question whether the east wall, which did not survive as high as seat bench level, was fitted with sedilia carved in stone.

It is difficult to establish the original location of most of the stones within the interior design, for they are extremely fragmentary (e.g. Illus. 3.6.36).

Only specific functional details, such as glazing slots to identify window tracery, provide enough evidence for legitimate discussion of specific provenance. One has only to look at elaborate interiors of the late Gothic period, such as the Lady Chapel at Canterbury or the Divinity School at Oxford (Illus. 3.6.7), to appreciate that the majority of mouldings and carvings are generally devoid of useful context in this respect if broken off from the blocks which linked them together; though their style may help with dating and attribution. It is against this background that one must consider the pieces of stonework relating to the wall areas of the chapter house interior. These have been divided loosely into four groups, and will be treated in this order: tracery, wall mouldings, capitals and corbels, and stringcourses.[74]

The pieces belonging to the mullions of the window tracery are so fragmentary that for some time after the excavation they eluded identification. It was assumed that the windows had been removed completely at the Dissolution for use at another site, most probably Sir Richard Lee's new house at Sopwell nearby.[75] There are contemporary precedents for the wholesale re-use of ecclesiastical windows, as at Hampton Court,[76] for late Perpendicular tracery was not out of fashion around 1540. Moreover, stones recovered from the Sopwell site prove that some materials from the chapter house were employed there, as will be shown more fully below.

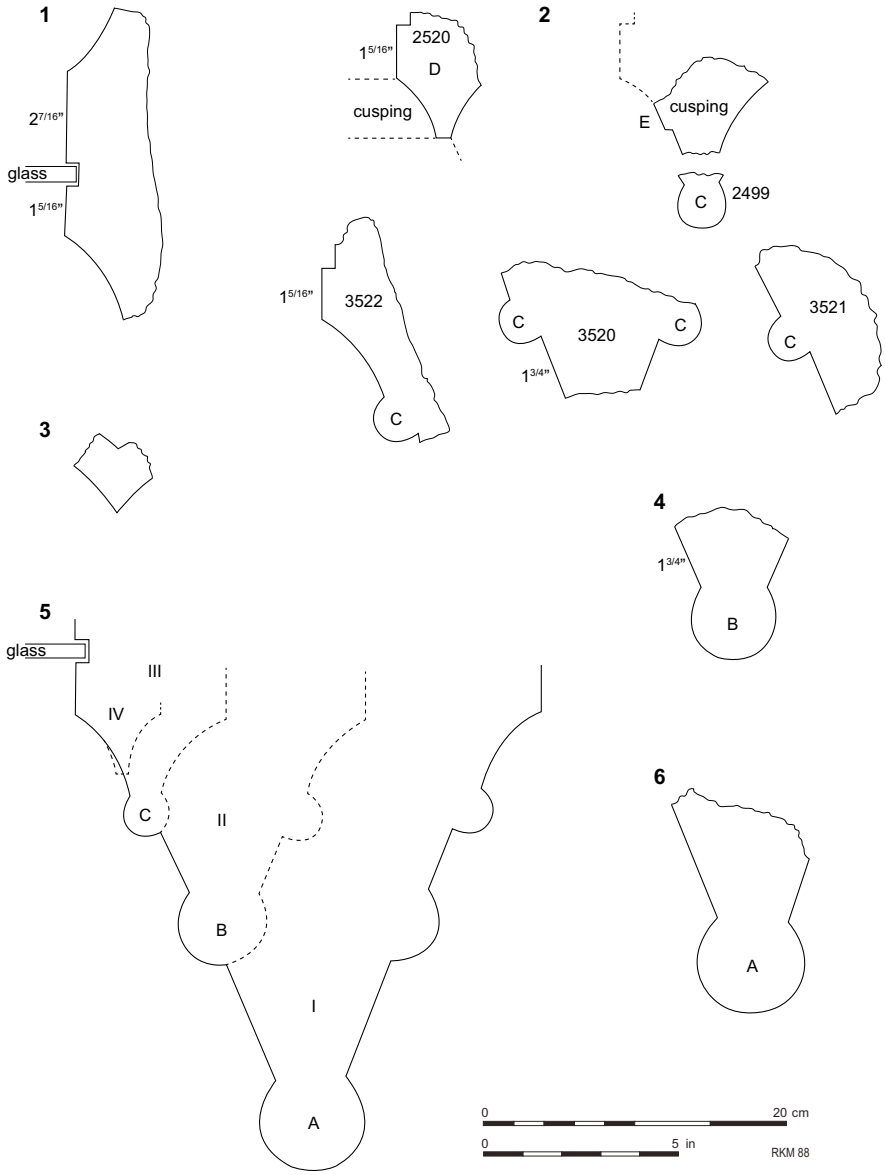
Eventually, however, by painstakingly matching various fragments of moulding, mullion profiles (Types 967, 968) have been reconstructed which almost certainly must belong to the chapter house windows.[77] The

[74] No loose stones were recovered which could be identified as belonging to a door frame.

[75] For Sopwell, see Doggett 2001, 170–1.

[76] Forty windows taken from the dissolved abbey of Rewley in 1537 and re-used at Hampton Court, almost certainly to light the king's new bowling alley; cited in Colvin 1982, 132.

[77] The reconstruction of the complete mullion profile is drawn from two main Types, 967 and 968, which were recorded separately before it was realized that they belonged to the same feature.

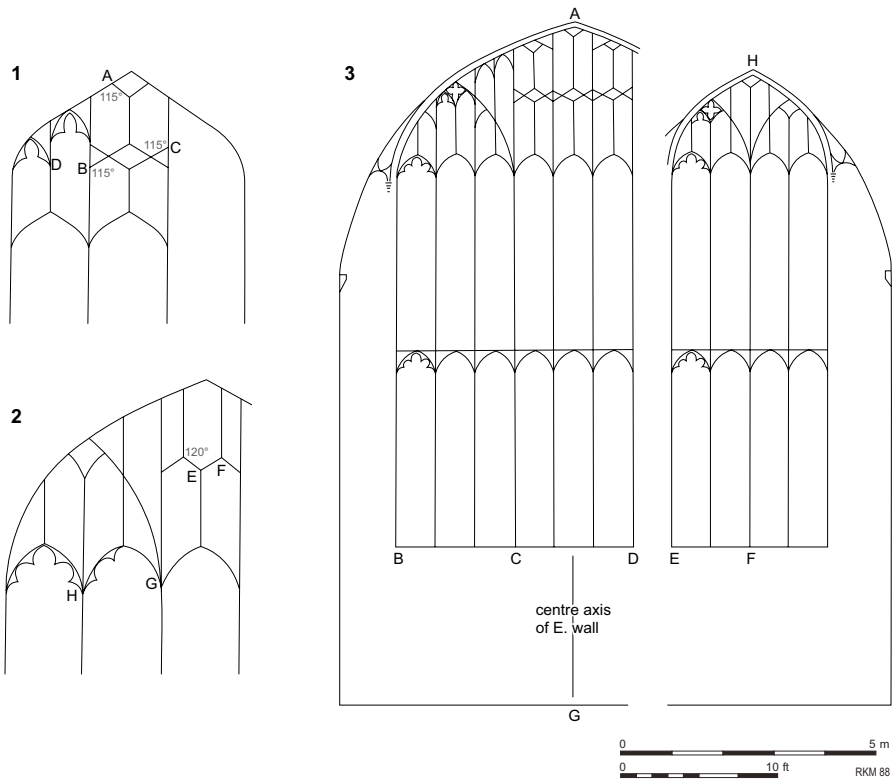


Illus. 3.6.37. Chapter house, window mullion profiles. 1: *RF 3073*, fragment with a glass slot. 2: six fragments of mullion Type 967, with their *RF*; the cusped piece (E) is from Trench 1, Layer 89. 3: *RF 2509*, fragment of cusping. 4: *RF 3519*, axial moulding for the main mullion 'II'. 5: reconstruction of the mullion profiles. 6: *RF 2359*, possible axial moulding for a strong vertical mullion 'I'.

nature of the jigsaw puzzle may be judged by the size of the pieces illustrated in Illus 3.6.36 and 3.6.37, 2. In fact, only one fragment, a find from Trench 3, Layer 437, preserved a complete slot for glazing (Illus. 3.6.37, 1),[78] but this piece in isolation was of little significance until it was realized that it belonged with a group of pieces characterized by small roll mouldings, which up to that moment were not obviously identifiable as parts of mullions (Illus. 3.6.37, 2). It should be stressed that none of the components illustrated in Illus. 3.6.37 are parts of a jigsaw that fit with another (i.e. they do not derive from the same piece of mullion), and that the reconstruction is based upon the observation of similar dimensions and design.

This analysis provides enough evidence to isolate at least two sizes of mullion, 'II' (minor) and 'III' (main), and possibly 'I' (a strong vertical mullion) as well (Illus. 3.6.37, 5 I–III). As no single piece of any of the mullions

[78] This chance survival is probably due to the fact that a square hole for a glazing bar ran through the stone, and that it broke at this point, presumably whilst the tracery was being dismantled to extract the iron bar.



Illus. 3.6.38. Chapter house window tracery, 1–2: diagrams of some Perpendicular window traceries, to illustrate possible provenances of tracery junction pieces; 3: diagram to show some possible features of the east window; 4: diagram to show some possible features of a lateral window.

survived intact, the identification of their axial roll mouldings was crucial in proving the existence of the mullions as separate entities (Illus. 3.6.37, 2C, 4B, and 6). The heavy profile of mullion 'I' might have formed the strong vertical mullions of the large terminal windows (Illus. 3.6.38, 3C–D).[79]

Moreover, of great interest was the independent discovery later of a complete piece of mullion III amongst materials from the Sopwell site, excavated in 1962 (Illus. 3.6.39, 1–2).[80]

This fits perfectly the fragments found in the chapter house excavation, and there must be a strong presumption that its provenance is also the chapter house (cf. Illus. 3.6.37, 5 III). It shows no trace of slots for glazing, however, even though its profile is preserved to a considerable depth on one side (Illus. 3.6.39, 2).[81] Also, its form is less compatible with window tracery,[82] and is more likely to derive from a feature such as a row of foiled figures, for which a framing archlet or oculus would not be essential (Illus. 3.6.39, 3). Its context may have been a row of linked quatrefoils, such as may be seen employed horizontally in the lower parts of the canopy of the monument of Humphrey, duke of Gloucester, to which it bears a close resemblance (Illus. 3.6.40). In which case, it is much more likely in the fifteenth century that this form of decoration would be used for blind tracery decoration, as in the above examples, than for glazed window tracery.

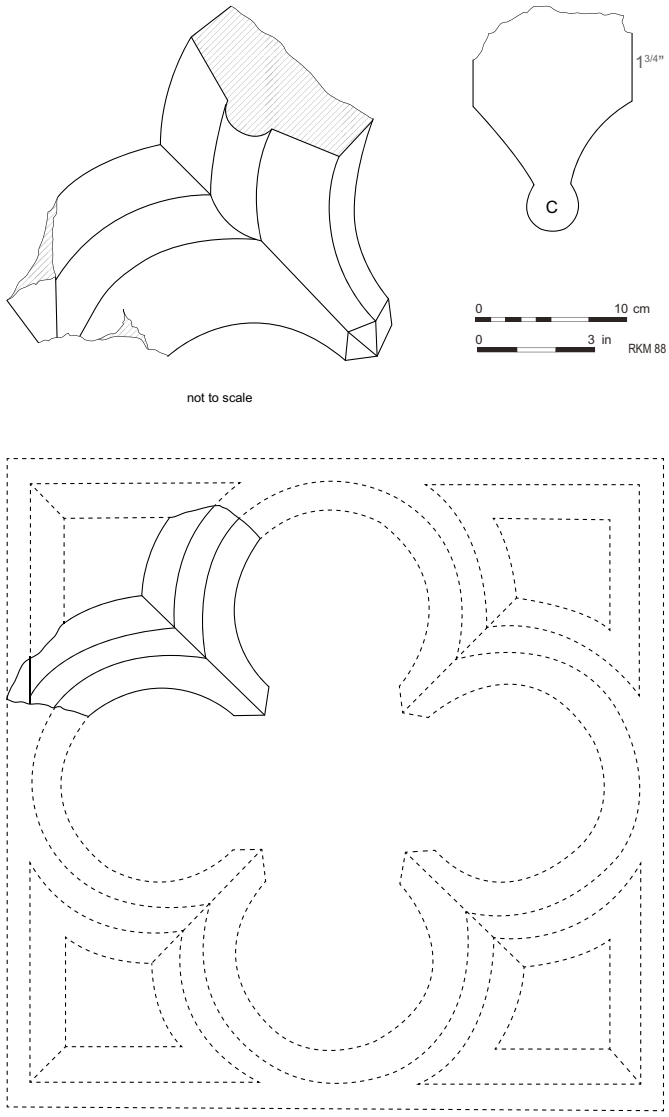
The cusping of the actual windows was of conventional design, created from the hollow moulding of the mullion profile, and typically of slightly less depth than it (Illus. 3.6.37, 5 IV). This was ascertained from *RF 2520* and a find from Trench 1, Layer 89 (Illus. 3.6.37, 2D), both of which are compatible in size and design

[79] The axial moulding of Mullion I is reconstructed from *RF 2359*, the wedge-shape of which has the same angles as those for Mullion II. It is the only piece with this exact geometry, though numerous other fragments of similar profile (nicknamed 'keyholes') were recovered in the excavation. The reconstructed profile of the strong vertical mullion would be about 305 mm wide (12 in.) and about 710 mm (28 in.) deep.

[80] The author saw the stone and drew its profile in September 1980, when it was in the temporary archaeological store in the former stables of Verulam House, St Albans, in a box labelled 'Sopwell, 1962, E. Johnston'. Enquiries in 1986 failed to locate it, and its present whereabouts are unknown; pers. comm., Stephen Greep and Helen Paterson.

[81] This may be because it was originally part of the exterior face of the mullion. The study of other Gothic buildings shows that if the glass slot is off centre, there is usually a greater depth of flat stone between the glass slot and the exterior face of the mullion, e.g. the later 14th-cent. great hall at Kenilworth Castle.

[82] This might be accommodated as a piece from the junction of the heads of two cusped lights (e.g. Illus. 3.6.38, 2H), except that there are no mouldings for the archlets framing the cusping, which are almost invariably present in 15th-cent. window tracery.



Illus. 3.6.39. Sopwell, St Albans, fragment of cusped tracery. 1–2: front face and profile. 3: the Sopwell piece reconstructed as part of a quatrefoil panel.

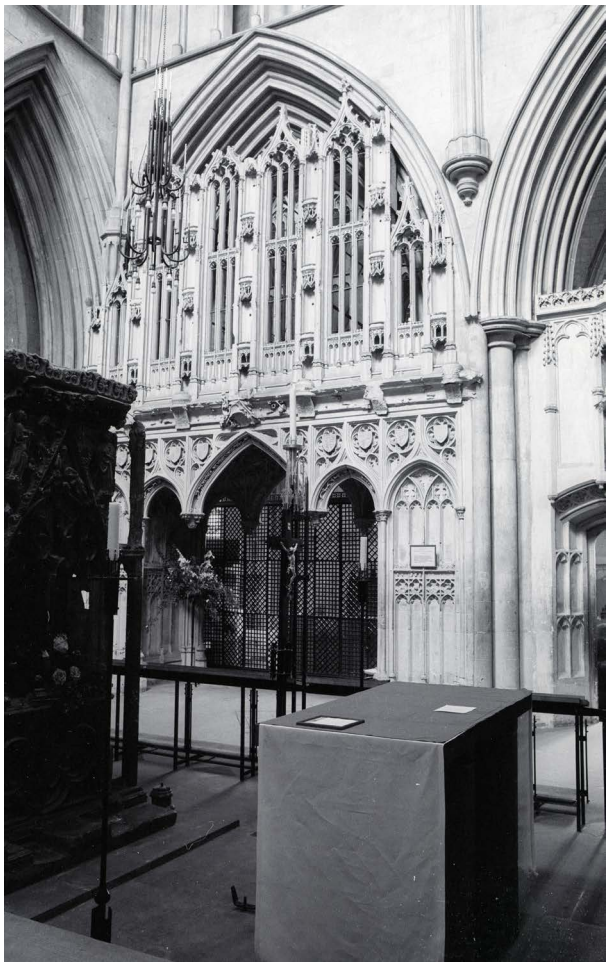
with the other mouldings of mullion III.[83] In contrast, however, the Sopwell piece, discussed above, employs the complete mullion profile for the cusping, which is less usual in blind or glazed tracery of this period (Illus. 3.6.39, 1). *RF 2509* also seems to have this characteristic, in the way in which the roll moulding of the mullion profile is part of the cusping (Illus. 3.6.37, 3).[84] We have to conclude, then, that the main tracery system in the chapter house employed two conventions for cusping, which are compatible (see Illus. 3.6.37, 5 III and IV) but for which there is no evidence that they were ever found together in the same window. The implication is that one was applied to blind tracery and the other to glazed tracery, but the stones on which this division is based are so fragmentary that it is impossible to resolve the matter with any degree of certainty.

Four other designs of mullion profile were recovered in the excavation, two of which were not connected with the chapter house.[85] The other two are moulding

[83] Several other fragments of cusping were recovered, of which five pieces – finds from Trench 2, Layer 350, Trench 2, Layer 604, Trench 3, Layer 192, Trench 3, Layer 291, Trench 3, Layer 301 – measure 35 mm between the glass slot and the hollow moulding, as found on the interior face of the mullion (Illus. 3.6.37, 1), and therefore are presumed to come from the window tracery; though they are too damaged to provide a complete moulding profile.

[84] *RF 2509*, at no more than 50 mm across, is too fragmentary to indicate whether it derives from blind or glazed tracery. Over fifty other fragments of Mullion III were recovered with the roll moulding following an arched form, but uncusped, and therefore most of them are likely to have come from standard curved areas of tracery, such as the archlets of lights, e.g. *RF 2499* and *RF 2501* (Type 951).

[85] One of these is a single large piece of window jamb found at Trench



Illus. 3.6.40. St Albans Abbey, monument to Humphrey, duke of Gloucester.

Types 990 and 991, illustrated in Illus. 3.6.41, 1 and 2 respectively. *RF 1365* (Type 991) is from a tracery head and has provision for glazing on one side only, an asymmetry which is often found in the smallest interstices of tracery (Illus. 3.6.41, 2A).[86] The mullion profile is similar in design to that of the lesser mullion of the chapter house windows (Illus. 3.6.37, 5 III), and it might be a minor tracery piece from one of these windows; but with only one piece surviving, it is hard to be more specific. The best example of Type 990, *RF 2064* (Illus. 3.6.41, 1A), was actually found south of Trench 1, but if it belongs with two other stones from the excavation (Illus. 3.6.41, 1B–C), as seems likely, then it was part of a scheme of glazed and blind tracery, employing two varieties of mullion profile (Illus. 3.6.41, 1A and D).[87] With the exception of these two pieces, the provenance of the others is predominantly from Trench 1,[88] so they might therefore be linked with the east walk of the cloister, and perhaps with the refurbishing of the lower facade of the chapter house facing on to the cloister walk, in the time of Prior John de la Moot in the late fourteenth century. The style of the mullion profiles is compatible with work of this date.

To return to the prevalent mullion type of the chapter house, described above (Type 967/968), it would be desirable to reconstruct the tracery patterns of the windows, but any attempt to do so is hampered by almost insurmountable difficulties with the evidence. No large pieces of tracery survive at all, and the scraps which have been salvaged are so damaged that one cannot be sure whether they derive from windows or from blind tracery (Illus. 3.6.36). There is also uncertainty as to whether any piece belongs to the lateral windows or the terminal windows, which were considerably different in size and proportion, and therefore probably in some aspects of their design as well.

At least three patterns can be identified amongst the tracery pieces of Type 967/968, the first of which displays an angular junction of two mullion profiles. A typical example is *RF 2500* (Illus. 3.6.36, top centre). There is just enough of the mullion to indicate a straight major mullion from which springs a minor mullion at an angle of 115° (Illus. 3.6.42, 1).[89] The piece is too mutilated to tell whether the major profile was a complete mullion or the demi-profile employed for the window frame, so various contexts may be envisaged for it in tracery patterns fashionable in the area (Illus 3.6.38, 1A–C; 3.6.43). Essentially the choice lies between a location as part of the arch of a window which is fairly straight-sided near its apex, perhaps a four-centred 'Tudor' arch (Illus. 3.6.38, 1A); or as part of a jamb or strong vertical mullion at the junction with a batement light (Illus. 3.6.38, 1B–C).[90] The most common usage of completely angular junctions seems to be in connection with batement lights, and particularly for their heads (e.g. Illus. 3.6.38, 1A).

1, Layer 1, which was on the site at the start of the excavation, re-used in a wall of the Deanery garden datable to the later 19th cent. (Illus. 3.6.41, 3). The other group of four pieces (Type 992) is represented by *RF 2040* (the others are *RF 2363* and two finds from Trench 2, Layer 600 and Trench 2, Layer 650), and consists of quite elaborately moulded and cusped tracery which was part-glazed and part-open (Illus. 3.6.41, 4); it also includes evidence of a transom (*RF 2363*). Both types have rebates to receive shutters on the interior profile, and are therefore likely to emanate from a domestic context – in the case of Type 992, perhaps from the 14th-cent. rebuilding of the dormitory.

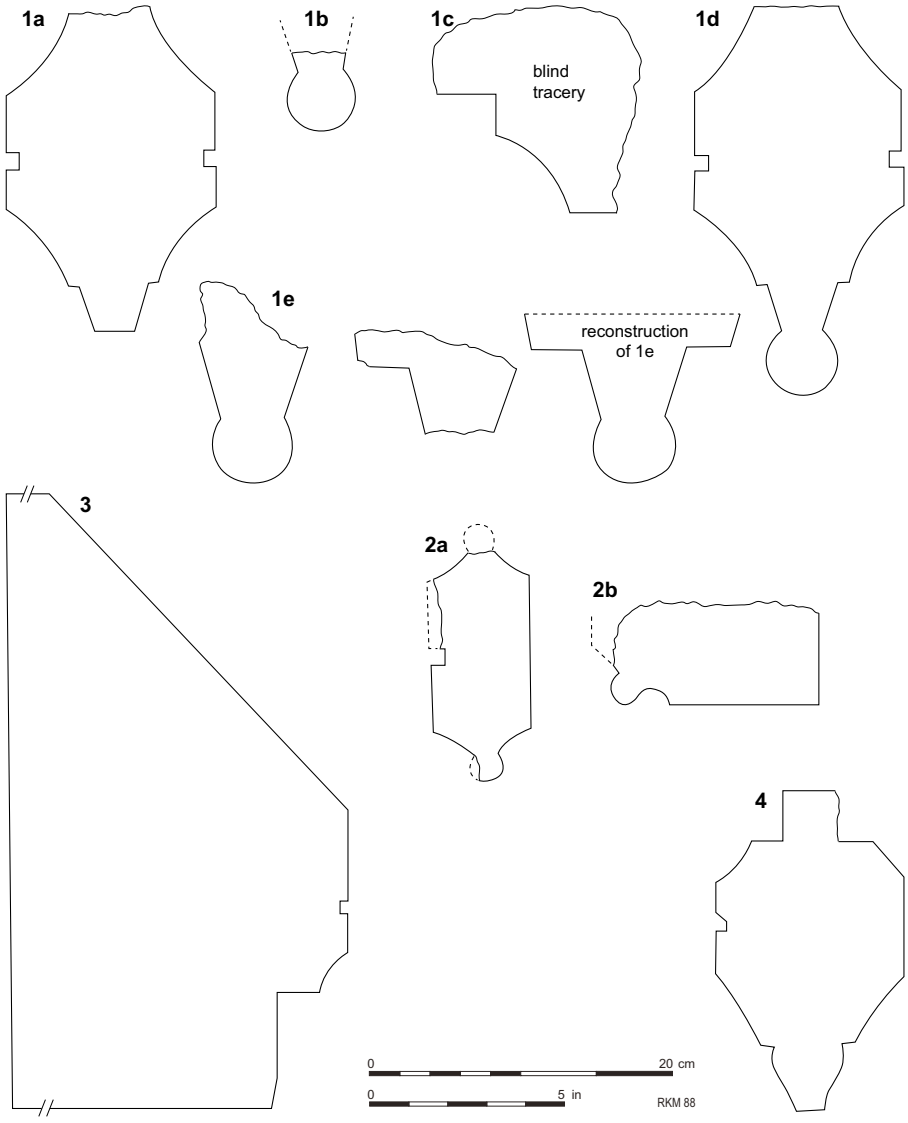
[86] Its delicate scale and small bead moulding are shared by *RF 1129*, which suggests that they belong together (Illus. 3.6.41, 2B).

[87] Also related may be the axial feature from two finds from Trench 3, Layer 298 and Trench 3, Layer 236, which can be reconstructed to form a slightly larger version of one of mullion profile D, though too fragmentary to indicate whether it is a piece of tracery (Illus. 3.6.41, 1E).

[88] Of eleven pieces of Type 990, eight are roll mouldings (Illus. 3.6.41, 1B); six are from Trench 1 (e.g. Trench 1, Layers 87, 150, 153), three from Trench 2, one from Trench 4, and one unclassified (south of Trench 1).

[89] Two other fragmentary pieces of this type are finds from Trench 3, Layer 291 and Trench 2, Layer 350.

[90] For the terminology employed to describe Gothic windows, see further Harvey 1978, 68–72, 240–5; and Willis 1844, 51.

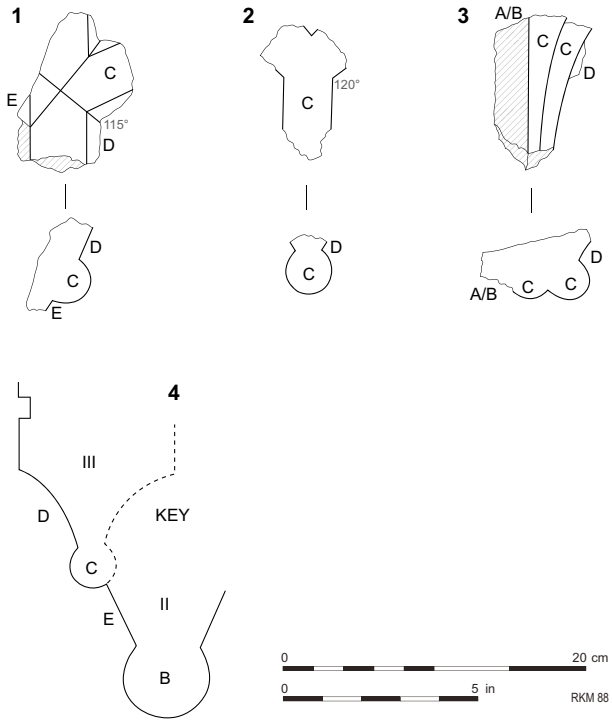


Illus. 3.6.41. Chapter house, miscellaneous mullion profiles from the site. 1: Type 990, perhaps from the cloister, late fourteenth century: a, *RF 2064*, minor mullion; b, *RF 3554*, axial moulding; c, *RF 3532*, blind tracery; d, main mullion profile, based on 1, a–b; e, *RF 2413* (axial moulding) and *RF 3552*, and a reconstruction based on them. 2: Type 991, perhaps from the tracery heads of the chapter house windows: a, *RF 1365*, a tracery piece; b, *RF 1129*, a related piece. 3: large piece of window jamb, from Trench 1.1, re-used in a wall of the deanery garden. 4: Type 992, *RF 2040*, perhaps fourteenth century, domestic.

Batement lights are also suggested by the second type of tracery piece, represented by a find from Trench 4, Layer 102. This is from a point where the axial roll mouldings of three mullions converged at angles of about 120° in a 'propeller' pattern (Illus 3.6.36, right; 3.6.42, 2). It is impossible to be sure how far the two stumps of roll moulding continued to run in straight lines, but the better preservation of the third roll moulding clearly indicates that it was straight and so must be part of a mullion. As all three profiles are of minor mullions only, a reconstruction which places them at the top or bottom junction of a pair of batement lights appears the most convincing (Illus. 3.6.38, 2E–F). One other clue to the existence of batement lights is provided by a find from Trench 1, Layer 89, a minor mullion profile with cusping springing on one side of the centre axis but absent on the other (Illus. 3.6.37, 2E), which would fit in the context of batements of staggered height under the superarch of the window (Illus. 3.6.38, 1D).

A third type of tracery piece involves the junction of curved elements, as found in *RF 2478*.[91] Here two roll

[91] Three other pieces are finds from Trench 1, Layer 153, Trench 2, Layer 142 and Trench 3, Layer 566.



Illus. 3.6.42. Chapter house, window tracery. 1–3: fragments of junction pieces, plans and sections: 1, *RF 2500*; 2, *RF 3523*; 3, *RF 2478*. 4: key: chapter house mullion profiles. To locate components of junction pieces, see Illus. 3.6.43. Thame (Oxon.), parish church, north transept east window, detail.

mouldings of a minor mullion profile spring from the side of a larger element which is mutilated, presumably a major mullion and apparently running in a straight line (Illus. 3.6.42, 3). In as far as anything can be predicted from such a small fragment, this piece seems to indicate the existence of sub-arcuation, probably in combination with strong vertical mullions, as illustrated in Illus. 3.6.38, 2G. This form of sub-arcuation works best in a window head which is approximately two-centred in design (e.g. Illus. 3.6.38, 2), rather than one which is exaggeratedly four-centred (e.g. Oxford Divinity School, Illus. 3.6.44).

In sum, what can be gleaned from the tracery fragments inclines one to reconstruct all the windows with batement lights, some of which were staggered towards the edges of the window head. In addition, sub-arcuation may have been employed, and the large terminal windows may well have used strong vertical mullions in conjunction with this feature. Presumably the heads of the main lights were cinque-cusped as was almost invariable at this period, but there is no evidence to indicate whether their archlets were two-centred or ogee-headed. Drawings to give some idea of the possible forms of the terminal and lateral windows are illustrated in Illus. 3.6.38, 3–4. To describe their tracery patterns as reconstructions would be too grand, given the paucity of the evidence. The ideas are based on the observation of fifteenth-century tracery designs found particularly in the Oxford area (Illus 3.6.43 and 3.6.44),[92] selected to accommodate the features implied by the surviving fragments from the chapter house, and also taking into account the likely configuration of the vault against the wall elevations.

Some estimate of the width of the windows can be gained from the position of the main features on the excavation plan and this indicates, in combination with design considerations, that the lateral windows were probably of four lights and the terminal windows of either seven or nine. For the lateral windows, as for the vault, the representative bay for measurement is the second from the east. In it, the distance at ground-level between the footings of the lateral buttresses is 4.19 m (13 ft 9 in.) (Illus. 3.6.1V–W),[93] but the width of the buttresses, 1.18 m (3 ft 10½ in.), would have been reduced considerably if ground-course mouldings were employed. A reduction of about 20% might be anticipated in the width of the buttresses,[94] in which case one should allow about 230 mm (9 in.)[95] more between the buttresses at window sill level. Thus, in theory the maximum width available for each window aperture would be about 4.42 m (14 ft 6 in.) before allowance is made for other factors. Most significant of these would be a considerable area of wall between the windows, retaining the thickness of the twelfth-century walls and employing window apertures of only moderate width. A good comparison is the chancel of St Mary the Virgin, Oxford, where the width of the windows is also less than the space between the buttresses (Illus. 3.6.45). [96] The thickness of the wall seems to be an important factor,[97] and one shared in common with the Canterbury chapter house, where the slightly earlier remodelling on Romanesque foundations also included a surprisingly large area of wall surface between the windows (Illus. 3.6.34).

[92] Other stylistic considerations indicate strong links with masons connected with Oxford in this period; see further below, pp. 232–6, n.166. Amongst the windows considered were a number connected with the style of Richard Winchcombe, e.g. Oxford Divinity School, and the parish churches of Adderbury (chancel, restored) and Thame (transepts and tower); also the tracery of All Souls College and St Mary the Virgin, Oxford, and St George's Chapel, Windsor.

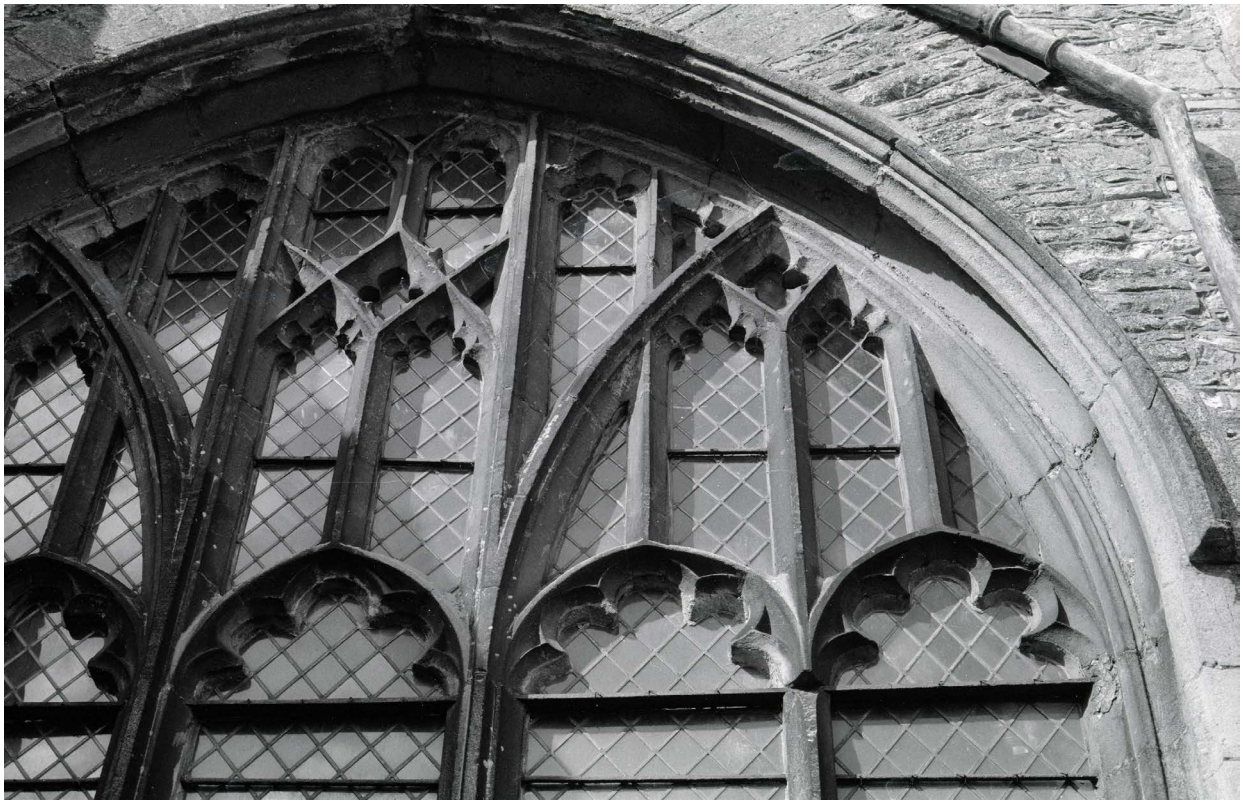
[93] Measured on the north side (4.12 m on the south side).

[94] Following the model of the buttresses of the Divinity School, Oxford, but note that for the chancel of St Mary the Virgin, Oxford, the reduction in the width of the buttresses is as much as 45%.

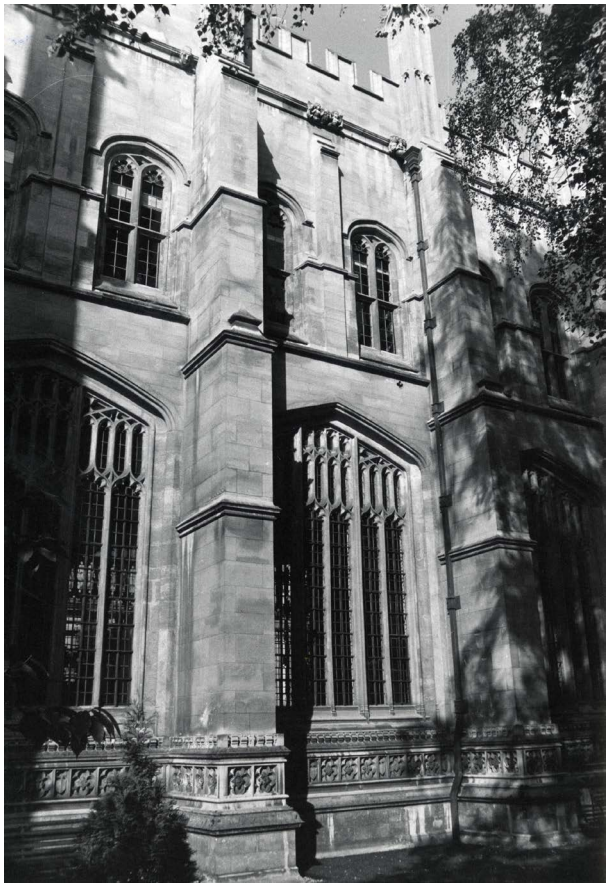
[95] From this point on, the dimensions relating to the windows were calculated using Imperial measurement, with the metric equivalents then supplied.

[96] In contrast, a more adventurous work like the Divinity School maximizes the available window area between the buttresses (Illus. 3.6.7).

[97] The thickness of the Divinity School wall is about 1.22 m (4 ft), whereas the chapter house wall is 1.60 m (5 ft 3 in.): both dimensions measured at ground level.



Illus. 3.6.43. Thame (Oxon.), parish church, north transept east window, detail.



Illus. 3.6.44. Oxford, Divinity School, exterior, south side.



Illus. 3.6.45. Oxford, St. Mary the Virgin, chancel interior.

With these considerations in mind, and calculating the width of a light for a reasonably sized ecclesiastical window at about 0.76 m (2 ft 6 in.),[98] a composition of four lights seems the most likely solution here.[99] This would give a width of about 3.08 m (10 ft) for each window, including the mullions, but in addition one must allow for the splay and the extra mouldings of the window frame, so that the full width of each aperture was probably between about 3.40–3.70 m (11–12 ft).[100] The height of a lateral window in an aisle-less building of this date is most unlikely to exceed three times its width, so a figure of about 9.25 m (30 ft) is proposed as a guide to the absolute maximum height (Illus. 3.6.38, 4). This calculation has important consequences for the height of the chapter house, as the total interior height to the tops of the lateral windows would not have risen much above about 12.32 m (40 ft), even allowing for the window sills to be set a considerable distance above the seat bench. The apex of the vault would have been slightly higher: its main ridge is reconstructed about 0.9 m (3 ft) higher in Illus. 3.6.38, 3A. The determining factor for the lowest possible position of the window sills might have been the height of the slype against the two west bays on the north side (Illus. 2.4.2). For the sake of uniformity, all the windows along the north side and those in the three eastern bays on the south side may have sprung from this level, with blind or only partly glazed tracery in the two south bays, adjoining the dormitory block.[101]

There is no direct evidence for estimating the size of the great east window. One could assume that the amount of wall on each side of the window would be about the same as that flanking the lateral windows in the east bay. Thus one would deduct about 1.34–2.18 m from the interior width of the chapter house, 9.20 m (30 ft 2¼ in.), to give an available width of about 7.02–7.80 m (23–26 ft), excluding the mouldings of the splay.[102] It is virtually certain that the design involved either seven or nine lights, as this is the standard form for all comparable examples of Perpendicular great east windows.[103] Assuming lights of the same width as those postulated for the lateral windows, namely about 0.76 m (2 ft 6 in.), windows of seven and nine lights would occupy about 5.39 m (17 ft 6 in.) and 6.93 m (22 ft 6 in.) respectively. So a seven-light composition would easily fit into the estimated width available, but this reconstruction would produce a relatively narrow window (Illus. 3.6.1, I–I^1). Only if each light was to be increased to about 0.915 m (3 ft) in width would a seven-light composition provide a satisfactory solution.[104] Instead, the nine-light option is proposed here, for its width would be visually more appropriate for the east wall without diminishing the structural masonry at the corners of the chapter house too much (Illus 3.6.1, J–J^1 and 3.6.38, 3). A nine-light composition would be divided almost certainly into three groups of three lights each, which would lend itself well to the use of strong vertical mullions combined with sub-arcuation (Illus 3.6.6; 3.6.38, 3). The great area of the window would also justify three sizes of mullion, the largest being used for the vertical mullions, the main arches and the transom (Illus. 3.6.38, 3C and D; see also Illus. 3.6.37, 5 I).

Some ideas about the relative height of the east window can be gleaned from studying the internal arrangements of other chapter houses. Exeter is most appropriate as a comparison, because the apex of its east window is kept at about the same level as the tops of the lateral windows (Illus. 3.6.35), which would have to be the case at St Albans because of its stone vault. By contrast, at Canterbury the designer has taken advantage of the high-coved ceiling to project the terminal windows well above the level of the side walls

[98] From centre to centre of the mullions, and therefore including an allowance for the stonework. The general range of widths from extant examples varies from about 0.60 m (2 ft), which is very narrow, to about 0.90 m (3 ft) maximum. Comparable windows of the period in the Divinity School, Oxford, and the north transept of Thame parish church (Oxfordshire), have lights of about 0.76 m (2 ft 6 in.) width.

[99] The total width of 3.84 m (about 12 ft 6 in.) for a five-light window is too wide for the hypothesis postulated here; although it would fit if one considered that the windows occupied all the space between the buttresses.

[100] The space consumed by window splays can vary enormously in extant examples, though in general thicker walls usually require larger splays. For example, Thame parish church, north transept, north window – window width about 3.99 m (13 ft), estimated wall thickness about 1.14 m (3 ft 9 in.), space consumed by the splay about 270 mm (10½ in.); Thame, north transept, east window – window width about 3.59 m (11 ft 8 in.), estimated wall thickness about 0.91 m (3ft), space consumed by the splay about 80 mm (3 in.); St Mary the Virgin, Oxford, lateral windows of chancel – window width about 2.30 m (7 ft 6 in.), estimated wall thickness about 1.14 m (3 ft 9 in.), space consumed by the splay about 250 mm (10 in.).

[101] Or was the dormitory block one bay south of the chapter house, with the day stairs, perhaps a lower structure, in the intervening bay?

[102] The variation in these figures stems from the fact that the east bay, at 5.76 m (18 ft 10¾ in.) is longer than the model bay, and therefore that two positions are possible in the east bay for the aperture of each lateral window. (1) In the centre of the length of the bay, which leaves about 1.76 m (about 5 ft 9 in.) available for splays and blank wall. Alternatively, (2) offset towards the west, so that the distance between the lateral window in the east bay and that in the second bay from the east is the same as for the other bays (about 0.67 m; Illus. 3.6.1, M–N and M^1–N^1 respectively), which gives about 1.09 m (3 ft 7 in.) between the window and the east wall (Illus. 3.6.1, K–L). The latter seems the more likely solution at St Albans. It is worth noting, for example, that in a comparable work, the chancel of St Mary the Virgin, Oxford, externally the east bay is wider than the others (measured between the lateral buttresses), and the lateral windows of this bay are not centred between the buttresses externally, but are offset to the west; see RCHME, *Oxford* 1939, 134, plan.

[103] For example, the chapter houses of Gloucester, Christ Church at Canterbury, and Exeter (Illus 3.6.34, 3.6.35); and the chancel of St Mary the Virgin, Oxford (Illus. 3.6.45).

[104] The grouping of lights in a seven-light design would be 3:1:3 or 2:3:2. Both compositions lend themselves well to the use of strong vertical mullions, combined with sub-arcuation. Using Ilus. 3.6.38, 3–4, a 2:3:2 design can be produced by flanking the central feature of Illus. 3.6.38, 3 (C–D) with the two-light units from Illus. 3.6.38, 4 (E–F); or a 3:1:3 design by retaining the three-light side units of Illus. 3.6.38, 3 (B–C) whilst reducing the central feature (C–D) to only one light.

(Illus. 3.6.34). Such comparisons highlight the difficulty of designing a terminal window of sufficiently vertical proportions within the context of a building which has much narrower lateral windows. At Exeter, the terminal window has been kept relatively narrow, but also the sill was dropped much lower than those of the lateral windows (Illus. 3.6.35), an unusual device.[105]

Without evidence to the contrary, one has to assume that all the window sills were at about the same level at St Albans, and that the design of the west window repeated that of the east. The bottom of the west window would be determined by the position of the roof of the cloister east walk, and the latter would approximate to the height of the slype,[106] which in turn probably determined the baseline for the lateral windows, as argued above. Thus, in this respect, the interior effect would resemble Canterbury (Illus. 3.6.34). However, at St Albans, lacking the extra headroom provided at Canterbury by the coved ceiling, one must ponder an equation which allows sufficient height for the terminal windows whilst not elongating the size of the lateral windows excessively. These criteria would be satisfied if the height of each terminal window was not more than about 50% greater than the width, which is roughly the maximum proportion of height to width for extant windows in a comparable location. Thus the east window is reconstructed as about 10.20 m (33 ft) high (Illus. 3.6.38, 3), on a projected width of about 6.93 m (22 ft 6 in.), suggesting that the maximum height of the chapter house interior from the floor to the apex of the vault would be in the region of 13.25 m (about 43 ft) (Illus. 3.6.38, 3A–G). The proportions of each lateral window would then remain at about 3:1 (height to width), with the heads about 0.9 m (3 ft) lower than the apex of each terminal window.

The title of 'wall mouldings' given to the second category of stones is a term of convenience for several profiles usually associated with vertical elements in Gothic architecture, and which are part of a masonry surface rather than being free-standing. As has been shown above, the reconstruction of the vault implies that the actual wall surfaces would have been largely devoid of such mouldings, giving an appearance analogous to the interior of Canterbury chapter house (Illus. 3.6.34). Also, we know that there were no responds for the vault descending right down the walls to the seat bench at each bay division. Hence the main place for the consistent application of vertical mouldings would be the rere-arches of the window frames, and this is the likely provenance for the mouldings of Type 954.

The nine pieces classified as Type 954 and represented by *RF 2010* have a recognizable profile, focussed on a roll moulding or small shaft, with an ogee moulding on one side and a large hollow casement moulding on the other (Illus 3.6.46, 2A; 3.6.47A–B).[107] A similar idea employed for the mouldings of a window surround may be seen, for example, at the Divinity School, Oxford (Illus 3.6.7; 3.6.46, 1), and the fact that some pieces of Type 954 are slightly curved about the vertical axis would support such a reconstruction here. Unfortunately, the casement moulding does not survive complete, but on three of the stones, there is a vertical masonry joint part of the way along the casement (Illus. 3.6.47A, left) which, if placed at its halfway point, would produce quite a broad casement in a reconstruction, about 305 mm (12 in.) across (Illus. 3.6.46, 2B). It would probably be terminated at the lost end by the axial roll moulding of the main mullion profile, as in the window surround of the Divinity School (Illus. 3.6.46, 1). The roll and ogee moulding formation is likely to indicate the direction of the wall end of the splay, because the greater depth of the ogee moulding in relation to the casement implies a break in surface planes and a transition to the main axis of the wall (Illus. 3.6.46, 2C).

The characteristic profile of a large group of fragments denoted as Type 969 has similarities in design but is smaller in scale. It consists of a roll moulding flanked again on the one side apparently by a casement moulding and on the other by a broad fillet, but here leading to a hollow chamfer moulding rather than an ogee (Illus. 3.6.46, 3A).[108] In another group of examples (Type 970), the casement is replaced by a slightly curved surface following the wall plane (Illus. 3.6.46, 3C).[109] The hollow chamfer moulding is exactly the same size as that on two other pieces (Type 993), which clearly belong with this group and which preserve part of the wall surface behind (Illus. 3.6.46, 3B), proving that these are all fragments of a scheme of blind panelling.[110] An association with other features of the chapter house interior is suggested by the fact that the roll moulding is the same diameter as those used for the lesser mullion of the actual window tracery (Illus. 3.6.37, 5C) and for the crenellated stringcourse discussed further below (Illus. 3.6.48, 2); but otherwise the designs are not obviously related. Altogether the pieces are too fragmentary to

[105] At Exeter, the window aperture takes up only slightly more than half the width of the east wall. The Perpendicular remodelling at Exeter retained the earlier decorative arcading in the side walls (Illus. 3.6.35), whereas, in contrast, it has been shown that the 12th-cent. arcading was almost certainly removed at St Albans.

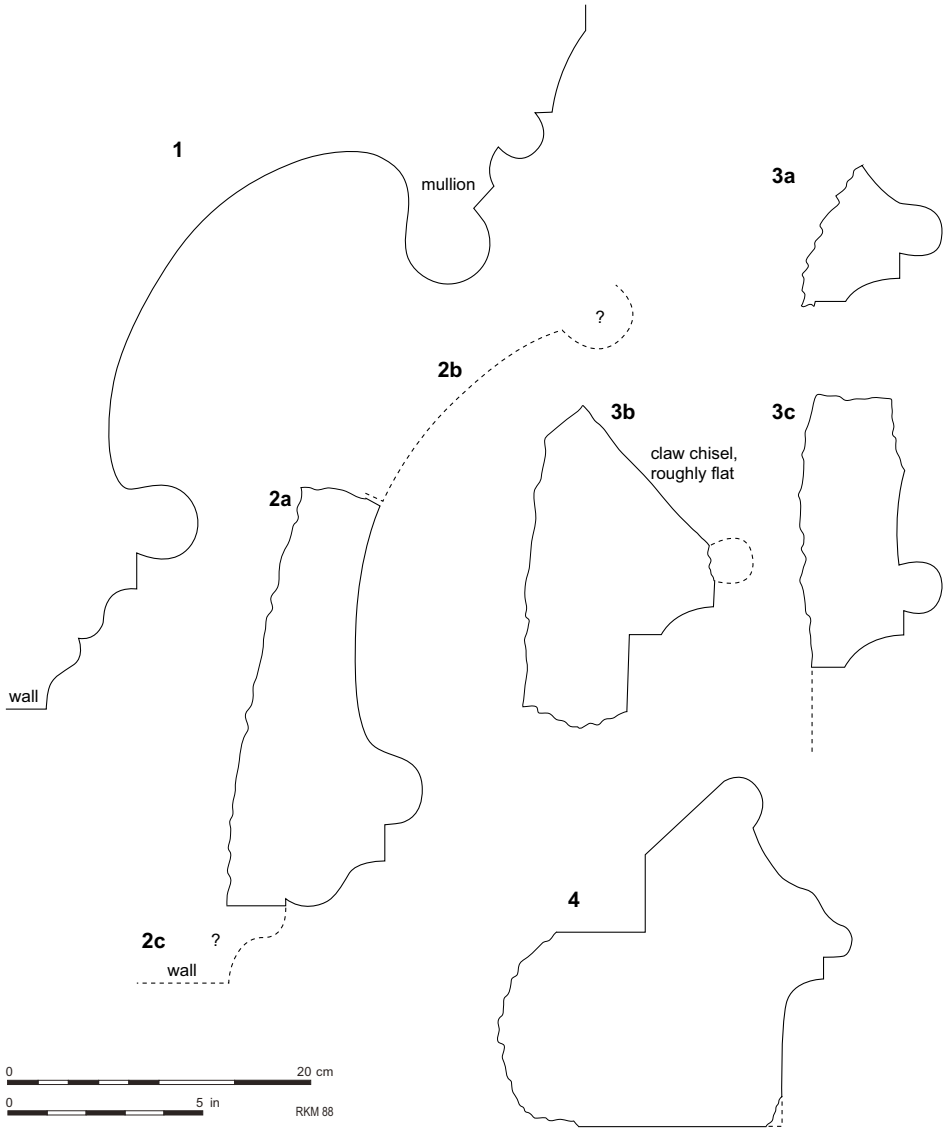
[106] See Neale 1877, plate 4, for a comparative elevation of the cloister and slype.

[107] The distribution of the nine pieces was – Trench 3, Layers 291, 302 (two pieces, one of which is *RF 2010*), 303 (two), 331 (three); Trench 4, Layer 108. Of the pieces from Trench 3, two groups, each of three, can be reconstructed as a jigsaw fit (e.g. Illus. 3.6.47A), and showed that the blocks of Totternhoe chalk-stone being used for this work in some cases were more 410 mm high.

[108] Fifty-nine pieces of this type were identified.

[109] Twenty-four pieces of this type were found.

[110] The two pieces were from Trench 2, Layer 459 and Trench 4, Layer 26.



Illus. 3.6.46. Chapter house, window frame and related moulding profiles. 1: Oxford, Divinity School, profile of an internal window frame (Richard Winchcombe, pre-1439). 2: Type 954, probably part of window frame: A, *RF 2010*; B and C, possible reconstruction. 3: Types 969 and 970, pieces of blind tracery (Type 52); A, *RF 2491*; B, *RF 3531*; C, *RF 2490*. 4: *RF 2365*, possibly from a fitting.

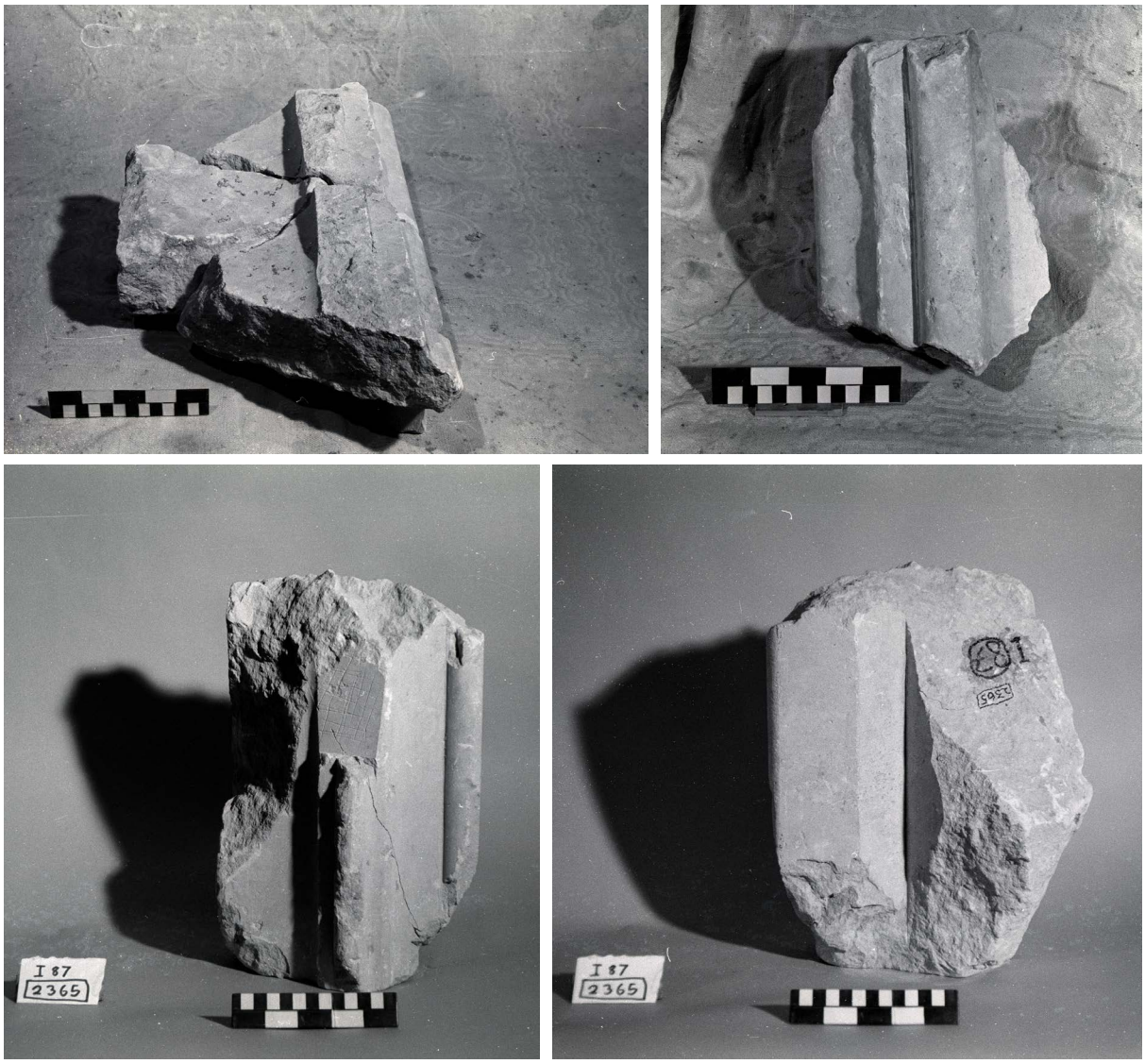
give any clear indications as to provenance, although sedilia or panelling along the east wall, in the vicinity of the abbot's seat, may be considered a possibility.

Another type, exemplified by *RF 2365*, has a moulding formation on one face not dissimilar to those of the two groups above, and a well finished angular rebate on the other (Illus 3.6.46, 4; 3.6.47C–D).[111] Of all the moulded stones excavated from the chapter house, this type is the most likely to have originated from a fitting such as an abbot's throne. The delicacy of the mouldings is appropriate for such a context, and the overall form of the stone suggests a prominently projecting feature. The rebate might possibly be explained as part of the housing for a wooden panelled seat.

Very few fragments could be identified from capitals and none with certainty from bases.[112] In part this reflects the general trend in later Gothic architecture to restrict capitals mainly to piers, vault responds and occasionally window frames (e.g. Illus. 3.6.7). The specific circumstances of the chapter house remodelling also meant that there was little opportunity for base

[111] Six other fragments have also been identified, three of which fit together.

[112] Only twelve possible fragments for capitals.



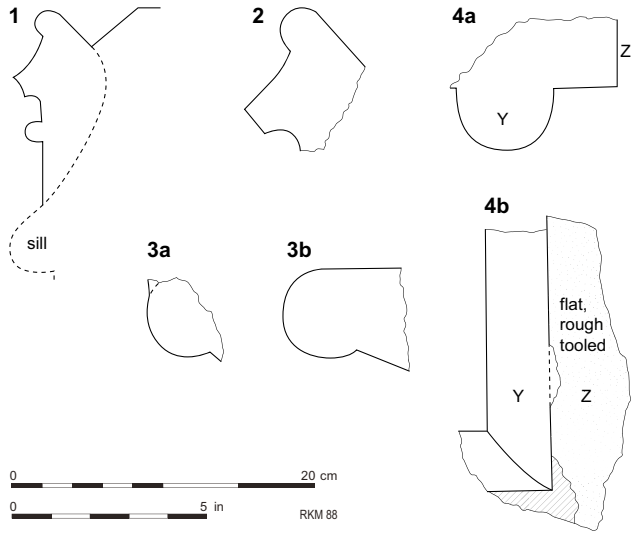
Illus. 3.6.47A–D. Chapter house, various moulding fragments. Scale 5 in./125mm. A: three stones reassembled , showing a large casement moulding, perhaps part of a window splay (from Trench 3, Layer 302, Layer 303, Layer 333). B: fragment with ogee and roll mouldings, perhaps part of a window splay (*RF 2010*). C: small fragment with delicate mouldings, perhaps from a fitting (*RF 2365*). D: *RF 2365*, showing the rebate on the reverse.

mouldings because of the lack of responds and of stone sedilia along the lateral walls. The profiles associated with capitals (or corbels) are illustrated in Illus 3.6.49 and 3.6.50.[113] All the fragments are circular in plan, with the partial exception of the profile in Illus. 3.6.49, 3, of which two examples are circular but the third (*RF 1389*) is part-octagonal (Illus. 3.6.27, left).

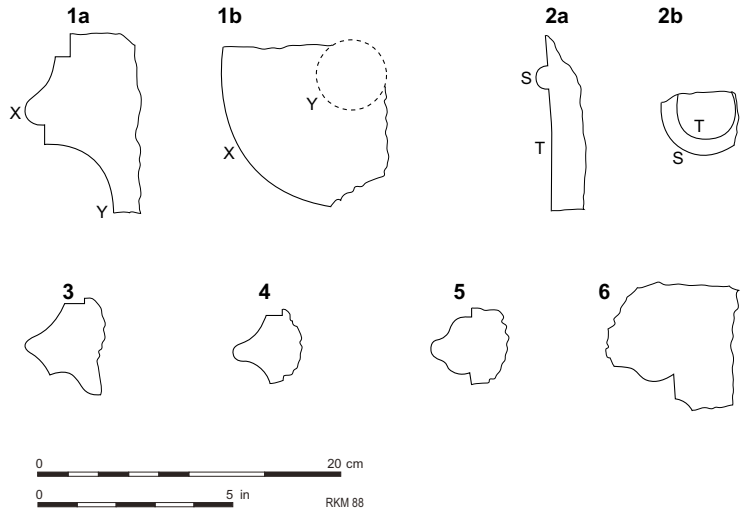
A polygonal plan for the top profile of a moulded capital, with the lower ones circular, is common in the Perpendicular style, but to adopt different plans for the same profile is unusual.[114] Only two of the profiles, *RF 2115* and a find from Trench 1, Layer 109, are sufficiently well preserved to provide information about the size of shaft to which they belonged. In the case of *RF 2115*, the narrowing of the profile indicates that it is close to the bottom of the capital (Illus 3.6.49, 1A; 3.6.50, left), and therefore that the shaft would have a radius of approximately 22 mm (Illus. 3.6.49, 1B). This would fit best the roll moulding of the Type 954 wall panelling (Illus. 3.6.46, 2A), which has been reconstructed as part of the window frame and is a location where capitals

[113] On stylistic grounds, it is possible that two of them derive from an earlier period than the 15th-cent. remodelling (Illus. 3.6.49, 5–6).

[114] The fragment illustrated in Illus. 3.6.49, 4, is also of mixed form, in that the moulding profile itself (the mid-roll of a capital or corbel) is curved in plan, but the surface above is flat. Presumably it marks the transition from the polygonal upper part of the capital to a circular lower part. The actual profile is the same design as the mid-roll of the nave arcade capitals of St Mary the Virgin, Oxford (1487–1503), though these are different in plan; illustrated in Bond 1906, 693, Capitals, Sheet V, No. 2.



Illus. 3.6.48. Chapter house, stringcourse details. 1: Oxford, Divinity School, crenellated stringcourse on a window sill, vertical profile. 2: *RF 2488*, merlon from a crenellated stringcourse, vertical profile. 3: a, *RF 3553*, from a 'T' junction; b, *RF 2494*. 4: *RF 2435*, from an 'L' junction: a, profile: B, plan.



Illus. 3.6.49. Chapter house, fragments of capitals or corbels. 1: *RF 2115*, vertical profile and section. 2: *RF 2525*, vertical profile and section. 3–6: vertical profiles of *RF 2317*, *2524*, *2523*, *2114*.



Illus. 3.6.50. Chapter house, pieces of capitals or corbels including *RF 2115* (left), *RF 2114* (top centre) and *RF 2317* (bottom right). Scale 5 in./125 mm.



Illus. 3.6.51A–C. Chapter house, fragments of stringcourse. Scale 5 in./125mm. A: pieces of merlon from a crenellated stringcourse, viewed from the front. B: pieces of merlon viewed from the side (*RF 2488*, right). C: fragment of a 'T' junction of roll mouldings, perhaps from a stringcourse (*RF 3553*).

might be expected. The other profile, from the necking of a capital, actually preserves part of the shaft, which is 19 mm in radius (Illus. 3.6.49, 2A–B), and therefore may belong with the profile tentatively ascribed to the abbot's throne, in which the larger roll moulding is of the same radius (Illus. 3.6.46, 4).

The only clear example relating to the stringcourse category consists of a series of short, regular lengths of stone denoted as Type 971.[115] Their sides are worked square, their bottoms are always broken, and none of them link up with each other (Illus. 3.6.51A–B).

Initially they posed quite a puzzle, until it became apparent that they were merlons from the miniature crenellations decorating a stringcourse. They had all been knocked off, probably accidentally, when the blocks of stone from which they had been carved were removed at the Dissolution, leaving only these fragments as tell-tales.[116] The use of miniature crenellated stringcourses is common in later Gothic work, and the profiles of the merlons are very similar, for example, to those along the window sills of the Divinity School at Oxford (Illus 3.6.48, 1–2; 3.6.52).[117] In addition, the way in which the diagonal surface at the back is consistently broken

[115] Eighteen fragments have been identified.

[116] For the effects of comparable damage, see Illus. 3.6.52: the diagonal break occurs in exactly the same place in the merlons found in the excavation.

[117] The range of width for most of the merlons compares almost exactly: 59–62 mm at St. Albans: 56–63 mm at Oxford. Ten merlons of Type 971 profile are sufficiently well preserved to measure. Of these, seven are between the range 59–62 mm; of the other three, one is 70 mm wide and two are 121 mm.



Illus. 3.6.52. Oxford, Divinity School, crenellated stringcourse of an interior window sill.

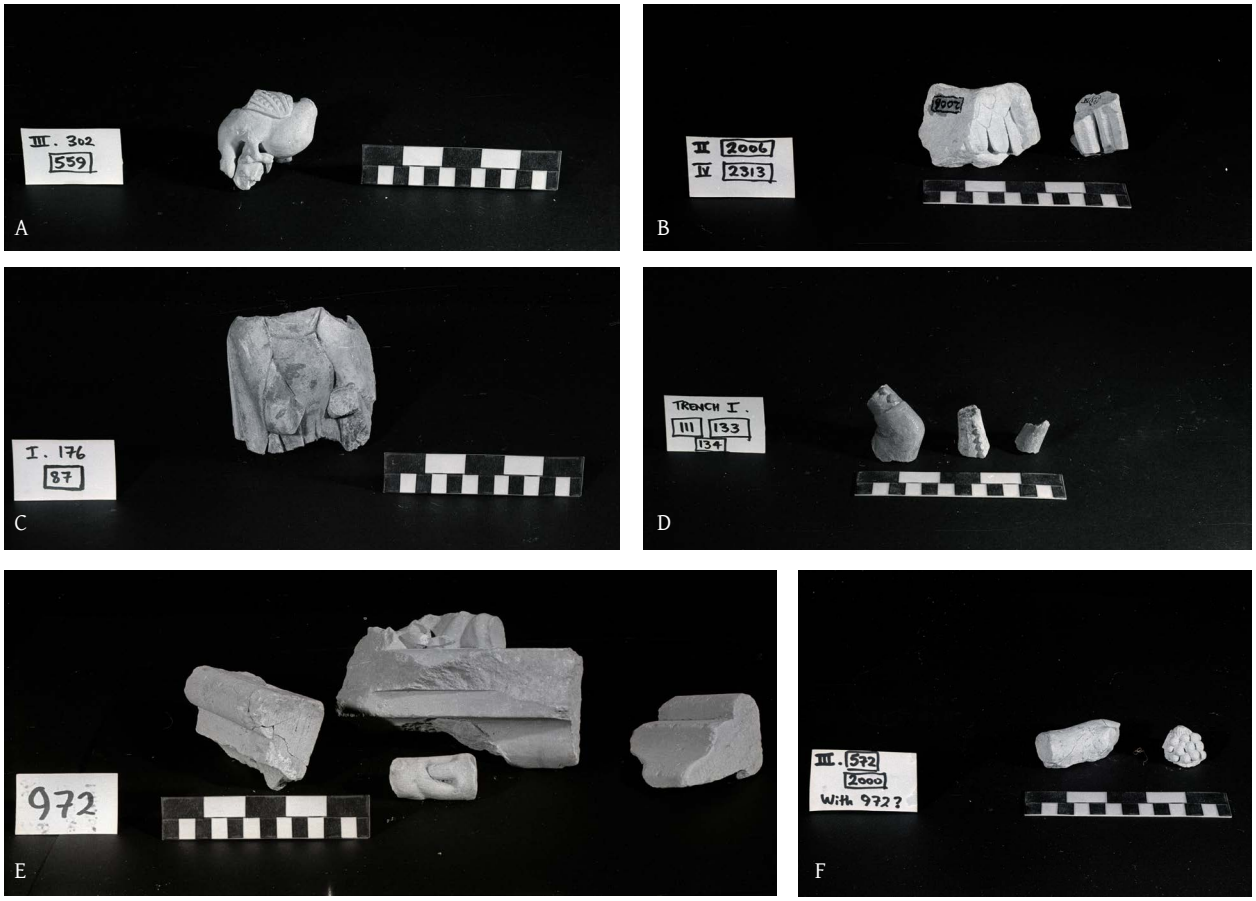


Illus. 3.6.53. Canterbury Cathedral, Lady Chapel, detail of south wall.

at the same point suggests that the connection to the main block of stone was handled with a 'V' profile, as at Oxford (Illus. 3.6.48, 1). Therefore these merlons also may have been part of a stringcourse running internally at the sill level of the windows. However, unlike the example at Oxford, the stringcourse would almost certainly have stood forward from the window plane, as there is no evidence that the mullions continued below the sill as panelling (cf. Illus. 3.6.52). Thus its effect would be more comparable, for instance, to that below the lateral windows in the Lady Chapel at Canterbury (Illus. 3.6.53).

Two other small assemblages of fragments should be mentioned briefly in this category, as parts of the junctions of roll mouldings which may involve a stringcourse; all are grouped as Type 957. First, *RF 3553* is a tiny piece from a 'T'-junction (Illus. 3.6.51C), the profile of which is the same as that of *RF 2494*, of which a number of examples without junctions were recovered from the excavation (Illus. 3.6.48, 3A–B). The diameter of the roll moulding is the same as that of the main tracery mullion (Illus. 3.6.37, 5B), but there seems to be no way of accommodating these particular pieces, with their asymmetrical profile, into the context of window tracery. Second, *RF 2435* is an 'L'-junction of two equal roll mouldings, set back from the surface plane of the stone (Illus. 3.6.48, 4A–B). The diameter of the roll moulding is not the same as any of those discussed, though a few other miscellaneous fragments seem to belong with it.[118] The precise location and purpose of these various stones within the chapter house remains unclear.

[118] For example, a find from Trench 1, Layer 93 (Type 973).



Illus. 3.6.54A–F. Chapter house, sculptural fragments.

Illus. 3.6.54A–F (see above): sculptural fragments: *Scale 5in./125 mm*

A: winged biped (*RF 559*).

B: angel's wing (left, *RF 2006*).

C: bust of a figure, headless (*RF 87*).

D: pieces of an arm with buttoned sleeve, 14th-cent. (*RF 111*, *RF 134*, *RF 133*).

E: foliage carvings and related pieces of moulding (*RF 2112*, centre top, and *RF 2050*, centre bottom).

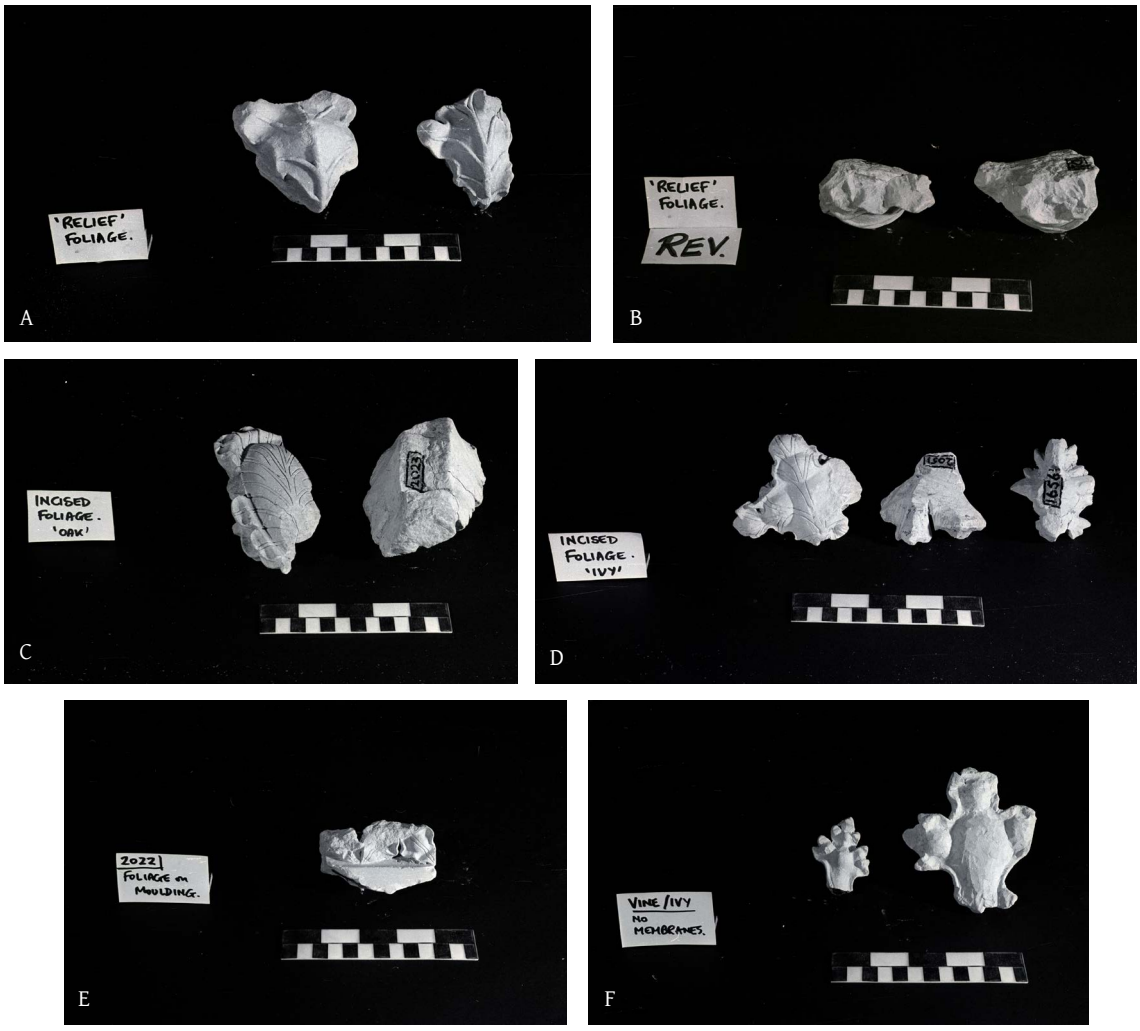
F: foliage carvings, a plant stem (*RF 572*) and a bunch of grapes (*RF 2000*).

4. Sculptural fragments

The carved pieces from the later Gothic period are disappointing in quantity and inevitably fragmentary, though compensated by exquisite quality in some cases. Amongst the figure carvings, the best is a biped with wings and a heavy tail, gripping the gaunt head of another monster or grotesque in enormous claws (Illus. 3.6.54A).[119] On a larger scale, there is part of an angel's wing, perhaps of one of the feathered angels of the higher orders (Illus. 3.6.54B); and the bust of a figure wearing some sort of gown and over-garment, apparently female but possibly an angel (Illus. 3.6.54C). The position of the broken stumps of the arms of the latter suggest an attitude of prayer. When complete, both these figures would have been almost 300 mm (about 12 in.) high. Of similar scale are three fragments which together form an arm with tight buttoned sleeve (Illus. 3.6.54D).[120]

The only clear indication as to date is provided by the arm, as the style of sleeve depicted was fashionable in the second half of the fourteenth century, but not in the fifteenth century. Consequently these three fragments may well emanate from work in the east walk of the cloister and at the entrance to the chapter house in the late fourteenth century.[121] It is not easy to be sure whether the other pieces of figure belong with them. The simple drapery of the bust seems more likely to be

[119] Or gripping its own head?
[120] Several other tiny pieces might depict either human limbs or plant stems, e.g. *RF 112–3*, *RF 2026*.
[121] All these pieces are from Trench 1 (1, Layers 111, 133, 134).



Illus. 3.6.55A–F. Chapter house, fragments of foliage carving. Scale 5 in./125 mm. A: leaves with pronounced veins (*RF 102* and *RF 108*, fronts). B: foliage carvings (*RF 108* and *RF 102*, backs). C: oak leaves with incised veins (*RF 2049*, front, and *RF 2023*, back). D: vine leaves with incised veins (*RF 2129*, front; *RF 2051* and *RF 1656*, backs). E: foliage carving on a moulding (*RF 2022*). F: vine leaves without veins (*RF 2097* and *RF 2127*, fronts).

fourteenth century than fifteenth,[122] but the fifteenth century cannot be ruled out entirely (Illus. 3.6.54C). The conventions of carving on the piece of wing, however, strongly suggest a fifteenth-century date, which would be corroborated if this fragment actually was part of a feathered angel, for such depictions became popular in sculpture only in the final century of Gothic.[123] Thus, it is likely that the figure carvings belong to two different periods, and that only one piece can be assigned with any degree of certainty to the fifteenth-century remodelling of the chapter house. Moreover, the piece of wing provides no clue as to its original location, and in reality, it could come from anywhere in the building, including the (assumed) lost bosses of the vault.

Amongst the fragments of carved foliage recovered, there are two conventions for depicting the veins on the leaves: carving them in relief or, more rudimentarily, using two incised lines (cf. Illus 3.6.55A, 4.8.55C–E). Another distinction is that the examples of the former have been broken off a larger block, as shown by the backs, which are uncarved (Illus. 3.6.55B). In contrast, the latter have been worked roughly on the reverse, indicating that they were mainly free-standing, though intended to be viewed from the front only (Illus. 3.6.55C–D).[124] It is feasible that the former might be

[122] Contrast the elaborate drapery folds in figures of comparable size carved in the east window of the Beauchamp Chapel, St Mary's, Warwick (*c.*1440–50); also note that the bust comes from Trench 1, like the three pieces of arm.

[123] Compare the carving of the wing with those of the angels in the Beauchamp Chapel, Warwick.

[124] There are also at least two pieces of vine type foliage, *RF 2097* and *RF 2129*, which fall into this category, but on which the depiction of the veins is omitted; probably because they were never properly finished (e.g., Illus. 3.6.55F).

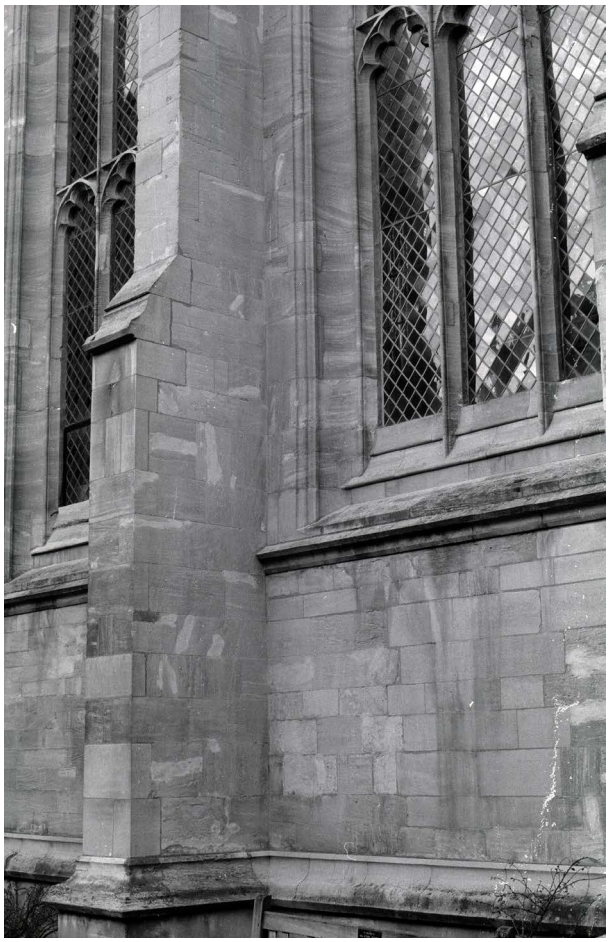
fragments from carved vault bosses, and as the same convention for representing foliage was employed on the cloister bosses (Illus. 3.6.3F), in the context of St Albans the pieces may well belong to the fourteenth century rather than the fifteenth: though the fragments are too small for a definite attribution to the cloister to be made on the basis of style alone.[125]

On the other hand, some of the incised pieces, such as the oak leaves (Illus. 3.6.55C), look convincingly fifteenth century, and presumably derive from the cresting decorating a parapet, stringcourse, or canopy over a statue, which is especially typical of fittings and miniature architecture in the Perpendicular period. They provide no further clues, however, to place them more precisely within the chapter house.

Another group of ten pieces reveals a more sophisticated quality of naturalistic sculpture, and also has the advantage for the purpose of interpretation that one of the carvings (*RF 3537*) is still attached to a length of moulding profile (Illus. 3.6.54E). A meticulously detailed stem or tendril of a plant is depicted, which may be a vine because the carving of a bunch of young grapes on *RF 2000* could also be part of the scheme (Illus. 3.6.54F). On the basis of size and quality, the sculpture of a drollery, described above, would also fit well here (Illus. 3.6.54A). Unfortunately, the moulding profile cannot be related directly to any of the main types which have been identified, but there can be little doubt that it is part of a decorative parapet or stringcourse. The position of the sculpture indicates the likely direction of the vertical axis, and the arrangement of the ogee moulding underneath is reminiscent of one of the fragments of capital (Illus. 3.6.49, 3). Taking scale into account, the provenance of these pieces would be from a fitting of some sort and they might have decorated a throne or sedilia at the east end of the chapter house, but this can be no more than speculation.

5. History and architectural style

To Abbot John we should attribute the re-articulation of the chapter house in five bays, as expressed by the new ashlar buttresses in the eastern part. Whether a new stone vault was intended at this stage cannot be proven, and his scheme may have envisaged a wooden ceiled interior comparable to the Canterbury chapter house or, to take a more contemporary example, the chancel of St Mary the Virgin, Oxford, 1459–65 (Illus. 3.6.45).[126] The size of buttress employed for St Mary's chancel is only slightly smaller at ground-level than that at St Albans (Illus. 3.6.56) so, allowing for the fact



Illus. 3.6.56. Oxford, St. Mary the Virgin, exterior detail, buttress and ground-course.

that the chapter house was a wider building, Abbot John's buttresses cannot be interpreted as indicating a definite plan to vault in stone.[127] Their primary purpose may have been to remedy the 'ruinous' condition of the older fabric. Indeed, the chancel of St Mary's may provide quite a reasonable comparison for the general architectural effect which Abbot John had in mind for the remodelled chapter house (Illus. 3.6.45).[128] The university church would have been well known to him, for his links with the city dated back to before his first term as abbot, when he had been prior of Gloucester College there.[129]

[125] In favour of the cloister attribution, both pieces were found in Trench 1 (Trench 1, Layers 102, 108). Also, the pieces are close in style to the foliate cresting of the extant 14th-cent. processional door into the church, at the north end of the former east walk of the cloister.

[126] For the dates of St Mary's, see Harvey 1984, 50, 'Chambyr, — '.

[127] The comparative dimensions of the buttresses at ground level (i.e. below any ground-course moulding) are as follows. St Albans: 1.18 m wide x 1.52 m deep, to buttress an interior span of 9.20 m. St Mary the Virgin, chancel: 0.94 m wide x 1.37 m deep, for an interior span of about 7.30 m. Divinity School: about 1.07 m x about 1.83 m, for a span of about 9.50 m.

[128] The parallel applies only to the overall design: there are no significant points of comparison between the mouldings of the two works.

[129] Cited in Roberts 1972b, 135–6. Also, in 1444, Abbot John's friend and ally, Humphrey, duke of Gloucester, donated his books to the university library, which at that time was housed in St Mary's church. See also Emden 1957–59.

If the work carried out by Abbot John was limited mainly to the exterior, it may have progressed only as far as preparing the new window apertures in the lateral walls. In which case, the only worked stones recovered from the excavation which could relate to this phase are those tentatively assigned to the window surrounds, and perhaps the pieces of window mullion as well.[130] It is disappointing, therefore, that these particular stones fail to provide evidence for a specific date. The window surrounds are characterized by a casement continued into a roll moulding, flanked by a broad fillet and an ogee (Illus. 3.6.46, 2), and a parallel for this design has been drawn with the Divinity School at Oxford (Illus. 3.6.46, 1). This is compatible with the other links with Oxford and particularly with the second campaign of work on the chapter house discussed below, but the comparison is no more than a general one.[131] It is worth noting, however, that Eileen Roberts' research into Perpendicular architecture in Hertfordshire has demonstrated the existence – even popularity, perhaps – of the roll, fillet, and ogee formation in the county.[132] Some examples have double ogee mouldings but others use just a single ogee,[133] which is closer to the fragmentary St Albans profile. Its presence in the chapter house may thus reflect no more than the involvement of local masons. The style and period of the moulding formation are perfectly compatible with the dates assigned to Abbot John's campaign (between 1452 and 1465): Broxbourne church was rebuilt *c*.1462–5, though none of the other relevant Hertfordshire examples lend themselves to closer dating than 'mid-fifteenth century'.[134]

As a tailpiece to this discussion, it should be noted that Roberts has convincingly traced the activity of the royal master mason, Robert Stowell, in the county from the 1460s onwards. She attributes the work at Broxbourne to him and regards him as the designer in 1481/2 of Abbot William's chantry chapel on the south side of the presbytery at St Albans.[135] The chantry includes the roll/fillet/single ogee formation as a variant of the double ogee version which he also used there and at Broxbourne.[136] However, the other mouldings of the chantry chapel differ from those of the two major extant works firmly ascribed to Abbot William, namely the high altar screen and the chapter house vault.[137] This suggests that the chantry may have been the only commission carried out by Stowell at St Albans during Abbot William's time.

The provenance of the design of the chapter house window mullions remains something of a mystery. The 'keyhole' shape of the termination of the main profile (Illus. 3.6.37, 4) is common enough in Perpendicular examples, but the way in which the smaller roll moulding of the lesser mullion profile is linked directly to the hollow moulding is unusual in this period (Illus. 3.6.37, 5 III). In Perpendicular mullions, it is generally the practice to insert a fillet between the roll and the hollow.[138] Given other connections with Oxford, it is just possible that the simplified mullion profiles used by Thomas Elkin at the Divinity School after 1439 might be relevant here, in the way in which the roll moulding is merged with the hollow (Illus. 3.6.4, 4), but they were created at Oxford as an economy measure.[139] Another instance closer to the chapter house mullion occurs in the bay window of the hall of Eton College (1443–9), where the lesser mullion for the batement lights is the same design as at St Albans, but with the difference that the cusping is formed from the hollow moulding only, as is the usual convention.[140]

The major feature of the second campaign in the time of Abbot William (1476–92) was the design and execution of the vault, and we are fortunate that various worked stones survive from it. In contrast with fragments from the windows just discussed, they provide considerable guidance with regard to attribution and dating. The profile of the vault rib is particularly distinctive in the flared shape of its termination (Illus. 3.6.4, 1): the axial roll moulding is flanked by fillets canted diagonally, not set square as is the norm in the Perpendicular period. Also, the angularity of the fillets and the elegance of the whole termination are emphasized by the angle of the hollow mouldings undercutting them (Illus. 3.6.4, 1).

This design seems to have been invented about 1330 in the tracery and responds of the early Perpendicular work in the abbey church of St. Peter, Gloucester (now the cathedral), and it was to become a feature of the Gloucester workshop and the north Cotswolds area until at least the mid-fifteenth century.[141] It comes

[130] As none of the recovered mullion fragments are part of a window surround, it cannot be certain that these mullions were designed at the same time as the surround, which is presumed to belong to before Abbot John's death in 1465.

[131] For example, there is no evidence that the double ogee of the Divinity School moulding was repeated in the fragmentary profile from St Albans; in fact, no double ogee mouldings were recovered in the excavation.

[132] See further Roberts 1973 and Roberts 1972a. The chapter house stones were not known to Dr Roberts at the time of her research.

[133] Examples of the single ogee include Chipping Barnet and the north-east chapel at Hitchin; Roberts 1973, 238 and 280. Examples of the double ogee at Broxbourne are illustrated in Roberts 1972a, Fig. 1.

[134] Roberts 1972a, 25–30.

[135] ibid., 32–4; see also Lindley 2001, 259–60.

[136] For the mouldings of the chantry, see Roberts 1972a, Fig. 2.

[137] Roberts 1972a, 33, noted that the screen and chantry are not related stylistically; see also Lindley 2001, 260.

[138] See Harvey 1978, Figs 13–29, for numerous examples.

[139] See Myres 1967, 152.

[140] An observation of the author in 1998, which I have not had an opportunity to follow up. For the dating of the hall, see Goodall 2002, 252–4.

[141] See further Morris 1979, 6–7, Fig. 12K and n.163. Another important 15th-cent. example is in the prestigious Trinity Chapel (*c*.1430–5) at Cirencester parish church, for the interior profile of the window mullions.

as no surprise, therefore, to find it employed by the Cotswold master mason, Richard Winchcombe, in the Divinity School at Oxford before 1439,[142] and it is this work which provides an exact design parallel for the St Albans profile (Illus. 3.6.4, 3). In it, the feature of the distinctive termination is combined with a subsidiary profile consisting of a smaller roll and hollow chamfer, precisely as found at St Albans. Just as significant is that Winchcombe employed this profile at the Divinity School not only for tracery mullions, which was its typical usage in the Gloucester workshop, but also he intended to repeat it for the ribs of the vault.[143] In fact, the changing circumstances of the work after 1439 meant that the vault as originally intended was never built.[144] However, Winchcombe's rib profile was revived eventually in 1480, when the present vaults were commenced,[145] utilizing it for all the main ribs (Illus. 3.6.19). This coincides almost exactly with the period of Abbot William's work on the chapter house.

Some confirmation for singling out the Divinity School as an architectural source is provided by parallels for other features in the chapter house. In particular, the compressed design of the tas-de-charge stone (Illus. 3.6.8D) has been shown to be the type employed in the Divinity School vault of 1480. In addition, close similarities have been observed between fragments of miniature crenellations from the chapter house and the decorative crenellated stringcourses in the Divinity School, as well as in the choir aisles of St George's Chapel, Windsor (1475–83), the latter by Henry Janyns from the famous dynasty of Oxfordshire masons.[146] Moreover, the polygonal pendants from the chapter house vault have their origins in experiments with pendant springers and bosses in the north Cotswolds/Oxfordshire area going back to the late fourteenth century,[147] leading ultimately to their first major appearance in monumental vaults at the Divinity School (1480–3, but perhaps designed by Richard Winchcombe before 1439; Illus. 3.6.7).

In the meantime, by the mid-fifteenth century, pendant vault bosses had begun to appear in royal works, such as in the vault over the ambulatory for King Henry V's chantry chapel in Westminster Abbey.[148] The main work on this chapel began in 1441, virtually certainly by John Thirsk, the master mason of Westminster Abbey, and almost contemporary with the monument to his brother, Humphrey, duke of Gloucester, erected at St Albans (*c.* 1443–7).[149] This structure, which has also been attributed to John Thirsk, is notable for the openwork pendant bosses in the side compartments of its vault, as well as bold pendants at the edge of the vault canopy (Illus 3.6.31, 3.6.40). Duke Humphrey's monument assumes a particular significance for the new chapter house because, as explained above, the combination of small fan-vault springers with a lierne vault based on lozenge shapes comes closest to the unusual vault design reconstructed from the excavated fragments (cf. Illus 3.6.6, 3.6.31).[150] The duke was a friend of Abbot John,[151] and it is tempting to place the design of the chapter house vault in the period of his second abbacy (1452–65). However, the duke was such a significant benefactor of the abbey and its patron saint, within whose feretory he chose to be buried and ostentatiously commemorated, that his monument could serve as an architectural inspiration to any subsequent abbot or architect, and it must be virtually certain that the chapter house vault was erected (and probably designed) in the time of Abbot William (1476–92). Indeed, the other miniature vault which comes closest to the ideas of the reconstructed chapter house vault is that of Bishop Waynflete (d.1486) in Winchester Cathedral (Illus. 3.6.32), a work influenced by Duke Humphrey's monument and executed about the time of the commencement of William's abbacy.[152]

To return to the specific form of the moulded octagonal pendants from the chapter house site, the relative rarity of their architectural use attached to corbels is potentially very helpful for the purposes of dating and

[142] Harvey 1984, 336–7, 'Winchcombe, Richard'.

[143] The evidence is that the wall-rib profile of the vault, which is the same design as his window mullions, is physically part of his window rere-arches and therefore would have been used in the original vault, had it been built.

[144] Myres 1967, 152, sqq.

[145] ibid., 154–5.

[146] Harvey 1984, 159–60, 'Janyns', various. Miniature crenellation is a characteristic of ornate architecture in the south of England in the later Perpendicular period.

[147] Early examples are the pendant vault springers in the Trinity Chapel at Tewkesbury Abbey (*c.*1380), and in the hall porch at New College Oxford (*c.*1385): their ultimate source is probably at Gloucester Cathedral, in the way the choir vault springers are suspended on bridges across the openings to the transept arms (1337–51). Examples of pendant bosses from the first half of the 15th cent. include those in the Warwick Chapel at Tewkesbury Abbey (1420s) and in the small chapel adjoining the Beauchamp Chapel at St Mary's, Warwick (*c.*1440–50).

[148] Illustrated in RCHME 1924, Pl. 143.

[149] Goodall and Monckton 2001, 238–47, for the dating of both chantries and their attribution to Thirsk. Note also Harvey 1984, 295–6, 'Thirsk, John'.

[150] In Duke Humphrey's monument, the panelled springers are not true fan vaults in the centre compartment of the vault because they lack circular bounding ribs, but these are present in the side compartments (Illus. 3.6.31).

[151] Duke Humphrey's association with the abbey and Abbot John is summarized in Goodall and Monckton 2001, 248; see also Fehrmann 2011, 90–3. With regard to the architectural links between the chapter house and the Divinity School, Oxford, in 1444 the duke had given his library of books to the University, to be housed in this building, to which Abbot John was also a donor.

[152] The Waynflete chapel was complete possibly by 1476, and certainly by his death in 1486; Lindley 1993, 804–5. For the link between the Duke Humphrey and Waynflete vaults, by way of Cardinal Beaufort's chapel at Winchester (after 1447), and for the Winchester vaults in general, see Goodall and Monckton 2001, 250, and Goodall 2005, 196–8.

attribution. The earliest significant example known to the author is in the four west bays of the choir of Eton College Chapel (1449–61, completed 1469–75),[153] where they hang from the base blocks of the vault responds, which are terminated at window sill level. Then they appear in Edward IV's great hall at Eltham Palace (1475–9), hanging below the large stone corbels supporting the roof trusses.[154] So the idea was in fashion in royal works at the start of William's abbacy, but neither of these examples is as close as those in Tattershall church (Illus. 3.6.28) to the form reconstructed for the chapter house pendant, which projects in front of the corbel rather than hanging below it. Quite probably the inspiration for the Tattershall corbels derives from Eton, because the two works are connected both by the same mason, John Cowper (about whom more below) and the same cleric, Bishop Waynflete. Waynflete, who was the first provost of Eton College and executor for Ralph, Lord Cromwell, founder of Tattershall College, drove forward the works at both places.[155]

The information about architectural sources and parallels allows us to speculate about the identity of the master mason in charge of the second campaign (and who probably designed the chapter house vault) in the time of Abbot William (1476–92). On the one hand, strong links have been demonstrated with the Divinity School, Oxford, and therefore it seems reasonable to assume that the St Albans master was conversant with its details.[156] In particular, the moulding profile of the vault rib is unusual and the Divinity School provides the closest known parallel (Illus. 3.6.4, 1 and 3). The original master of the Divinity School, Richard Winchcombe, is assumed to have died around 1440, and the best known of his younger associates, John Beckeley from Headington, may also have died by about 1455.[157] Robert Janyns senior, from the well-known family of Oxfordshire masons of that name, would have known Winchcombe's style from the survey which he undertook of the Divinity School in 1452–3; but he disappears from the records in 1464.[158] So the most feasible candidate amongst the Oxford masons of the right period is Master William Orchard (fl. 1468–1504), who was almost certainly responsible for the actual execution of the Divinity School vault in 1480–3.[159]

William Orchard's career also directs our attention to the important workshop at Eton College, which seems to have influenced the design of chapter house vault pendants, and possibly its window mullions as well. Orchard is particularly associated with Bishop Waynflete, for whom he built Magdalen College, Oxford (from 1468) and directed Waynflete's continuing works at Eton (from 1479). Moreover, Waynflete's shield appears six times on the bosses of Orchard's vault in the Divinity School,[160] as he provided the University with scaffolding and masons from the building operations at Magdalen College. Thus Orchard's career neatly encompasses three significant works which we have associated with the chapter house – the Divinity School, Eton College Chapel, and Waynflete's chantry chapel. One other important master mason of the day, John Cowper, should be considered here, because his career indicates that he would have been familiar with Eton and Waynflete's works more generally. He is first recorded working in a junior capacity at Eton College (1453–60), and it appears that Bishop Waynflete had taken him into his service, for it was almost certainly through the latter's patronage that he became the master in charge of works at Tattershall collegiate church (in or by 1475).[161] As we have seen, the roof corbels there provide the closest parallels for the reconstructed pendants of the chapter house (Illus. 3.6.28), a small but potentially telling detail. However, Cowper has no known direct connections with architecture in Oxford.

So, William Orchard or John Cowper, or even the master with documented local work, Robert Stowell? It is impossible to identify with any conviction the architect of the main works on the chapter house unless new evidence becomes available. None of these three masters resided locally. Stowell seems to have found time to find work in private practice, outside his longstanding appointment as master mason of Westminster Abbey (1471–1505),[162] so he might have been available for the chapter house commission. However, though Eileen Roberts has attributed Abbot William Wallingford's chantry chapel to him, she could find nothing else in his style at St Albans.[163] Nor do any of the moulding profiles from the chapter house stones show any convincing links with his works. Cowper and Orchard have better credentials to be linked with the architectural style of the new chapter house, as explained above, but both appear to have been very occupied elsewhere during the first half of William's abbacy. In addition to his involvement at

[153] Colvin 1963, 288–92, for the dates.
[154] See Goodall 2011, 381.
[155] Marks 1979, 135.
[156] Connections between masons working at Oxford and St Albans seem to be a regular occurrence in the later Gothic period. In the early 14th cent., close similarities of style can be traced between Merton College, Dorchester Abbey and the St Albans Lady Chapel. Slightly later Master Henry Wy appears to have been in charge of work in the Latin Chapel at St Frideswide's, Oxford, having previously been engaged on rebuilding part of the nave at St Albans Abbey; Morris 1988, 182. In the earlier 15th cent., Eileen Roberts' research has demonstrated links between Oxford, Henley-on-Thames, St Albans and churches in west Hertfordshire, through the career of Master Thomas Wolvey; Roberts 1972b.
[157] Harvey 1984, 16, 'Beckeley, John'; 336–7, 'Winchcombe, Richard'.
[158] ibid., 159–60, 'Janyns, Robert, senior'; Myres 1967, 153.
[159] Harvey 1984, 221; 'Orchard, William'; Myres 1967, 154–5.
[160] Hope 1914, 235.
[161] Harvey 1984, 73, 'Cowper, John'; Marks 1979, 136.
[162] Roberts 1972a, 24–9.
[163] ibid., 32–3.

Tattershall (1475–83), Cowper was also, concurrently, master mason at Kirby Muxloe Castle (Leics., 1481–3) for Lord Hastings.[164] In the same period, Orchard was occupied with the building of Magdalen College, Oxford (1474–80), founded by Bishop Waynflete, and then was apparently the master responsible for the Divinity School vault (1480–3).[165]

Nothing further is known about Cowper after 1484, though John Harvey conjectured that he might still have been alive in the early sixteenth century.[166] Orchard is assumed to have continued directing various works at Magdalen in the 1480s and 90s, but otherwise almost all his other works up to his death in 1504 are based on stylistic attribution only.[167] So both masters seem to have been potentially more available in the later years of William's abbacy, but would he have waited for almost ten years to resume work on the chapter house? What we know about the vault from its mouldings and what we can attempt to reconstruct from its worked stones suggests possibly a rather experimental vault with some unusual features. Is it likely that such a vault would post-date the very accomplished vault of the Divinity School? There is also the matter of the apparently considerable damage to the rib stones, which might be caused by accidental damage in carving or transport, but which might also indicate problems encountered when constructing the vault – possibly because of an ambitious design which pushed the local chalk-stone to the limits. There is no evidence that Cowper had any experience of designing and building a monumental vault of this complexity: would this be an explanation of its unusual features? In contrast, Orchard shows great competence in the execution of the Divinity School vault, but he worked almost invariably in Oxford Headington limestone.[168] As he is the better qualified candidate for the chapter house work, would his unfamiliarity with Totternhoe chalk-stone be the explanation instead? These are imponderable issues, and the quest for attribution cannot be taken any further in this paper.

Our knowledge of chapter houses of the late medieval period is very limited, and therefore one of the major and perhaps least anticipated bonuses of the 1978 excavations was the revelation of the architectural work of Abbot John and especially of Abbot William. Enough has been recovered to paint a fair picture of the relative ostentation of Abbot William's chapter house, in the context of a monastic building type which is often regarded as rather plain and uninteresting. In particular, the existence of the stone lierne vault with fan-vaulted springers is a discovery which transcends the context of chapter houses and provides a new example of a major vault in a period when survivals of such large-scale vaults are by no means common in any category of building except the most prestigious. Clearly the intention was to create a chapter house fit for the monks of 'England's premier abbey'. An impression of the interior may be imagined by combining something of the linear elegance of the Oxford Divinity School with the proportions of the chancel of St Mary the Virgin, Oxford (Illus 3.6.7, 3.6.45). Crowning the whole would be a vault apparently inspired by the miniature vault of Duke Humphrey's monument (Illus. 3.6.31) but rendered on the monumental scale of those of great churches like Sherborne Abbey and the later St George's Chapel, Windsor (Illus. 3.6.6). If the parallels drawn with the vaults of Duke Humphrey's monument and the Oxford Divinity School are correct, then it is even conceivable that the chapter house had pendant bosses at the crown of the vault, for which all physical evidence has been lost. Certainly its newly discovered vault, possibly to a design by Master William Orchard, can lay claim, together with the near contemporary vault of the Divinity School, to be important steps towards the ultimate creations of the late Gothic mason's craft: the vaults of the choir of St George's Chapel, Windsor, and of Henry VII's Chapel, Westminster.

[164] Harvey 1984, 73–4, 'Cowper, John'.
[165] ibid., 220–1, 'Orchard, William'.
[166] ibid., 74, 'Cowper, John'.
[167] ibid., 222, 'Orchard, William'.
[168] He leased a quarry at Headington and was a major supplier of building stone; ibid., 221–2.

St Albans: fifteenth-century chapter house stones, concordance of type numbers with Cathedral Inventory numbers

All the worked stones retained from the chapter house excavation are in the lapidary store in the nave south triforium. They were recorded in the Cathedral Inventory in 2001. '17' is the section of the Inventory dedicated to 'Architectural and Archaeological Fragments'.

Inventory No.	Type No.	Brief description	RF
17/400	T951	Vault, standard rib	-
17/401	T951	Unusual pieces of vault rib	-
17/402	T951	Vault ribs with dressed ends	-
17/403	T951	Vault intersections, crow-foot	2475, 2476
17/404	T951	Vault intersections, saltire cross	2432
17/405	T951	Vault intersections, T-junction	-
17/406	T951	Vault, other intersections	-
17/407	T951	Vault, wall-rib	3640
17/408	T951	Related to wall-rib	2362
17/409	T951	Transverse arch	3512
17/410	T952	Vault, bounding rib, panelling attached	2366,
17/411	T952	Vault, bounding rib	-
17/412	T952	Vault, bounding rib, variant	2421
17/413	T952	Vault, panelling only	-
17/414	T952	Vault, bounding rib, other	2433
17/415	T953	Vault cell	3066
17/416	T951	Vault cusping	2516, 2443
17/417	T951	Vault springer	2479
17/418	T960-962	Pendant corbels	-
17/419	T967+968,955	Mullions, intermediate and minor	-
17/420	T956	Major mullions	-
17/421	T967	Mullions, cusping	-
17/422	T968	Other cusping	2509
17/423	T968	Tracery junctions	2500
17/424	T968	Tracery, Y junctions	3523
17/425	T967	Tracery, triple junctions	2478
17/426	T984-986	Misc. ogee mouldings	-
17/427	T954	Wall mouldings, incl. window frame	2010
17/428	T914	Related ogee and fillet moulding	-
17/429	T969	Blind panelling	2490, 3531
17/430	T966	Abbatial throne?	-
17/431	T971	Crenellated stringcourse	2488
17/432	T971	Crenellated stringcourse, variant	-
17/433	T957	Stringcourse?	2494, 3553
17/434–5	T972	Parapet or stringcourse?	2112, 3537

Inventory No.	Type No.	Brief description	RF
17/436	T973	Related moulding	-
17/437	T963	Capitals (or corbels)	-
17/438	T981	Capitals (or corbels)	-
17/439	T964	Capitals (or corbels)	-
17/440	T980	Capitals (or corbels)	-
17/441	T980	Capitals (or corbels)	-
17/442	T980	Capitals (or corbels)	-
17/443	T978	Capitals (or corbels), with polygonal plan	-
17/444	T982	Base	-
17/445	T993	Window jamb	-
17/446–7	T992	Mullions	2040, 2363
17/448–9	T992	Minor mullion	2064
17/450–1	T990	Major mullion	2413, 3554
17/452	T991	Minor tracery piece	1365
17/453–4	-	Foliage carving fragments	-
17/455–9	-	Figurative carved fragments	-
17/460	T994–995	Misc tracery pieces	-

PART 3

7. THE WINDOW GLASS AND LEADING OF THE FIFTEENTH-CENTURY CHAPTER HOUSE

by HEATHER GILDERDALE SCOTT
with contributions by SALLY BADHAM

DISCUSSION

Introduction

Over the last few decades, the reputation of the church and religious culture in pre-Reformation England has been much rehabilitated.[1] Although historians have focused largely on the enduring validity of traditional religion within lay society, studies of some of the greater abbeys and priories challenge the traditional view of wholesale institutional decline among the older monastic orders and congregations in the late Middle Ages, emphasizing that many such monasteries appear to have been well-managed by abbots and priors of ability and standing, as well as maintaining healthy sized communities to the end.[2] Yet only in more recent years have arguments been made for the spiritual and intellectual vitality, creativity and sophistication within England's monasteries during this period.

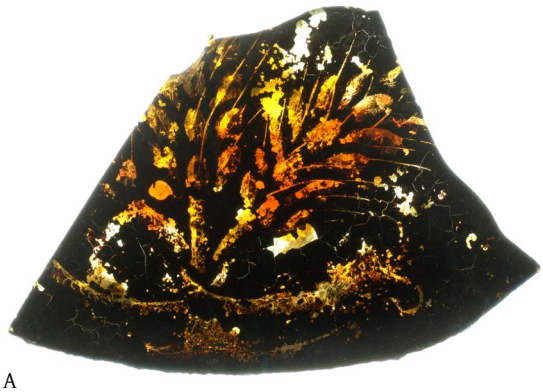
Work on the patronage of late medieval Benedictine art and architecture has highlighted the resourceful ability of this congregation, in general, to rise to the challenge of competing institutions and ideological assault, successfully maintaining (until 1536–40) their dignity and prosperity.[3] It is the abbey of St Albans, however, that has formed the focus of the single most through study to date of intellectual life at one of the great Benedictine monasteries of late medieval England. [4] The picture it paints is of an abbey which maintained the support of numerous powerful patrons, including, and especially, the crown; wielded formidable wealth and territorial and political influence; and 'enjoyed an almost unparalleled reputation for learning' and intellectual vigour.[5] This is the context for the collection of stained glass fragments excavated from the site of the St Albans chapter house.

There are, certainly, serious limitations to the contribution the stained glass remains can now make to an understanding of the chapter house's original glazing. The quantity of material excavated represents only a small proportion of the glass that originally filled the impressively-proportioned chapter house's windows.[6] The vast majority of the surviving fragments are extremely small, and none but a number of tiny medallions still in lead came (fragments 563/11, /15, /16, /25; 564/1, /2, /3, /4, /16; 294/1; 711/1–2) may be called a complete fragment, as cut and shaped by the medieval glazier.[7] These medallions are also the only pieces still associated with lead came. Few of the pieces obviously relate directly to other fragments found in their immediate vicinity, suggesting that they were broken before deposit in the ground. These characteristics of the glass collection may be attributable to the nature of the destruction of the chapter house after the Dissolution of the abbey in 1539. On the whole, the impression is of the stained glass panels being stripped from their windows and dismantled prior to the chapter house's demolition. The valuable lead came was probably the principle target, but the glass itself, where not abandoned *in situ*, was perhaps a useful source of salvage, either to be reused as cullet in subsequent glass-making or as painted glass in another decorative context. Compounding these factors, most of the glass has now become opaque and devitrified, obscuring both painted detail and, perhaps, the original palette of colours used in the scheme. White glass now dominates heavily, alongside small quantities of green and flashed ruby, two tones of blue, and a few pieces of identifiably murrey glass. Interpretation of

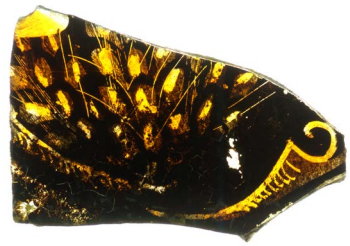
[1] Duffy 1992 is perhaps best known. A number of more regional studies have followed Duffy, including Brown 1995 and Kümin 1996.
[2] Pioneering in this field were Dobson 1973, and Harvey 1977. Further works by the same authors, and studies by other historians such as J. H. Tillotson on Yorkshire monasteries, have followed.
[3] Luxford 2005.
[4] Clark 2004.
[5] ibid., 6–7.
[6] The chapter house itself measured internally almost 28 m long and 9 m wide. Richard Morris, p. 223, has estimated that the available glazing space within each of the five lateral bays probably measured just over 3 m in width and 9.25 m in height, with the east window aperture about 10.20 m high and just under 7 m wide.
[7] The observations in this paragraph about the nature of chapter house glass collection are indebted to those made by Sarah Brown in unpublished notes of the mid-1990s.

the glass remains is also potentially complicated by the discovery of a lead-melting furnace (F. 250) in the centre of the chapter house floor, raising the possibility that glass from other parts of the dismantled claustral complex was introduced to the chapter house.

However, the picture is by no means entirely bleak. In terms of the relationship of the excavated glass collection to the chapter house, only one extant fragment (Find 229/1), bearing a partial inscription in a Lombardic script datable to before *c.*1350, can be attributed with relative certainty to a period other than that of the late fifteenth-century rebuilding of the chapter house.[8] Furthermore, a number of the finds were located in such close proximity to the remains of the window bays that it is possible they relate directly to the windows below which they were discovered, and provide information on the glazing of these windows at the abbey's dissolution.[9] Although inevitably broadly generalized or speculative in some respects, a number of observations can be made about the original glazing of the chapter house, particularly in relation to its patronage; the painting and glazing style of the glass; and the iconographic scheme; and these are addressed, in turn, below.



A



B

Illus. 3.7.1A–B. Fragments of window glass excavated from the site of the chapter house at St Albans, decorated with ears of wheat, bound together with ribbons. 715/1 (1:1) and 248/6 (1:1).

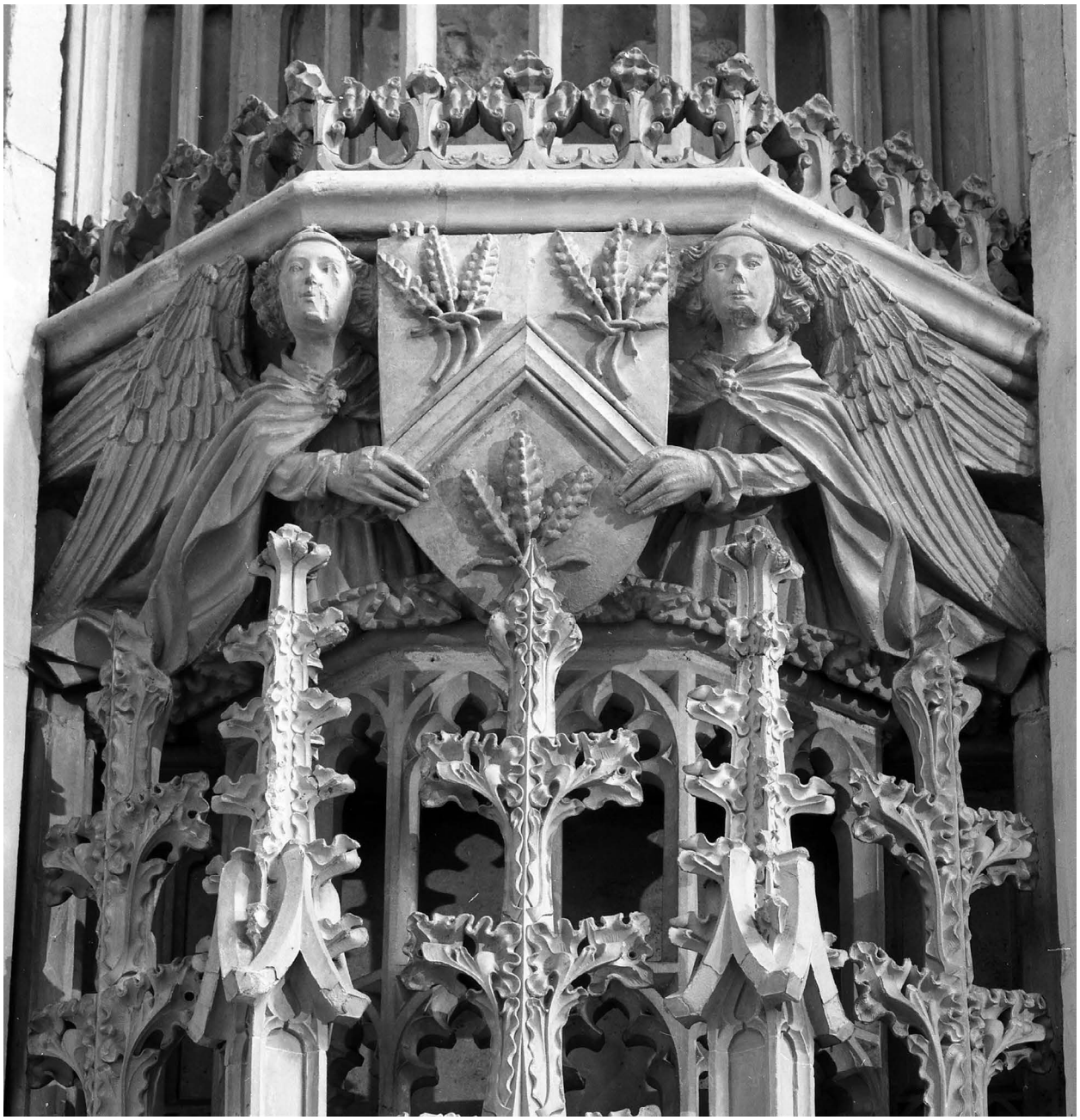
Patronage

Abbot Whethamstede or Abbot Wallingford?

Among the best-preserved fragments excavated from the chapter house are two pieces (715/1, 248/6) of comparable scale and style, depicting partial ears of wheat, bound together with curling ribbons, stained a rich orange-yellow, with their details finely picked out in stick highlights (Illus. 3.7.1). At first glance, these might be taken as support for the attribution of the chapter house glazing to John Whethamstede, abbot of St Albans between 1420 and 40, and again between 1452–65; particularly as he is associated with both the fifteenth-century reconstruction of the chapter house, and with significant stained glass patronage at the abbey. His register records that during his second abbacy he began renovations, spending more than £100 on the work, and leaving it in a manner 'that it might be easy enough for his successor, if he wished, to complete the work'.[10] Whethamstede undertook a major glazing project (now lost) in the abbey cloisters, filling the 32 windows with an extended sequence of typological scenes and explanatory verses, and he also glazed the New Library, with imagery related to the press of books nearest that window.[11] Within the abbey church itself, he installed a window in the north choir aisle showing 'figures of certain heathen philosophers who had testified to the Incarnation of Our Lord', and another, of uncertain location, depicting the four Doctors of the Church.[12]

Ultimately, however, the chapter house glazing should almost certainly be attributed not to Whethamstede, but to the patronage of the later Abbot William Wallingford (1476–92). Although there is no extant record of his glass patronage at St Albans, he is credited with many worthy and sumptuous new works at the abbey, including the putting up of a great altar screen, completed by 1484 at a cost of 1,100 marks. [13] Above this screen's north door on its eastern and western faces, the south door on its eastern face, and the doors leading from the choir aisle into the shrine area, angels support shields, each bearing a chevron surrounded by wheat ears bound with ribbons in a manner highly comparable to that in the stained glass fragments (Illus. 3.7.2). The same shields, together with a frieze of wheat ears decorating the cornice, appear on the chantry chapel to the south of the high altar. Although there was previously a tradition of associating this chapel with Whethamstede, on account of the wheat ear motif, this too is now attributed to Abbot Wallingford.

[8] See discussion by R. Morris, pp. 51–2 for the dating of the chapter house rebuild.
[9] Details of the location, and nature, of each find are given in the catalogue of glass remains.
[10] *RA.*, Appendix D, 472.
[11] For details of these schemes see Skeat 1977, chapter 6, in which are reprinted articles by M. R. James.
[12] ibid., 3–5, summarizes Whethamstede's glass patronage.
[13] *RA.*, Appendix D, 476–9. The 'ornatissimam et sumptuosissimam' altar screen is noted on p. 477.



Illus. 3.7.2. Detail of angels holding a shield bearing the arms of Abbot William Wallingford, from the Wallingford screen, St Albans Abbey. Photo: © Dr John Crook.

Wallingford is known to have founded a chantry in this position, 'with railings and a marble slab', at a cost of £100,[14] whilst the chapel itself has been attributed on stylistic grounds to the master mason Robert Stowell, and dated to 1481–2, post-dating Whethamstede's abbacies of 1420–40 and 1452–65.[15] There is, by contrast, no evidence that Whethamstede adopted the wheat ear motif in his life time.[16] Instead, the symbols of St John the Baptist and St John the Evangelist were habitually used as his particular badges 'and set as his mark on all work done by him':[17] suggesting it was his saintly Christian name, rather than distinctive surname, he wished to emphasize. In stained glass, drawings of fifteenth-century remains at the abbey by James Neale, dated 1875, include both the lamb of St John the Baptist and the eagle of St John the Evangelist; the former, though faded, survives in the east wall of the north transept.[18]

[14] ibid., 478.
[15] Roberts 1993, 144–5; Roberts 1972a.
[16] The earliest attribution of the motif to him dates to the latter part of the seventeenth century; *VCH Herts 2*: pp. 495–6.
[17] ibid., 488.
[18] Illustrated in Skeat 1977, Pls. 2 and 3.

The rest of the glass collection from the abbey chapter house underscores the association with Wallingford suggested by the wheat ear fragments. The Anglo-Flemish painting style of the majority of the fragments indicates a date no earlier than the 1480s.[19] Surviving inscribed fragments have also led to the conclusion that 'the chapter house glazing was...from the period *c.*1480–90'.[20] More generally, architectural remains from the chapter house, in conjunction with documentary evidence for its reconstruction, suggest that Whethamstede's work was not extensive. Costing in the region of one hundred pounds, it involved a partial refurbishment of the exterior, probably limited to the eastern bays, leaving the interior and existing roof intact, so that the chapter house was fully useable at the abbot's death.[21] Abbot Wallingford, in contrast, is recorded as having spent no less than one thousand pounds on the completion of the chapter house:

> '*ad id perficiendum mille librarum summam persolvit*': the cost of the rebuilding and glazing scheme[22]

Contemporary accounts of expenditure for building and glazing schemes are both relatively small in number and also wide ranging in the figures they record, but it is possible that with the recorded sum of £1,000 Wallingford was able both to complete the remodelling of the chapter house, including the installation of a stone vault and also the provision of the stained glass to fill its windows. Although, for example, the exceptional vaults alone at the Oxford Divinity School (1479) and St George's chapel, Windsor (1506) cost more than £650 and £800 respectively, elsewhere three or four hundred pounds seems to have covered much or even all of the costs associated with even sizeable or relatively elaborate rebuilding programmes, including stained glass.[23] In terms of glazing costs,[24] the surviving accounts closest in date to the St Albans chapter house, for the windows of the Collegiate Church of the Holy Trinity at Tattershall in 1482, are also some of the most detailed: the windows containing figures under canopies cost 10*d.* per foot, whilst windows containing narrative scenes cost 1*s.* 4*d.* per square foot.[25] The figure for narrative windows seems to have been fairly standard over the second half of the fifteenth century. The royal glazier, John Prudde, received the same sum in 1445–6, for work on the west window at Eton College,[26] and the same rate still applied to narrative windows at King's College, Cambridge in 1526.[27]

The rates for figures under canopies differ considerably (no doubt reflecting the scope for greater or lesser degrees of elaboration and quantities of coloured glass employed), but a figure of around 2*s.* per square foot may have been typical for high-quality work. In 1447 this was the price paid to Prudde for the sumptuous glazing of the Beauchamp Chapel.[28] The saints housed under canopies in the ante chapel of All Souls College, Oxford, also possibly by Prudde, cost 1s. per square foot in 1441.[29] The lower price perhaps reflects the smaller quantities of coloured glass utilized and the more sparing use of technically-challenging drilled 'jewels'. At the other end of the spectrum, in the first years of the fifteenth century William Burgh received 3*s.* 4*d.* per foot for a window at Eltham Palace containing figures of saints, the Annunciation, and the Trinity, but this was exceptional, and in the context of the most expensive fifteenth-century glazing scheme on record.[30]

Although there can be no clear picture of the exact contents of the St Albans chapter house windows, they seem certainly to have included narrative sequences (1*s.* 4*d.* per square foot), probably in conjunction with figures under canopies (perhaps between 10*d.* and 2*s.* per square foot in the second half of the fifteenth century).[31] The survival of what are probably wheat ears from shields of arms or badges introduces the probability of an heraldic content to the windows too; and early sixteenth-century accounts show that high prices could be charged for shields. Heraldic roundels for Eltham and the Tower of London cost 1*s.* each in 1500–2, and by the early 1530s Galyon Hone was charging 4*s.* each for shields for the hall at Hampton Court.[32] Given the probable mix of glazing types in the St Albans chapter house, an average cost of around 2*s.* per square foot may be reasonable. With two large terminal windows probably each around 62.71 m^2 (675 square feet) in size, separated by six lateral windows each with a glazed area of some 27.87 m^2 (300 square feet),[33] Wallingford could have spent around £315 on the glazing scheme.

[19] See 'Glaziers and Painting Style', below, pp. 243–52.
[20] S. Badham, 'Inscriptions on the window glass from the fifteenth-century chapter house', below, p. 261.
[21] R. Morris on the architecture of the chapter house, pp. 181–3.
[22] *RA.*, Appendix D, 477.
[23] These examples of architectural costs are from R. Morris on architecture.
[24] The following paragraphs on costs of medieval glazing, and their potential relation to St Albans, are heavily indebted to unpublished notes made by Sarah Brown in the mid-1990s.
[25] Marks 1984.
[26] Knowles 1936.
[27] Wayment 1972.
[28] Knowles 1936.
[29] Hutchinson 1949, 17.
[30] Marks 1993, 49; pp. 48–51 summarizes much of the available evidence for stained glass pricing in medieval England.
[31] See 'The Glazing Scheme and its Iconography', below, pp. 252–3.
[32] Marks 1993, 49.
[33] R. Morris, pp. 89–90 estimates the chapter house window dimensions as about 3.05 m (10 ft) wide x 9.14 m (30 ft) high for each of the lateral windows, with each terminal window, of the same height, comprising nine lights of 0.76 m (2 ft 6 in.).



Illus. 3.7.3A–B. (A) Queen Elizabeth and two of her daughters, including Princess Cecily, from Little Malvern Priory 1480–82. Author photo. (B) Princess Cecily from the Royal window, Canterbury Cathedral, 1482–87. Now in the Burrel Collection. Photo: Johnbod CC BY-SA 4.0 via Wikipedia Commons.

Glaziers and painting style

An Age of Transition

The period of William Wallingford's abbacy at St Albans (1476–92) saw in England a turning point in the nature of the stained glass craft, and in the identities of its glaziers. From the middle of the fifteenth century, high-status English patrons increasingly looked not to English artists to fulfil their artistic commissions, but to Flanders, whose painters were rapidly establishing themselves as innovative leaders in their field; and glaziers were by no means exempt from the trend.[34] By 1474, the London Glaziers Company had made its first complaint about alien craftsmen exercising their craft in the city to the detriment of English glaziers, and their fears seem not to have been unfounded.[35]

Soon afterwards there is the first clear evidence of foreign participation in an English glazing scheme, and it was at the highest level. In the north-west transept façade window at Canterbury Cathedral, dating to between *c.*1482 and 1487, images of the royal family of Edward IV, Elizabeth Woodville, his queen, with their numerous sons and daughters ranked behind them, bear the hallmarks of the hand of a Netherlandish artist. It has been commented that 'it is sufficient to compare the figures of Queen Elizabeth, her son Prince Edward (later Edward V) and four of her daughters at Little Malvern [executed by the leading English workshop of the period] with those of the same royal family in the 'Royal' window in Canterbury...to appreciate the gulf that already existed in the 1480s between native work and that of the immigrant foreign craftsmen (Illus. 3.7.3). This gulf very quickly became apparent to leading patrons and the Continental glass painters were able to establish a near-monopoly of the most prestigious and lucrative commissions'[36] England had to offer.

Evidence of English and Netherlandish-style glazing at St Albans

Although fragmentary and partial, the evidence suggests that the chapter house glazing at St Albans reflected this waning of English craftsmen and the growing dominance of Netherlandish glass painters. At the very least, whilst there are signs of technical accomplishment and sophistication across the remaining fragments (there are, for example, many instances of the scratching out of paint with a stick or needle to create highlights and other delicate effects,

[34] Marks 1993, 205–9 summarizes the evidence for this emergence of the 'dominance of the foreign glaziers'.

[35] The tensions between English glaziers and their immigrant colleagues in late fifteenth-century London are colourfully evoked in Hicks 2007, ch. 8.

[36] Marks 1993, 204.

and multiple traces of tiny details having been leaded separately into the glazing), the glass collection bears the traces of two differing styles of, or approaches, to glass painting.

On the one hand, there are traces of a number of features characteristic of English glass painting in the final decades of the fifteenth century, some of which are particularly associated with one well-documented workshop. A partial quarry (563/12) appears to be painted with a stylized floral motif, of elongated cruciform-type, found across England (Illus. 3.7.4).[37] Similarly, two architectural fragments (229/12 a and b) are painted in an almost entirely linear manner, with simplified semi-circular crockets, common to fictive niches and micro-architecture in English glass of the period (Illus. 3.7.5).[38] The fragment of cresting attached to a probable partial turret or tower (229/7) is perhaps related, since it shares equally simplified forms, although here the painting is elaborated slightly with the use of a soft wash of paint from which circular highlights have been rubbed out. The remains of a number of examples of a decorative motif (229/6 a–l) based, ultimately, on a sprawling acanthus leaf elaborated with a floral design, also has parallels in later fifteenth-century glass in England (Illus. 3.7.6).

A number of small medallions, both circular (fragments 563/11, /15, /16, /25; 564/1, /2, /3, /4, /16; 294/1) and lemon-shaped (fragments 711/1–2), some still encased in lead came, suggest that the technique of incorporating details into stained glass by leading separate, small pieces of glass into holes drilled in larger pieces was a feature of the glaziers' repertoire. Demanding great skill, there are some examples of the technique in English glass of the early fifteenth century,[39] but the most lavish use of the technique was by the King's Glazier, John Prudde, in the windows of the Beauchamp Chapel, glazed 1447–64.[40] Thereafter, it quickly became a characteristic of much high-quality stained glass in England. It was used by each of the





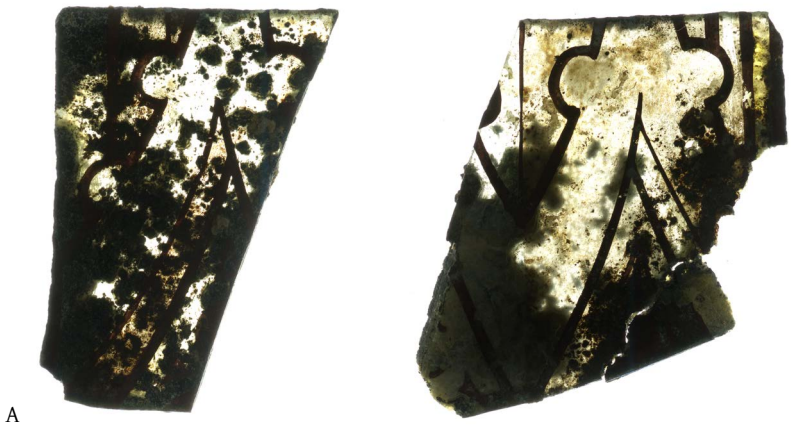
Illus. 3.7.4A–B. (A) Partial quarry painted with stylized floral motif, site of the chapter house at St Albans. 563/12. (B) Quarries probably of similar design, York Minster, 1430s. Photo: Nick Teed, the York Glaziers' Trust.

[37] Although there is no full-length study of these quarry forms to date, the county surveys published by the Corpus Vitrearum Medii Aevi each contain a concordance of quarry typologies. Examples probably close to the St Albans chapter house type include numbers 58, 60 and 61 in Hebgin-Barnes 1996, pp. xxiv–xxv.

[38] Other fragments painted in a linear style include a probable partial nimb (563/22) and a possible further nimb or partial vesica (563/18) both associated with the chapter house east window.

[39] Examples of the technique can be found in the collegiate church at Tong, in Shropshire, probably glazed by 1410, and in the great east window of Great Malvern Priory (Worcs.), probably completed in the 1430s. Both glazing commissions are associated with the leading medieval glazier, John Thornton of Coventry.

[40] Marks 1993, 39. The form of the sun or star burst motif on the St Albans roundels parallels exactly that found in the remains of the glazing from the old cathedral of St Michael, Coventry, destroyed in 1940. The varied, but evidently accomplished, glazing was removed to safety at the outbreak of the war, and is now stored in the basement of the new cathedral. The collection has been catalogued and analysed, but remains unpublished, by the author, for the World Monuments Fund.



A



B

Illus. 3.7.5A–B. (A) Fragments of micro-architectural elements St Albans chapter house site 229/12 a, b. (B) Detail of micro-architectural canopy, Great Malvern Priory, 1480s. Photo by author.



A



B

Illus. 3.7.6A–B. (A) Fragments of floral-foliage motifs, St Albans Abbey chapter house. 229/6 a-l. (B) Similar white and silver-stain floral foliage motifs in niche spandrels, Little Malvern Priory (Worcs.), 1480–82. Photo by author.

workshops employed at Holy Trinity, Tattershall, in the late 1470s and early 1480s; and there are also parallels in painting style between these glaziers and the St Albans remains.

In particular, although the opacity of the glass renders it impossible to understand the original appearance of the painted detail completely, a fragment showing a face in profile (712/1) appears to have affinities with the work of this group in its relatively blunt, heavy features, its drooping eye-lids and deep shadows beneath its eyes, but it has an otherwise predominantly linear approach to figure style, with little attempt at modelling. The habit of representing figures in profile is particularly characteristic of one of the workshops. Associated in the Tattershall accounts with the glaziers Richard Twygge and Thomas Woodshawe, glass in the same style includes comparable profile figures both at Tattershall and in glazing by the team at Great Malvern Priory (Worcs.) (Illus. 3.7.7). Other details are suggestive of the workshop's involvement at St Albans too. A carved bench end, for example, shares similarities with those before which members of Henry VII's family kneel at Malvern (Illus. 3.7.8).

Perhaps significantly, the Twygge–Woodshawe workshop is the only one of the Tattershall teams known to have been employed outside of the West Midlands. Indeed, the workshop enjoyed the patronage of some of the best-connected figures of the late fifteenth century, executing, in addition to work commissioned by Bishop William Waynflete of Winchester on behalf of Ralph Cromwell at Tattershall, a scheme for Bishop Alcock of Worcester at Little Malvern in the early 1480s; the east window of the new Lady Chapel at Gloucester Cathedral for Abbot Farley; and work at Great Malvern in 1501–2 for members of the court of Henry VII. Richard Twygge was employed between 1507–10 to glaze the west window and clerestory windows in the nave of the royal abbey at Westminster.[41]

On the other hand, in addition to, and outweighing in quantity these fragments of glass painted in an English tradition, there is evidence of glass painters in operation at St Albans working in the Flemish style. The quality of the paint itself is distinctive on these fragments, thickly applied over almost all of the surface of the glass, and 'sooty' in appearance. The pigment has been skilfully worked to create an almost 'sculptural' effect; many fragments retain evidence of a highly sophisticated use of needles or sticks to scratch out details and highlights from the stippled ground, reinforced and enhanced by the use of silver stain, typically of a vibrant orangey tone. The effect contrasts sharply with the more







Illus. 3.7.7A–B. (A) Fragment of face in profile, St Albans Abbey chapter house. 712/1. (B) Profile faces of similar style from Great Malvern Priory (i), *c.*1500, and Tattershall (ii), 1482. Photos: Author (Great Malvern), Gordon Plumb (Tattershall).

[41] Marks 1993, 42.

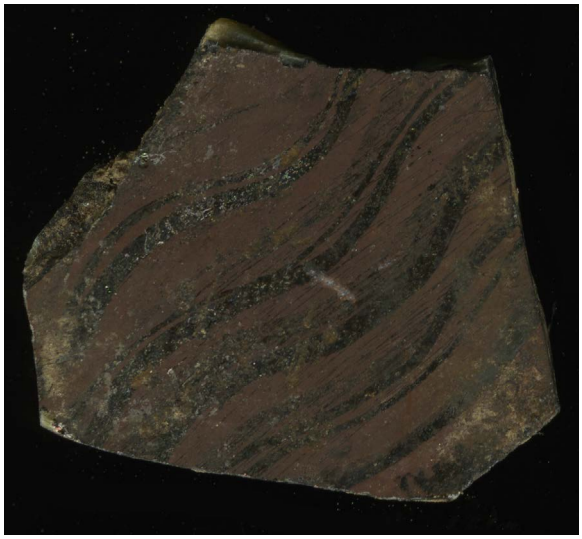


A



B

Illus. 3.7.8A–B. (A) Fragmentary decorated architectural element, possible bench end, St Albans chapter house. 229/26 (B) Detail of carved bench end and hanging, Great Malvern Priory, *c.*1500. Photo by author.



Illus. 3.7.9. Finely-painted locks of hair from St Albans Abbey chapter house. 563/9.

translucent, less worked appearance of the 'English' remains.[42]

The nature of the St Albans remains limits the opportunities for direct stylistic comparisons, but it has been noted that they have a context in the earliest surviving glazing schemes in England in the Netherlandish style.[43] In terms of figure style, a fragment (563/9, Illus. 3.7.9) painted with locks of yellow-stained hair, highly modelled, with delicate stick work, and associated with the east window of the chapter house, appears similar to the treatment of Princess Cecily's hair in the Royal window at Canterbury (Illus. 3.7.3B); although in poorer condition, another fragment (248/7) may echo the ringlets of the angels in the same window. On the available evidence, there may be parallels between the remains of a finely executed female face (fragment 248/4) and some of the figures at Fairford parish church, dating to between 1500 and 1515 (Illus. 3.7.10). The formation of the eye, with a heavy black line delineating the upper lid, subtle under-eye shadows, and thin, faint brows is striking.

Other fragments from St Albans may have parallels with early works in the Netherlandish style in England in other media. Although now opaque, one fragment (564/12, Illus. 3.7.11) appears to show the upper left hand portion of a facing female head, wearing a headdress with a broad, turned back band framing the face, similar to that worn, for example, by the wife of Sir John Donne in the triptych he commissioned from Hans Memling in 1478, now in the National Gallery. More generally, two exceptionally accomplished fragments (563/5 and 564/5, Illus. 3.7.12A), each showing a portion of a (clean-shaven male) face, closely parallel, in both the form of the facial features and also the subtly modelled, realistic painting style, figures found in Netherlandish panel paintings from the mid-fifteenth century onwards (Illus. 3.7.12B).

The repertoire of decorative devices and details evident in the glazing remains reinforce the connection between the stained glass at St Albans and early English glazing schemes in the Netherlandish style. A portion of a diaper design, comprising diamonds surrounding pointed quatrefoils, picked out of a wash of dark paint (248/8), mirrors that used to represent floor tiles in the Canterbury Royal window, to enliven architectural elements in some of the Fairford windows, and to decorate the clothing of a number of the figures in the west window of St George's chapel, Windsor (*c.*1500–6) (Illus. 3.7.13).[44]

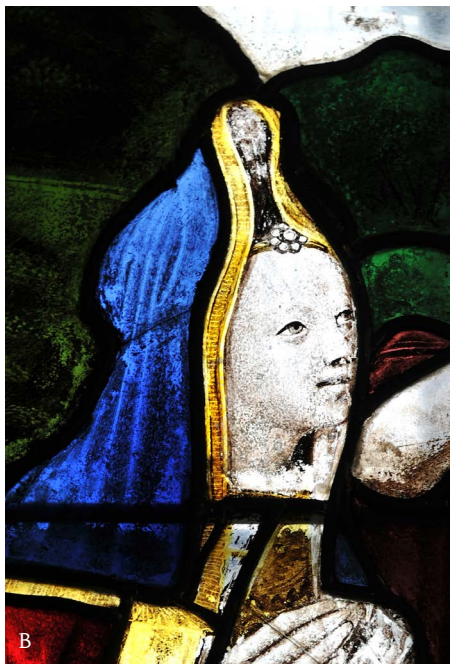
[42] Compare, for example, the 'sooty' wheat ears and orange-gold stain of Illus. 3.7.1, with the translucent, pale-stained foliage of Illus. 3.7.6.

[43] Brown 2007, 94.

[44] Sarah Brown also noted in unpublished remarks in the mid-1990s fragments of a probable decorative tiled pavement on pale blue glass,

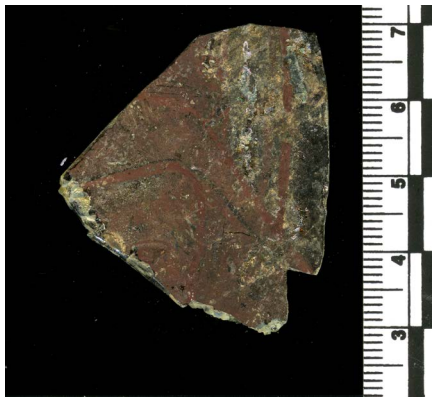


A



B

Illus. 3.7.10A–B. (A) Fragment of female face from St Albans Abbey. 248/4. (B) Detail of the face of the third Mary Resurrection window, Fairford Parish Church (Glos.), 1500–15. Photo © Will Collin.



Illus. 3.7.11. Partial female face, framed with head dress, from St Albans Abbey. 564/12.



A i



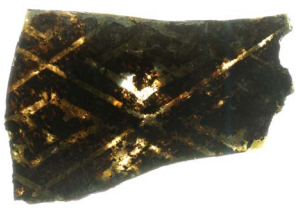
A ii



B

Illus. 3.7.12A–B. (A i and ii) Partial, probably male, faces painted in an exceptionally accomplished style, from the excavated glass remains of the St Albans Abbey chapter house. 563/5 and 564/5. (B) Detail of St Laurence, Froimont diptych by Rogier van der Weyden, *c.*1460 © Royal Museums of Fine Arts of Belgium, Brussels.

A

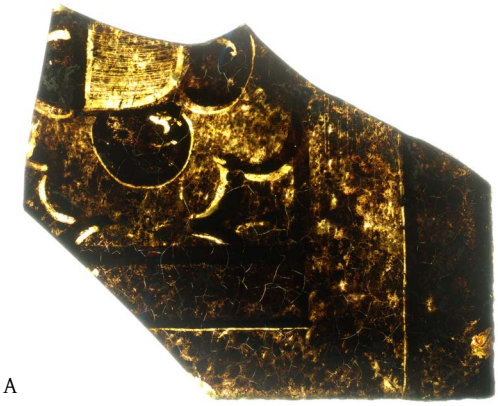




B

Illus. 3.7.13A–B. (A) Fragment of decorative diaper, from the windows of St Albans Abbey chapter house. 248/8. (B) Detail of figure with clothing decorated with similar diaper design, west window, St George's chapel, Windsor, *c.*1500. Crown copyright. Reproduced by permission of Historic England.

A





B

Illus. 3.7.14A–B. (A) Fragment of quatrefoil motif, St Albans Abbey chapter house. 711/9. (B) Detail of pedestal with similar motif, east window, Winchester Cathedral, first years of the sixteenth century. Reproduced by permission of Historic England.

Two architectural fragments (563/7 and 711/9) closely resemble cornicing, made up of a row of quatrefoils within circles enclosing shields, in which a picked-out highlight reinforces the painted outlines, found in the east window and fragmentary choir aisle windows of Winchester Cathedral (Illus. 3.7.14).

This glazing is datable to the early part of the episcopacy of Richard Fox (1501–28) and includes some of his personal badges and devices. The glass has, in turn, been compared to glazing formerly in Henry VII's chapel at Westminster, and to work at Fairford, where

with the design rubbed out of a light wash of paint, recalling the use of a similar technique to create damask hangings in the Canterbury Royal window, tiled pavements in the west window at St George's chapel, Windsor, and damask grounds and pavements in the east window of Winchester Cathedral and windows at Fairford. These are no longer evident in the St Albans remains.

a similar quatrefoil cornicing motif (minus the shields) appears in numerous windows. Numerous fragments survive (563/28; 564/8, /11, /15, /19, /20; 711/5, /10) that show portions of small-scale window lights painted with a lattice design, perhaps intended to convey quarry glazing, and to reflect a motif used throughout the Winchester and Fairford glazing, in depicting interior scenes (in narrative windows) or within fictive architectural niches housing larger figures.

The distinctive striated shading that characterizes many of the St Albans fragments is also found in the remains of the original glazing of St Martin's, Stamford, associated with John Russell, Bishop of Lincoln (1480–94). It has been suggested that another small technical detail may also link the St Albans remains with glaziers working in the Flemish manner in England. Sarah Brown located a fragment of flashed ruby with an abraded circular form and suggested that, although it may be evidence for the use of the 'annealing' or 'jewelling' technique described by Theophilus, in which a glass 'jewel' was fixed the surface of a piece of glass using a thick layer of glass paint, the technique does not appear to have been one commonly used by foreign glaziers in England. As such it may alternatively represent a form of decoration used at Fairford, where the surcoats of some of Christ's oppressors (in windows NII and NIV) are decorated with circular depression, abraded out of the ruby flash and then stained yellow. The ruby fragment is not now immediately evident; it may perhaps be identified as one of three now opaque and devitrified fragments bearing similar depressions (583/2; 711/7, /8). Indeed, the depression on one fragment (583/2) appears to be in the shape of a lobed flower or star, suggesting more firmly decorative abrading rather than a jewelling 'scar'.[45]

Glazier Operations in Late Medieval England: Collaboration and Co-Operation

This evidence for glass painting in both the English and Netherlandish styles at the St Albans chapter house has a context in other late fifteenth-century glazing projects. In the Royal window at Canterbury, the main lights may have betrayed the hand of a Netherlandish artist, but 'the tracery light prophets, apostles and canonized ecclesiastics are unmistakably indigenous work'.[46] In the years around 1490, the east window of the Lady Chapel at Gloucester Cathedral was glazed with figures of the Virgin and virgin saints housed within architectural niches, alternating with scenes of episodes from the life of the Virgin.[47] The figures were executed in the English tradition: indeed, they have been identified as originating in the Twygge–Woodshawe workshop.[48] The pictorial scenes, in contrast, show all the traces of being 'of Continental origin or influence'.[49] At Westminster Abbey, Richard Twygge was contracted in 1507–10 to glaze many of the nave windows; at the same time, plans were in hand for the glazing of Henry VII's newly constructed chapel at the other end of the abbey church. Although now destroyed, the figural glass was in the Netherlandish style, with similarities with Fairford and Winchester.[50]

In themselves, these examples, at Canterbury, Gloucester and Westminster, indicate the variety of the ways in which glaziers worked to complete a project in late fifteenth-century England. Although Twygge and his foreign colleagues worked independently on their own areas of the church at Westminster, elsewhere the glazing teams co-operated on single windows; at Canterbury confining themselves to distinct parts of the window, but closely interwoven at Gloucester. Mapping the chapter house remains to the window bays they were probably associated with raises some possibilities for understanding glazier practice at St Albans. On the south side of the chapter house, for example, the stylistically identifiable fragments of find 711, associated with Bay 6, are painted in the Netherlandish manner. Find 229, in contrast, located west of bay 7, is predominantly English in style: possibly suggesting that glaziers working in different traditions were each given a window to paint.

A different picture is painted, however, in the remains of the great east window (contained largely in finds 563 and 564). Containing fragments in both the English and Flemish manners, it is likely that glaziers belonging to both traditions, as at Gloucester, worked alongside each other on the same window. Portions of figures (564/5, 564/12, 563/5)[51], architectural elements (563/4, 563/7, 563/28, 564/8, 564/11), an elaborate jewel (564/23) and a clawed animal foot (564/21, Illus. 3.7.15) are in a highly sophisticated Netherlandish style. But alongside these is the partial quarry painted with a design similar to that found across fifteenth-century England (563/12, Illus. 3.7.4 above), other fragments, possibly showing portions of nimbs or vesicas (563/18, /22) in an entirely linear style, and a large handful of small, circular medallions (563/11, /15, /16; 564/1, /2, /3, /4) characteristic of English glazing in form and in some (legible) cases, motif (Illus. 3.7.16).

[45] A further fragment (711/21) of possibly blue glass also bears a (circular) depression to its surface. This may be more straightforward evidence of 'jewelling', although blue glass was sometimes flashed with ruby to create purple, and this ruby layer could have been abraded away (and possibly stained) to decorative effect.

[46] Marks 1993, 206; Caviness 1981, 251–73, Pls. 181–96.

[47] McNeil Rushforth 1921.

[48] Marks 1993, 42 and 203, based on Marks 1984, ch. 4, 75–116.

[49] McNeil Rushforth 1921, 193.

[50] Bishop Fox, responsible for the Winchester glazing, served as executor of the will of Henry VII.

[51] These fragments are illustrated in Illus 3.7.11 and 3.7.12.



Illus. 3.7.15. Fragment of a clawed animal foot, from among the St Albans Abbey chapter house remains. 564/21.



A



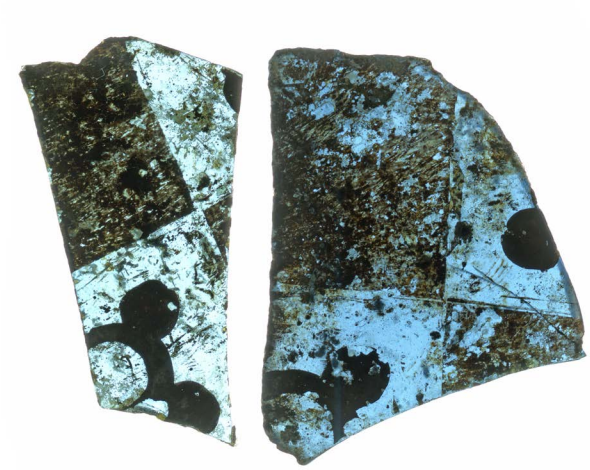
B

Illus. 3.7.16A–B. (A) An example of a number of leaded, circular medallions with a wavy-armed star motif picked out of a painted ground, from the excavated St Albans chapter house window glass (564/4), comparable to those found elsewhere in late medieval glazing, such as (B) from the remains of the medieval glazing of St Michael's, Coventry, at Coventry Cathedral. © Crown copyright. Reproduced by permission of Historic England.

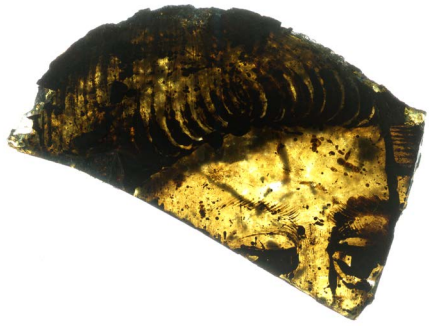
It is not possible to know how the glazing of the east window might have been divided among the glaziers responsible for it, but fragments from elsewhere in the chapter house potentially suggest close collaboration in some of their workings. Two fragments, one in the Netherlandish style (248/3) and the other English (229/26), are painted with architectural elements of apparently highly comparable form, possibly suggesting the use of common models in the scheme. This kind of collaboration between different workshops is a feature of some of the best-surviving late medieval schemes in England,[52] and forms part of a growing recognition of the potential complexity and sophistication of glazier operations in the period. Ultimately challenging the concept of the distinct 'workshop style', some of this research has focused on questions of the influence of Continental practices on English glaziers.

Perhaps most strikingly, in the well-preserved scheme at Great Malvern Priory (Worcs.), a window of *c.*1500 attributed to Richard Twygge and Thomas Woodshawe broke with the unwillingness of English glaziers to

[52] This has been shown, for example, in the choir clerestory glazing at Great Malvern Priory, which houses the best-surviving scheme of fifteenth-century stained glass in England. See Gilderdale Scott 2008, ch. 4, 175–9.



Illus. 3.7.17. Fragments depicting the decorative tiled pavement from the material excavated at St Albans Abbey. 248/5.



Illus. 3.7.18. Partial male head from among the St Albans chapter house glazing remains. 229/21.

run narrative themes across mullions, allowing a composition of the Virgin in her glory to span three lights. The only fully-fledged 'picture' window by indigenous glass painters, it closely mirrored the design of a window containing the same subject at St Gommaire, Lierre, and anticipated the 'pictorial' glazing schemes which ignore architectural divisions by Continental glaziers at Fairford (*c.*1500–15) and King's College, Cambridge (begun *c.*1515). There are also signs that Twygge–Woodshawe altered their painting style, in line with the approach to painting of their European counterparts. Compared to the earlier work associated with them, the figures in the Malvern window of *c.* 1500 are, on the whole, painted in a more subtle, sophisticated manner. The faces are less block-like, whilst female and angelic visages are smooth ovals ending in neat chins; the modelling is more subtle and effective.[53]

The glazing remains from the chapter house at St Albans may provide further evidence for the adoption of Continental techniques by English glaziers, as a number of fragments appear neither wholly Netherlandish nor English in style. Fragments of decorative tiled pavement (248/5 a and b, Illus. 3.7.17) painted on blue glass echo the propensity for colourful, often intricately patterned pavements in early glazing schemes in the Netherlandish style in England,[54] and do not follow the chequerboard designs, predominantly in black and white, typical of most English windows of the fifteenth century. In terms of painting technique, however, the design is painted on to the fragments, in the English manner, not rubbed out of a thin wash of paint, as found in many of the Netherlandish-style examples. A further fragment (229/21), on which a partial male face is depicted (Illus. 3.7.18), has thickly applied paint, stipple shading, significant variety in the thickness of the trace lines, and stickwork to create highlights in the hair, in line with the fragments in a Netherlandish style. It lacks, however, the elegance and assurance of hand associated with these remains, and relies more heavily on linear, rather than stipple, shading in its modelling, as is characteristic of much English work of its period.

The glazing scheme and its iconography

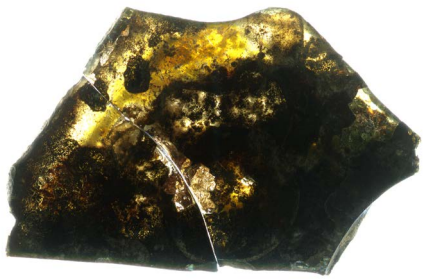
The glazing of the St Albans chapter house was almost certainly lavish and accomplished. In addition to the sophisticated painting style of much of the glass (as noted above), fragments of a range of glass colours survive, including various shades of blue (711/21; 229/4, /23, /24; 248/5a–b; 65/2), green (229/2 a–k), murrey (229/3, 22) and flashed ruby (229/5); and the scheme incorporated numerous drilled elements, both circular (563/11, /15, /16, /17; 564/1, /2, /3, /4, /5) and 'lemon'-shaped (711/1–2). It may also have been designed with a self-consciously literate and learned audience in mind. Unusually, there are traces of multi-line texts having been incorporated into the glass (711/22 a–c, Illus. 3.7.19). There are suggestions that the scheme included both small-scale narrative sequences and larger-scale figures.

Although the fragmentary nature of the remains favours the identification of smaller-scale subjects (there is simply more chance of a near-complete small subject surviving on a small fragment of glass), a large jewel motif (564/23a–b, Illus. 3.7.20), measuring some 70 x 30 mm in total, must have originally belonged to a larger subject, perhaps representing a jewelled clasp or brooch; similarly, a small medallion (563/11) also appears to have been painted with a jewel design, perhaps originating in a crown or border; whilst another

[53] ibid., 210–14.
[54] For example, some of the windows at St Mary's, Fairford (Glos.), 1500–15.



Illus. 3.7.19. Fragments apparently showing lines of text, separated horizontally by painted lines, from the St Albans Abbey chapter house remains. 711/22 a–c.



Illus. 3.7.20. Large jewel motif from St Albans Abbey chapter house. 564/23a–b.

relatively large fragment appears to be painted with a portion of larger-scale drapery (563/26). Suggestions for the iconography of the scheme are inevitably speculative, and are focused on the chapter house's east window,[55] but two possibilities are particularly worthy of consideration.

An Apocalypse Cycle?

The fragments relating to the east window of the chapter house (Finds 563 and 564, with small finds 560, 562 and 566) represent an unusual mix of subjects.[56] There are small-scale figural subjects, represented by portions of faces, hands and bare feet, probably garment borders or halo rims, probable drapery, and pieces depicting hair; more specifically, there is a possible portion of an angel's wing. There is evidence of animal subjects, in a patch of feathers or scales, fragments probably depicting fur, and a splendid clawed paw. A number of fragments of architectural subjects survive, along with multiple partial inscriptions, and small circular medallions, some decorated with wavy-armed star motifs.

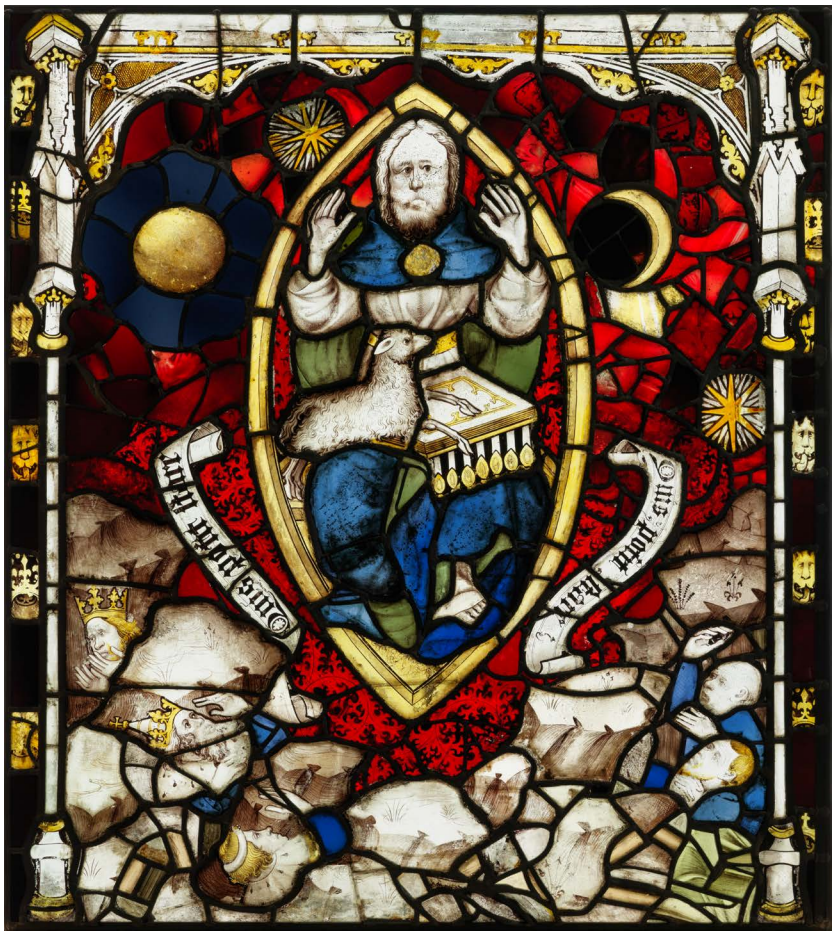
One possible context into which all these subjects might have been incorporated is a cycle narrating the Book of Revelation, or the Apocalypse, of St John, with its wide-ranging sequence of nightmarish, often beast-filled, episodes revealed by an angel to the apostle. The Apocalypse remained an extremely popular text throughout the Middle Ages, and was constantly re-worked and re-imagined artistically; but it may have held a particular appeal to the community at St Albans when it came to glazing its newly re-furbished chapter house in the late fifteenth century.

There were, by then, a number of high-status precedents for the choice of subject in English monumental art. Best-known is the magnificent stained glass cycle of 80 scenes installed in the great east window of York Minster by the Coventry glazier, John Thornton, in the early years of the fifteenth century.[57] But the subject was used in other decorative schemes, including, significantly, those put up in the chapter houses of Benedictine monasteries. In the decade *c.*1360–70, an Apocalypse cycle was painted on to the walls of the recently remodelled chapter house of Coventry Priory, followed, in the years around 1400, by a sequence of 96 scenes in the equivalent location at Westminster Abbey.[58] The choice of subject matter, with its repeated warnings of the coming of the Day of God's Judgement, can be related generally to the function of the chapter house as a place of communal judgement and discipline.[59] More specifically, it reflected the requirement laid down in the twelfth chapter of *The Rule of St Benedict* that monks include a recitation from memory of one chapter of the *Book of Revelation* in their celebration of the Office of Lauds each Sunday.[60]

Although some decades old by the time of the St Albans commission, precedents such as those at Westminster and Coventry, (perhaps known to the patrons of the St Albans scheme through the general chapter meetings of the Benedictine congregation) may, through their very age, have enhanced the attraction of the Apocalypse for inclusion in the chapter house glazing. In the late Middle Ages, the Benedictine congregation in England

[55] General observations regarding the identifiable subjects within each find are made in the introductory sections of the catalogue.
[56] See above, pp. 239–43 for summary, and fragment numbers, then following pages for individual entries.

[57] The window, and its glazier, are referenced throughout the historiography of medieval stained glass in England, but for a well-illustrated, summary account of the window, including the text of the contract with Thornton, see French 2003.
[58] Gill 2001, 206–22; Binski 1995, 185–95.
[59] Binski 1995, 188–9.
[60] Gill 2011, 218, chapter XII of the Rule of St Benedict, On how the morning office is to be said, includes the instruction, *lectionem de Apocalypsis una ex corde.*



Illus. 3.7.21. Christ in majesty (panel 9a), the Great East Window, York Minster (1405–08). Other examples can be found in panels 10c, 11h, 2g, 2j, 3c. Photo: Taken by the York Glaziers Trust, reproduced by kind permission of the Chapter of York.

faced growing attacks and competition for patronage from rival congregations, orders, and institutions. Its response included an assertion of their identity as the 'traditional' congregation, possessed of a pedigree no other in England could rival; and one way in which this identity was signalled was through the deployment of artistic patronage, to flag past associations (with their inherent privileges and prestige), and to harness them to present ends.[61]

The reiterating of a previously-deployed iconographical theme may have served this end at St Albans, particularly, perhaps, as it resonated with a distinguished period in the abbey's own history. At the same period as the Westminster paintings, Abbot Thomas de la Mare had painted on the *frons* (the front, or interior east wall) of the previous chapter house a representation (with other unidentified images) of Christ in Majesty.[62]

The charismatic de la Mare's reforms at St Albans were wide ranging but included initiatives that may have held a particular attraction for the community at the end of the fifteenth century. De la Mare's association with the Augustinian friars and his establishment of a side-chapel altar exclusively 'for the use of mendicants and seculars' represented not combat with rival orders, but their successful assimilation into the Benedictine house. Equally, in contrast with the image of the decadent, spiritually-lax Benedictine abbot promoted by rivals, de la Mare appears to have brought to St Albans elements of the teachings of Rolle, Hilton and other scholars associated with late medieval spiritual revival in England, and apparently led a number of the abbey's brethren in the adoption of an ascetic regime.[63]

The context for de la Mare's image of Majesty is not known, but it was one commonly associated with the Apocalypse. Numerous interpretations of the subject, focusing on God and the Lamb, occupied the central light of the nine-light window at York Minster (Illus. 3.7.21).[64] At Westminster, a Judgement composition (a variation of the Majesty) formed the 'showpiece', technically and thematically, to the Apocalypse scheme.[65] It is possible that the 'caeteris imaginibus' of de la Mare's scheme followed similar suit; alternatively, the development of a more simple Majesty composition into an Apocalypse cycle by Wallingford may have functioned as a way to interact with and evoke the past, but also to surpass it.

Indeed, in the context of the likelihood of the east window of the late fifteenth century chapter house containing large and small-scale imagery (as noted above), it is possible that Wallingford's glazing, like the wall paintings at Westminster, incorporated both an Apocalypse narrative cycle and a larger Majesty or Judgement figure.[66] This kind of mix of glazing forms

[61] Luxford 2005, part III, ch. 5.
[62] Binski 1995,.188; *Gesta Abbat.*, III 386.
[63] Clark 2004, 17 and 24.
[64] French 2003, 10.
[65] Binski 1995, 188–9.
[66] Interestingly, the magnificent Angers Apocalypse tapestries, commissioned in the late 1370s for Louis I d'Anjou, also combine large



Illus. 3.7.22. Narrative panels of the life of St Martin of Tours, surrounding a large central figure of the saint, St Martin-le-Grand, Coney Street, York, dating to the 1440s. Now in window nII, it formerly filled the church's great west window. Photo: Gordon Plumb.

was relatively common in fifteenth-century England, particularly in windows (as in the nine-light chapter house opening) of an odd number of lights, allowing the large figure to be placed centrally (Illus. 3.7.22).[67] The fragmentary remains of large-scale jewel motifs at St Albans could be accommodated within a Majesty image, as part of a mantle clasp or border.

Any wish, however, to align the new chapter house with traditional precedent does not suggest that the glazing scheme might have been in some way 'old fashioned'. Continually re-imagined in the light of evolving artistic fashions, the Apocalypse appeared, around the middle of the fifteenth century, as probably the first text translated into block-book form. Initially printed in the Netherlands, and extraordinarily popular, five subsequent editions had been produced by the early 1470s.[68] Other block-books are known to have served as models for glaziers in late fifteenth-century England. Typological cycles at Ralph, Lord Cromwell's collegiate church at Tattershall, dating to 1466–80, and at the Benedictine priory at Great Malvern (in *c.*1480–90), for example, drew extensively on block-book editions of the *Biblia Pauperum* and *Speculum Humanae Salvationis*, first produced in the Netherlands just a few years after the Apocalypse volume.[69] Produced economically and in high numbers, with the aim of rendering biblical stories and moralizing lessons accessible to a wider and less affluent audience than their manuscript precedents, no particular channel for its potential availability at St Albans needs to be identified; but if, as suggested above, the glaziers responsible for the chapter house scheme had a Netherlandish connection, then the journey may have been thus facilitated.

Furthermore, on the limited evidence available, there appears to be a number of potential parallels between

figures with smaller panels narrating the Apocalypse, although the large figures do not represent Christ in Majesty.

[67] As already noted above, the east window of the Gloucester Cathedral Lady Chapel, contemporary with the St Albans chapter house glazing and also executed by glaziers working in both English and Netherlandish styles, was composed of large figures interchanged with narrative scenes.

[68] Hourihane 2012, 121, 354. The first three editions were printed in the Netherlands, the subsequent three in Germany but based on Netherlandish originals.

[69] Marks 1984, 191–8; McNeil Rushforth 1936, 2–3, 148–9, 270–301.

the stained glass at St Albans and some of the general features, and particular details, of some of the scenes in the block-book Apocalypse. The multiple inscribed fragments surviving from the chapter house may be reflective of the significant quantities of text incorporated into the block-book compositions. The fragments of small-scale, latticed window openings (563/28; 564/8, /11, /15, /19, /20), for example, might be accounted for in the books' multiple architectural subjects, and particularly, perhaps, in the representation of interior spaces (Illus. 3.7.23). The various beasts and figural subjects depicted in the book would have required the painting of quantities of fur and hair.

More specifically, the form of one patch of feathers or scales (563/10) closely echoes the block-book representation of the bodies of the human-headed 'locusts' called forth by the fifth angel (Illus. 3.7.24). Indeed, the bearded, hat-wearing male heads, in profile, of these 'locusts' closely resembles the partial St Albans head of fragment 712/1 (Illus. 3.7.7). Although more skilfully worked than the linear illustrations, the fragmentary clawed paw among the glass remains is also of a form found in the Apocalypse (compare Illus. 3.7.15 and the claws of the red beast in Illus. 3.7.23B). The partial female face and headdress from St Albans arguably follows some of the female figures in the book. But perhaps most striking are the parallels between the wavy-armed stars that feature prominently in the scenes at the beginning of the Book of Revelation, narrating the opening of the various seals (6:1–17) and the Angels sounding the Trumpets (chapters 8 and 9), and the multiple small, glass medallions decorated with the same motif from St Albans (compare the printed examples at the top of Illus. 3.7.24 and that in glass of Illus. 3.7.16). The relative size of the glass medallions within their original context cannot now be known, but their being separately leaded into the glass would, at least, have given them a special emphasis mirroring the prominence lent by their large size in the block-book depiction.

One potential problem with the suggestion of Apocalypse iconography is how the long and complex narrative might have been accommodated within the chapter house east window, particularly if a significant portion of the central light was given over to a larger-scale figure. At York Minster, for example, a window famously almost the size of a tennis court was available, and a narrative of almost 80 scenes created;[70] although the incorporation of an Old Testament sequence prior to the Apocalypse cycle, and a string of historical York donors at the foot of the window, indicate that a window of such enormous size was not quite necessary to house



Illus. 3.7.23A–B. (A i and ii) Examples of fragments almost certainly showing latticed window panes from the St Albans chapter house material. 564/8 and 564/11 (B) Detail of The Apocalypse of St John, block book, impression *c.*1478–80, f. 34v (Cambridge University Library, Inc.3 [4245]), showing pink architectural structure with cross-hatched window. Reproduced by kind permission of the Syndics of Cambridge University Library.

[70] The window is of the same nine-light form as St Albans, but measures 23.8 m (78 ft) in height, compared to the chapter house's probable 9.14 m (30 ft).



A B

Illus. 3.7.24A–B. (A) Fragment of feathers or scales from the St Albans chapter house remains. 563/10. (B) Detail of The Apocalypse of St John, block book, impression *c.*1478–80, f. 12v (Cambridge University Library, Inc.3 [4245]), showing human-headed 'locusts' called forth by the fifth angel, with bodies covered in 'feathers' of similar form to fragment 563/10. Reproduced by kind permission of the Syndics of Cambridge University Library.



Illus. 3.7.25. Apocalypse triptych, attributed to Master Bertram of Minden, *c.* 1400, now in the Victoria and Albert Museum. © Victoria and Albert Museum, London.

the subject. The block-book Apocalypses contained around 50 pages, each with two scenes.

One possible solution is that an Apocalypse narrative at St Albans was allowed to spill over into the flanking windows to north and south (bays 3 and 5).[71] Glaziers working with other narrative subjects in fifteenth-century England certainly seem to have adopted this approach. In the 1430s or early 1440s, the east window at Great Malvern Priory was filled with a narrative of Christ's Passion, flanked with episodes from the Infancy of Christ and the life of the Virgin. The model or inspiration for the design was probably contemporary Netherlandish winged altarpieces, produced relatively en masse, with directly comparable sequences. In effect, the three easternmost windows functioned as a monumental triptych.[72] Perhaps a similar intention lay behind the glazing choices for the east end of the St Albans chapter house. Although earlier in date than the St Albans glass, the Apocalypse formed the subject matter of one of the most spectacular extant winged altar pieces of the late Middle Ages: the triptych of 45

[71] Although evidently containing material in a comparable painting style to the chapter house east window, so little material survives from these flanking bays, with so few identifiable subjects, that this suggest can be only highly speculative.

[72] Gilderdale Scott 2008, 159–65.

scenes of the Apocalypse of *c.*1400 attributed to Master Bertram of Minden (Illus. 3.7.25).

A Life of St Alban?

Among the most striking of the chapter house glass fragments is a partial, clean-shaven face, down the cheek of which rolls a single, silver-stain tear (Illus. 3.7.26). Within the context of a broader historiography focusing on medieval emotions in general, the depiction (in literature and art) of weeping in the Middle Ages has attracted recent attention.[73] In particular, the relationship between tears and religious experience has been emphasized, suggesting that the gift of tears was precious: in some contexts, proof of the weeper's piety and a mark of his merit. One article, examining weeping in the textual representations of the lives of late medieval English bishops, notes that late medieval England produced 'an unusually large number of saintly bishops', and in the *vitae* and biographies produced about them, 'without exception, each of these men is depicted weeping, usually with great frequency and incredible volume' in the course of their devotions.[74]

The figure in the St Alban's fragment, with his lack of a beard and from what can be seen of his hair, is consistent with the representation of clerical figures in general in late fifteenth-century stained glass in England (Illus. 3.7.27). Although it is difficult to imagine an episcopal saint whose life might be narrated (as the small size of the fragment might suggest) in the chapter house windows, considered in the light of other artistic and literary achievements at St Albans in the late Middle Ages, it is perhaps possible to suggest another identity for the fragmentary figure: that of St Alban himself.

The importance of, and pre-occupation with, the legend of England's protomartyr in the intellectual activities of the community at St Albans in the late Middle Ages is clear. [75] Perhaps associated with a broader contemporary revival of interest in England's ancient saints (in the first years of the sixteenth century, Alban was depicted alongside SS Oswald, Edmund, Dunstan, and Edward the Confessor in the west window of St George's chapel, Windsor),[76] at St Albans the literature surrounding the life and cult of the abbey's foundation saint was extensively revised and augmented: between 1400 and 1540, the community produced three new accounts of Albans's martyrdom and the foundation of his shrine, including a new collection of recent miracles claimed at the shrine; thoroughly revised and renewed its existing collection of his *vitae*; and re-examined the legend through various other kinds of writing. It has even been suggested that the famous *Liber benefactorum* was a comprehensive history 'not of the abbey, its power and privileges, but rather of the cult of St Alban itself'.[77] Well-known among this body of material promoting St Alban produced by the abbey is the vernacular life of the saint by John Lydgate, commissioned in 1439 by Abbot John Whethamstede himself.



Illus. 3.7.26. Partial male, clean-shaven face with possible tear, from the St Albans chapter house remains. 563/5.



Illus. 3.7.27. Detail of the head of St Laurence, Great Malvern Priory (Worcs.), 1480s. © Crown copyright. Reproduced by permission of Historic England.

[73] A good starting point for the recent (broad) historiography is Gertsman 2012.
[74] Harvey 2014, 591.
[75] Clark in Henig and Lindley (eds) 2001, 218–30.
[76] Brown 2010, 123–4.
[77] Clark 2001, 223.



Illus. 3.7.28. The martyrdom of St Alban, from Matthew Paris's *The Life of St Alban* (MS E. I. 40, Trinity College Library, Dublin, f. 38r). Reproduced by kind permission of the Board of Trinity College Dublin.

Perhaps significantly, in light of the tearful stained glass fragment recovered from the chapter house site, a feature of this 'new' life was an emphasis on Alban's weeping. Lydgate's poem wove elements from different sources with lines of his own creation, 'to amplify or elaborate, or repeat'.[78] One such elaboration occurs at the point Alban becomes a Christian, promising never to stray from the faith. In the source *Life*, Alban is described as penitent, and with weeping eyes he kneels before the cross and kisses it. Over the following 13 lines, Lydgate elaborates the description of Alban's weeping, repeating that he has now been converted.[79] It may also be significant, given the possible representation of the weeping figure in the glass fragment as a cleric, that in the 1534 *Lyfe of Seint Albon, Protomartyr of Englande*, at least, Alban, in a full-page illustration, is shown 'as a contemporary prelate, clasping a crucifix and pallium to his chest'. The connection between the printed image and the glass is surely reinforced by the fact that the book was printed at the abbey.[80]

Given this pre-occupation with the St Alban legend in the abbey's intellectual activities in the late Middle Ages, the choice of iconography associated with the saint might have been particularly appropriate to a chapter house setting, given its function as a focus of communal identity and commemoration. The paucity of surviving late medieval visual representations of St Alban in stained glass, statuary, wall paintings or manuscript illumination renders it difficult to place the surviving chapter house glazing fragments into a visual context,[81] but there are a few remains associated with the east window that might arguably support this suggestion of a St Alban cycle.

Some of the portions of fur or hair (563/9, /23, /27, 564/18, 241/2, 341/4, 612/1–2), for example, may have originated in the hairy cloak given to Alban by Amphibalus, which the saint almost invariably wears in representations of his execution (Illus. 3.7.28).[82] A tree branch set against an architectural element (563/1) echoes the design of a fifteenth-century pilgrim badge, in which the branched trunk of the tree from which the executed Alban's head hangs is set against an ashlar-

[78] John Lydgate in van der Westhuizen 1974, 47.
[79] ibid., 52.
[80] Clark 2001, 226.
[81] Clark 2004, 24. Matthew Paris' Life of 1230–50 is the only surviving illustrated manuscript.
[82] A number of late medieval pilgrim badges depicting St Alban's martyrdom are depicted in Henig and Lindley (eds.) 2001, 214. In the 1534 printed *Lyfe*, Alban wears contemporary dress; but there is no known example of this prior to the glazing of the chapter house.



A

B

Illus. 3.7.29A–B. (A) Portion of probable tree branch against an architectural element from the St Albans chapter house remains. 563/1. (B) Early fifteenth-century St Alban pilgrim badge, in private collection (drawing by Nick Griffiths, © Nick Griffiths).

buttress frame (Illus. 3.7.29). It is also attractive to wonder whether the inscribed fragment, bearing a partial 'M' followed by an 'a', and demonstrating in its combining of a Revived Lombardic majuscule with a *textura* minuscule that the chapter house glazing was high-status work of *c.*1480–90,[83] at the forefront of epigraphic fashion, might originally have belonged to a label reading 'Martyr'.

In considering the form the glazing of the chapter house east window with a life of St Alban might have taken, it was noted above that a window combining both small-scale narrative scenes and one (or more) larger figures would accommodate the apparently different scales of the fragmentary remains, and reflect fifteenth-century glazing fashions. The fragmentary remains of large-scale jewel motifs at St Albans might indicate that Alban was depicted in the royal and courtly dress he wore elsewhere, including in the spectacular windows by John Prudde at the Beauchamp Chapel between 1447–64 (Illus. 3.7.30). The fragments of lattice glazed windows reflect Netherlandish-style niches in which large-scale figures were housed in stained glass in England at the end of the fifteenth and in the early sixteenth century.



Illus. 3.7.30. St Alban, Beauchamp Chapel, St Mary's, Warwick (1447–64). Photo: Aidan McRae Thomson.

[83] See p. 261.

Inscriptions on the window glass from the fifteenth-century chapter house, by Sally Badham

Development of lettering style on stained glass and in other media

The Lombardic script (also termed Uncial), which was composed entirely of majuscule letters, is characterized by rounded forms with swellings and variations in the thickness of the lines and closed letter shapes. It was used on one fragment of glass from within the chapter house (229/1). This script was in common usage on stained glass and in other media in the period up to 1340–50, but was then superseded by *textura* minuscule (also sometimes known as Gothic minuscule, Gothic book hand, or black-letter), initially with Lombardic majuscules and from about the mid-1370s with Gothic majuscules. The minuscule letter forms of this script are reduced as far as possible into straight lines or 'minims'. In the latter fifteenth century, the individual letters are exceptionally angular in form with the minims jammed closely together and frequently joined at both apex and base so that one letter can be difficult to distinguish from the next.

This type is seen on most of the fragments of the chapter house glass. Those from within the chapter house vary in quality and probably date, but most of the fragments are good and probably date from the second half of the fifteenth century. Late in the century a variant script was used for a short period which combined *textura* minuscule with Revived Lombardic majuscules. Fragment 564/14 from one of the chapter house bays is of this type. Together with the quality of the script from the bays, this indicates that the chapter house glazing was high-status work from the period *c*.1480–90 and in the forefront of epigraphic fashion.

Comments on the individual inscribed fragments are to be found in the catalogue of the window glass and leading of the fifteenth-century chapter house. The following fragments are inscribed:

Glass associated with chapter house bays outside the chapter house

563/2; 563/3; 563/8; 563/13; 563/14; 563/20; 563/21; 564/9; 564/10; 564/14.

Glass from within the chapter house

711/6; 711/13; 711/14; 711/22 a–c; 712/2; 576/1; 229/1; 229/16; 65/5 a–f; 341/1–2.

Conclusion

Despite their highly fragmentary and often illegible nature, the stained glass remains from St Albans throw significant light on the chapter house's original glazing scheme. Answers to questions concerning the iconography and form of the scheme must remain speculative, although not without raising some interesting possibilities, particularly in the context of recent research on the vitality of Benedictine artistic patronage in late medieval England, in general, and on St Albans Abbey, its intellectual and cultural life, in the same period.

Stylistic evidence, however, offers more certain insights. It suggests, in conjunction with the fragments of glass wheat ears, that the glazing project belongs to the abbacy of William Wallingford: a significant addition to this known artistic patronage, centring on the abbey's high altar screen. Dating, as such, to the last two decades of the fifteenth century, and combining both English and Netherlandish traits, the remains offer significant further evidence of glazier practices at a turning point in the history of stained glass in England. In short, they highlight the attraction Netherlandish artists held for prominent patrons in England before the early sixteenth century, when the body of evidence becomes more plentiful.

Taken together, the stained glass remains – full of intriguing suggestions of complex glazing forms, such as 'drilled' medallions and multi-line text inscriptions, and containing portions of astonishingly beautiful paintwork of the latest fashions – support and enrich the image of St Albans Abbey, developed in recent studies examining other aspects of its identity, as a high-status, wealthy, and vibrant monastery until the very end of the Middle Ages.

CATALOGUE

This catalogue is a record of significant finds from the collection of stained glass fragments excavated in 1978. It includes those fragments whose current condition is able to convey information about the nature of the stained glass recovered from the chapter house, whether iconographic, technical, or stylistic. It does not record those (many) pieces entirely opaque with no discernable painted detail. Information on the inscriptions on the window glass was provided by Sally Badham.

The catalogue is divided into two parts. First the glass found outside and in close proximity to the window bays of the chapter house, organized first by bay number (Illus. 3.6.1B), then by find number, and then by fragment number, is detailed. It is possible that these finds relate to the windows below which they were discovered, and, therefore, that they provide relatively reliable information on the glazing scheme of these windows at the time of the dissolution of the abbey. The second part of the catalogue addresses glass from within the chapter house, again organized by find number and then by fragment number. These remains are more difficult to interpret given the discovery of a lead-melting furnace (F. 250) in the centre of the chapter house floor, raising the possibility that glass from other parts of the claustral complex was introduced into the area and fragments from elsewhere thus became mixed with the chapter house glass. Nonetheless, there are apparent parallels between some of the fragments found outside the window bays and within the chapter house, particularly within finds originating close to the architectural remains of the chapter house bays, and these are flagged.

For the more major finds, the catalogue entries are grouped thematically, under the headings: figural, including facial fragments, portions of hair, drapery or other garments, and the remains of probable angelic figures; animal-related; inscriptions; architectural; foliage; decorative, including fragments of floor tiles, apparent wall hangings and quarries; technical features, such as jewelling and drilling; and coloured glass, where no subject matter is discernable, as appropriate. Larger themes, such as figural, decorative and technical features, are also sub-divided if demanded by the surviving material. Inevitably, subject matter attributions for some fragments are speculative, but where this is so, the various possibilities are noted within the catalogue entry. Each catalogue entry includes notes on the nature of the fragment, in terms of glass colour and whether it includes painted detail; discernable iconography; the nature of the paint and paintwork, where observable; and the condition of the glass. An indication of the size of the fragment is also given. The irregular nature of the vast majority of the fragments means that this can be only a guide, and the largest dimensions of the piece are noted. The very small scale of the fragments, and their often deteriorated condition, makes it difficult to provide an accurate date. However, unless an alternative date is provided, it is thought that the fragment is consistent with a date in the late fifteenth century, when the chapter house was re-glazed.

The following terms are used in the catalogue entries:

i. Back-painting: painting on the exterior face of the glass, to emphasize a design and/or create a three-dimensional appearance.

ii. Corrosion: deterioration of the surface of the glass, normally resulting in pitting or crusting; may occur on either face of the glass.

iii. Drilling: a technique demanding great skill, whereby a hole is drilled into a field of glass to allow the insertion of a smaller piece of glass, secured by leading; used to treat heraldry or to create a rich jewel-like effect in draperies, crowns, haloes, etc.

iv. Flashing: application of thin coat of coloured glass on a base glass. Flashed ruby is most commonly found.

v. Jewelling: a method of enriching stained glass by fastening a coloured glass 'jewel' to the base glass with paint which was then typically fired so that the two glasses adhered.

vi. Roundel: panel consisting of a single piece of glass, generally round, bearing a self-contained design.

vii. Silver stain or yellow stain: a stain, ranging from pale yellow to deep orange, produced by applying a solution of silver compound to the surface of the glass which, when fired, turns yellow. It is almost always found on the exterior face of the glass.

viii. Stickwork: a technique whereby paint is removed with a stick or needle point before firing, to create fine detail.

ix. Stipple shading: a method of shading by dabbing paint.

In the entries which follow, catalogue numbers in bold indicate that the fragment is photographed.

Part I: glass associated with the chapter house window bays *(Illus. 3.6.1B)*

The stained glass fragments associated with the chapter house window bays are distributed very unevenly. Little or no glass was discovered in close proximity to Bays 1 and 2, on the north side of the chapter house, or to Bays 5, 6, and 7, on the south side (as detailed below). Significant finds were made, however, along the line of the eastern wall and outside the north-east corner of the chapter house, potentially associated with Bay 3, the easternmost bay on the north side, and, above all, with the great east window (Bay 4).

Bay 1 (north side, westernmost window)

No stained glass finds.

Bay 2 (north side, middle window)

Finds 569 and 570, located tight against the exterior wall of Bay 2, comprise tiny amounts of glass (five small fragments and around 30 small fragments respectively). The glass is now very friable – brittle, fragile, and flaking into layers; an iridescent surface sheen is present on most pieces. Very few of these fragments now bear any traces of paintwork, and no subjects are discernable.

Find 546, slightly north of Finds 569 and 570, yields three small, painted fragments. Their subjects are unintelligible, but the glass itself is now in a significantly better condition than that of Finds 569 and 570: it has de-vitrified to opacity but the glass is hard with little pitting and no flaking. This difference in condition perhaps raises the possibility that glass from more than one source was employed in the chapter house glazing, and is particularly significant in the context of the observation in the discussion above that more than one glazier or workshop may have been involved in the campaign.

Bay 3 (north side, easternmost window)

The finds associated with Bay 3 are numerous (543–4, 546, 610, 612, 615, 616, 621, 628, 634, 642, 648, and 652), and span a relatively large area, extending from above the remains of Buttress 2 forming the western edge of the bay (Finds 648 and 652), spreading eastwards and northwards (Finds 543–4, 610, and 612) to the vicinity of Buttress 3, the north-west buttress (Finds 546, 615, 616, 621, 628, 634, and 642). These finds yield 26 fragments, and intelligible painted subjects can be discerned on a handful of pieces, suggesting figural and possibly animal iconography (Finds 543–4/1, and 612/1–2, below), as well as a probable interior scene (Finds 610/1 and 616/1).

The glass associated with Bay 3 of the chapter house shares common characteristics. Although now opaque, it is generally free of corrosion or pitting, allowing paintwork to be observed in reflected light. An exception is the single fragment comprising Find 652. Apparently half of a diamond-shaped quarry, the glass surface is now entirely a light brown/beige colour with no paint remaining.

Find 543–4
1. White(?) glass fragment, painted.
c. 5 x 5 mm.
Partial eyeball and eyelid.
Brown-tinted paint.
Glass now opaque but no surface pitting or corrosion.

Find 610
1. White (?) glass fragment, painted.
*c.*30 x 45 mm.
Fragment bisected diagonally by a partial painted design comprising a cusped or fleur-de-lis element picked out of a painted ground; possibly belonging to a decorative background.
Brown-tinted paint.
Glass now opaque but little surface pitting or corrosion; traces of cement along one edge.

Find 612
1–2. Two fragments of white(?) glass, painted; probably originally forming one piece.
*c.*40 x 25 mm collectively.
Semi-circular portion (with grozed edge) of hair or fur in curled locks (as Fragments 563/9, /23, /27; 564/18).
Brown-tinted paint, skilfully applied.
Glass now opaque but little surface pitting or corrosion.

Find 616
1. White (?) glass fragment, painted.
*c.*30 x 25 mm.
Portion of small-scale subject, comprising partial foliate object and gathered folds, possibly drapery folds, set against a lattice-work background, probably representing a window opening.
Brown-tinted paint, skilfully applied in paint-lines of varying thickness, paint wash, and stick work to create highlights.
Glass now opaque but little surface pitting or corrosion.

Find 622
1. White glass fragment, painted
*c.*35 x 20 mm.
Portion of foliage design.

Brown-tinted paint, skilfully applied in trace lines, wash, and stick work; grozing to one edge may indicate that it was originally set with drilled detail. Glass in good, clear condition.

Bay 4 (the great east window) (Illus. 3.6.1B)

A very significant quantity of glass was excavated from the site directly below the exterior of the chapter house's great east window. Finds 563 and 564 produced hundreds of fragments in great density: Find 563 covered just 0.5m^2. Finds 560, 562, and 566 each contribute further small quantities of material from the same region. More than 50 individual glass fragments from these finds are catalogued, below, but it is also worth noting that Finds 563 and 564 contain a number of other significant pieces. There are, on the one hand, a small number of pieces of a very substantial size, but either the condition of the glass is such that no paintwork survives, or traces of paint survive but the subject matter is entirely unintelligible. One piece from 563, for example, measures *c.*95 x 55 mm, with traces of putty along one edge from where it was presumably held into its window opening, whilst Find 564 contains a piece *c.*55 x 50 mm, half-covered with traces of brown paint wash. Conversely, there are a number of very well-preserved, evidently painted, fragments of glass too small for the subject matter to be interpreted.

The subject matter of the glass from this area is varied. As in Bay 3, evidence of small-scale figural subjects is perhaps most plentiful, encompassing fragments of faces (Finds 563/5, /29; Finds 564/5, /7, /12, /13), hands and feet (Finds 564/6, /17), probable garment borders or halo rims (Find 560; Finds 563/17, /18, /22), possible drapery fragments (Find 563/26; Find 564/22), as well as pieces apparently depicting hair or fur (Finds 563/9, /23, /27; Find 564/18). Remains of Gothic textura inscriptions are also relatively numerous (Finds 563/2, /3, /8, /13, /14, /20, /21; Finds 564/9, /10, /14). Architectural elements, particularly those representing latticed window openings (Find 563/28; Finds 564/8, /11, /15, /19, /20), may represent the remains of interior scenes or framing devices between scenes. There are at least two further clear pieces of evidence for animal subjects: Fragment 563/10 depicts an area of feathers or scales, whilst 564/21 shows three toes of a paw with long, curved claws. These are in addition to those pieces noted above as depicting either hair or fur. Individual or near individual fragments of a range of other subjects also survive, including part of a tree branch (Find 563/1), a possible book clasp (Find 563/6), a possible portion of angel wing (Find 563/19, and two probable quarry fragments (Finds 563/12, /24). The relatively large number of small roundels (Finds 563/11, /15, /16, /25; Finds 564/1, /2, /3, /16), many in their original leads, are testimony, in addition to the sophisticated painting style of many of the excavated pieces from this area of the chapter house, to the high quality of the original glazing scheme.

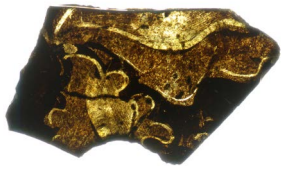
The condition of the glass from the vicinity of the chapter house's great east window is notably uniform. Although there are some pieces in an excellent, clear condition, they are mostly devitrified to opacity, but generally still hard with little surface pitting or corrosion; the paintwork survives well. In this, the glass has much in common with the remains associated with Bay 3, but contrasts with the (admittedly few) fragments found outside Bay 2.

Find 560

About 15 small pieces opaque glass, painted, many with beading design of chain of circles with dots at centre, between parallel lines; possibly from a halo rim or garment border.

Find 563

There are in addition more tiny fragments of wavy lines (fur, hair, and waves) and some simple bead designs not catalogued.



Illus. 3.7.31. White glass fragment, painted. Portion of finely painted foliage design (Find 563/1).

Figural

Facial

5. White(?) glass fragment, painted.
*c.*45 x 35 mm.
Partial face, probably representing an adult male, showing part of left eye, brow, cheek, and hairline or hat rim.
Accomplished use of washes, brush and stick work to create shadows and highlights in brown-tinted paint.
Glass now opaque but little surface pitting or corrosion.

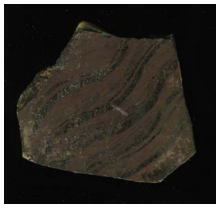


Illus. 3.7.32. White(?) glass fragment, painted. Partial face, probably representing an adult male (Find 563/5).

29. White glass fragment, painted.
*c.*40 x 35 mm.
Partial face, probably female, showing right eye and part of headdress, in brown-tinted paint.
Glass now opaque and with deposits to painted surface.

Hair

9. White(?) glass fragment, painted.
*c.*25 x 20 mm.
Series of flowing lines, probably depicting locks of hair.
Brown-tinted paint, finely applied in lines of various thickness.
Glass now opaque, but little surface pitting or corrosion.



Illus. 3.7.33. White(?)glass fragment, painted, possibly depicting fur or waves (Find 536/9).

23. White(?)glass fragment, painted.
*c.*25 x 30 mm.
Series of flowing lines, larger in scale than 563/9, possibly depicting hair or fur, or waves.
Brown-tinted paint, finely applied in lines of various thickness, and as paint wash; reverse retains signs of back-painting.
Glass now opaque, but little surface pitting or corrosion.

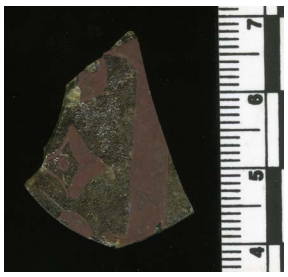
Drapery and garments

6. White glass fragment, painted.
*c.*35 x 35 mm.
Golden clasp alongside two buttons or studs, perhaps depicting part of a bound book or garment.
Brown-tinted paint and silver stain.
Very clear glass in excellent condition.



Illus. 3.7.34. White glass fragment, painted and stained, showing golden clasp alongside two buttons or studs, probably from a book or drapery fragment (Find 563/6).

17. White glass fragment, painted.
*c.*25 x 20 mm.
Portion of band(?) with diamond motif, perhaps intended to represent a jewelled garment hem or border.
Brown-tinted paint.
Glass now almost opaque but little surface pitting or corrosion.



Illus. 3.7.35. White glass fragment, painted. Portion of jewelled band or border with diamond motif (Find 563/17).

26. White(?) glass fragment, painted.
*c.*70 x 45 mm.
Portion of unknown, larger-scale subject, possibly drapery.
Very fine use of washes, and brush and stick work to create shadows and highlights in brown-tinted paint.
Glass now opaque, some deposits to exterior surface.

Nimbs

18. White glass fragment, painted.
*c.*25 x 30 mm.
Portion of curved band painted with ellipse motif, alongside triangular form painted with wavy lines; possibly intended to represent either a 'jewelled' halo and portion of hair, or 'jewelled' vesica surrounding a figure, with the triangular form representing part of a foot.
Brown-tinted paint.
Glass now opaque but little surface pitting or corrosion.

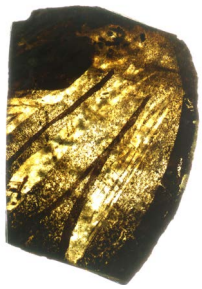
22. White(?) glass fragment, painted.
*c.*35 x 40 mm.
Section of curved band decorated with circular design, cusping to inner edge; probably part of a nimb or possibly a garment border.
Glass now opaque but little surface pitting or corrosion.



Illus. 3.7.36. White(?) glass fragment, painted. Section of decorated, curved band, possibly a partial nimb or garment border (Find 563/22).

Angelic

19. White glass fragment, painted.
*c.*35 x 25 mm.
Portion of feathered subject, possibly an angel's wing.
Accomplished use of washes, brush and stick work to create shadows and highlights in brown-tinted paint.
Slight corrosion of exterior surface, but glass generally in good condition.



Illus. 3.7.37. White glass fragment, painted with feathers, possibly an angel's wing (Find 563/19).

Animal-related

10. White(?) glass fragment, painted.
*c.*40 x 25 mm.
Pattern of feathers or scales.
Glass now opaque, but little surface pitting or corrosion.



Illus. 3.7.38. White(?) glass fragment, painted with feathers or scales (Find 563/10).

27. White glass fragment, painted.
*c.*30 x 30 mm.
Series of flowing lines, probably depicting hair or fur.
Brown-tinted paint, finely applied, skilful stick work creates highlights.
Glass now opaque; little surface pitting but glass friable.

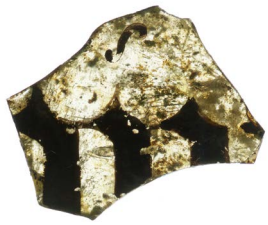
Inscriptions

2. White glass fragment, painted.
*c.*60 x 30 mm.
Portion of one letter of Gothic textura inscription, alongside a silver-stain decorative detail.
Possibly an 'a' or 'o' (S.B.).
Brown-tinted paint.
Very clear glass in excellent condition.



Illus. 3.7.39. White glass fragment, painted. Portion of Gothic textura inscription, with silver stain detail (Find 563/2).

3. White glass fragment, painted.
*c.*35 x 30 mm.
Portion of Gothic textura inscription.
The middle letter is an 'i' (S.B.).
Brown-tinted paint.
Very clear glass in excellent condition.



Illus. 3.7.40. White glass fragment, painted. Portion of Gothic textura inscription (Find 563/3).

8. White(?) glass fragment, painted.
*c.*45 x 55 mm.
Portion of Gothic textura inscription, followed by part of decorative terminal flourish.
'na'. This might possibly be the end of the word 'anima', perhaps forming part of an inscription seeking prayers for the donor, although this possibility must remain speculative (S.B.).
Glass now opaque but little surface pitting or corrosion.

13. White glass fragment, painted.
*c.*40 x 25 mm.
Portion of Gothic textura inscription.
Possibilities are 'mu', 'um', 'nu' and 'un' (S.B.).
Brown-tinted paint.
Glass has little pitting but external surface now opaque.



Illus. 3.7.41. White glass fragment, painted. Portion of Gothic textura inscription (Find 563/13).

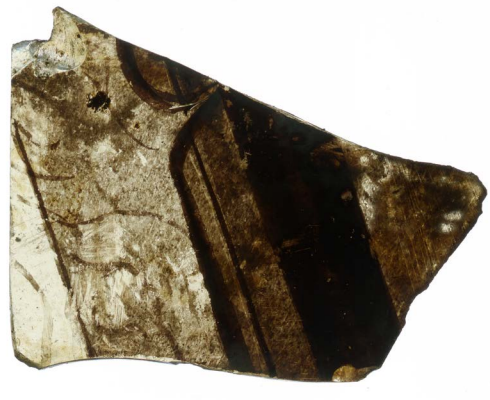
14. White glass fragment, painted.
*c.*30 x 25 mm.
Portion of Gothic textura inscription.
The second letter is probably a 'u' (S.B.).
Brown-tinted paint.
Glass has little pitting but external surface now opaque.

20. White(?) glass fragment, painted.
*c.*20 x 35 mm.
Portion of Gothic textura inscription.
This may read 'oe' (S.B.).
Brown-tinted paint.
Glass now opaque but little surface pitting or corrosion.

21. White(?) glass fragment, painted.
*c.*30 x 35 mm.
Portion of Gothic textura inscription.
The letter is a 'y' (S.B.).
Glass now opaque but little surface pitting or corrosion.

Architectural

1. White glass fragment, painted.
*c.*60 x 40 mm.
Portion of a tree or branch alongside possible architectural element, perhaps a window frame.
Brown-tinted paint, various tones, skilful brush and stick work, stipple shading.
Very clear glass in excellent condition.



Illus. 3.7.42. White glass fragment, painted. Portion of a tree or branch alongside possible architectural element (Find 563/1).

4. White glass fragment, painted.
*c.*45 x 30 mm.
Portion of architectural element, possibly decorative capital.
Brown-tinted paint, skilful use of washes and highlights, silver-stain detail.
Very clear glass in excellent condition.



Illus. 3.7.43. White glass fragment, painted and stained. Portion of architectural element, possibly a decorative capital (Find 563/4).

28. White glass fragment, painted.
*c.*35 x 25 mm.
Portion of lattice design in frame, possibly from a representation of a window.
Finely painted in brown tint, design picked out of wash in highlight.
Glass now opaque; little surface pitting but glass friable.

Decorative
Floor tiles

7. White glass fragment, painted.
*c.*40 x 30 mm.
Partial geometric or floral design within thick border, possibly representing part of a tiled floor.
Brown-tinted paint, brush and stick work to create shading and highlights.
Glass very clear but significant paint loss.



Illus. 3.7.44. White glass fragment, painted. Portion of finely-painted geometric or floral design within a border (Find 563/7).

Quarries

12. White(?) glass fragment, painted.
*c.*60 x 35 mm.
Part of a simple, crocketed 'finial', possibly from an architectural element or, more probably, part of a quarry (small diamond-shaped pane) as two of the fragment's edges appear to be original, grozed edges, and to form part of a diamond.
Many quarries of similar design survive from the fifteenth century.
Brown-tinted paint.
Glass now opaque, but little surface pitting or corrosion.



Illus. 3.7.45. White(?) glass fragment, painted. Simple, crocketed 'finial', probably a partial quarry motif (Find 563/12).

24. White glass fragment, painted.
*c.*30 x 10 mm.
Portion of abstract foliage? design on clear, unpainted ground; possibly part of a painted quarry.
Glass very clear, no pitting or corrosion.



Illus. 3.7.46. White glass fragment, painted. Portion of abstract foliage? (Find 563/24).

Technical Features, Drilling

11. White glass roundel, in original lead, painted.
*c.*10 mm diameter.
White border around central design of ellipse set inside circle, on background of light wash of paint. Possibly intended to represent a faceted jewel. The roundel was almost certainly set within a larger subject (perhaps a garment, crown, headdress, or background) as a decorative detail.
Brown-tinted paint.
Glass very clear and in excellent condition.



Illus. 3.7.47. White glass roundel, in original lead, painted. Possibly intended to represent a faceted jewel (Find 563/11).

15. White(?) glass roundel, in original lead, painted.
*c.*20 mm diameter.
Five-petalled floral design.
Brown-tinted paint.
Glass now opaque, but little surface pitting or corrosion.

16. White(?) glass roundel, in partial original lead, painted.
*c.*25 mm diameter.
Wavy-armed star or sunburst design.
Brown-tinted paint.
Glass now opaque, but little surface pitting or corrosion.

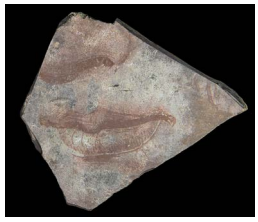


Illus. 3.7.48. White(?) glass roundel, in partial original lead, painted with a star or sunburst design (Find 563/16).

25. White(?) glass roundel, painted.
*c.*20 mm diameter.
Subject unintelligible.
Glass opaque, surfaces corroded.
Also:
One medieval? lead came, circular, diameter *c.*20 mm, probably originally holding a small roundel similar to Fragments 15 and 16, or 25.

Find 564
Figural
Facial

5. White glass fragment, painted.
*c.*30 x 30 mm.
Partial face, showing mouth and part of nose.
Brown-tinted paint, fine brushwork, skilful use of washes and stick work to create shadows and highlights. Very impressive.
Glass now opaque but little surface pitting or corrosion.



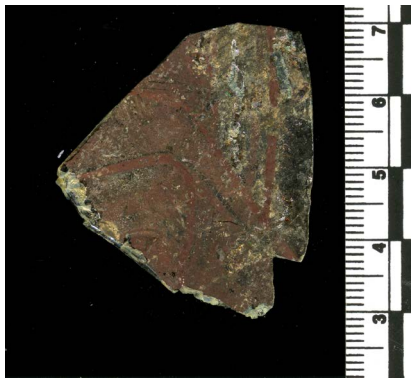
Illus. 3.7.49. White glass fragment, finely painted, partial face, showing nose and mouth (Find 564/5).

7. White glass fragment, painted.
*c.*10 x 25 mm.
Partial face, showing eye, eyebrow, and locks of hair.
Brown-tinted paint finely applied in brush strokes of varying thickness and as paint wash.
Glass very clear.



Illus. 3.7.50. White glass fragment, painted. Partial face, showing eye and locks of hair (Find 564/7).

12. White glass fragment, painted.
*c.*35 x 40 mm.
Partial face, probably female, showing left eye and part of headdress.
Finely painted in brown tint with lines of varying thickness, paint wash and highlights picked out of paint ground.
Glass now opaque.
Compare, in mirror-image, and poorer condition, Find 563/29.

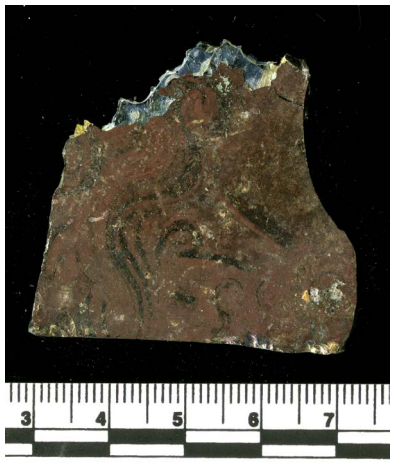


Illus. 3.7.51. White glass fragment, painted. Partial face, probably female, with headdress (Find 564/12).

13. White glass fragment, painted.
*c.*30 x 20 mm.
Possible partial face, showing right eye and part of cheek in brown-tinted paint.
Glass very clear.

Hair

18. White glass fragment, painted.
*c.*40 x 40 mm.
Portion of hair or fur, in curled locks.
Brown-tinted paint.
Glass now opaque and crumbling.



Illus. 3.7.52. White glass fragment, painted. Portion of hair or fur (Find 564/18).

Hands and Feet

6. White(?) glass fragment, painted.
*c.*30 x 15 mm.
Partial hand, showing tips of three fingers.
Brown-tinted paint in brush strokes of varying thickness and paint wash.
Glass now opaque but little surface pitting or corrosion.



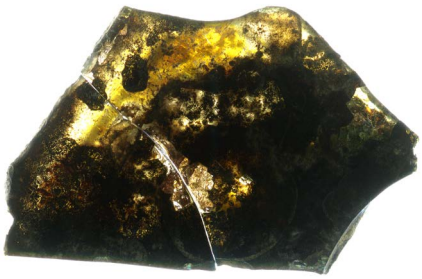
Illus. 3.7.53. White(?) glass fragment, painted. Partial hand, showing tips of three fingers (Find 564/6).

17. White glass fragment, painted.
*c.*35 x 25 mm.
Partial hand, showing tips of four fingers, possibly gloved, as no detailing of nails.
Brown-tinted paint.
Glass now opaque, iridescent on reverse, but little surface pitting or corrosion.

Drapery and Garments

22. White (?) glass fragment, painted.
*c.*60 x 30 mm.
Portion of gathered folds, possibly drapery.
Brown-tinted paint, skilfully applied in paint-lines of varying thickness and paint wash.
Glass now opaque but little surface pitting or corrosion.

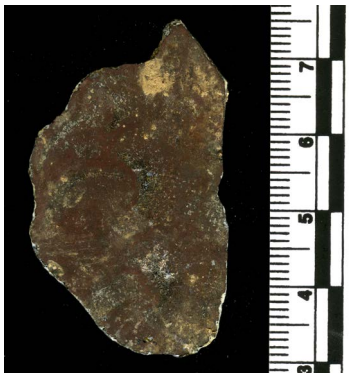
23 a, b. White glass fragments, originally conjoined, painted
*c.*40 x 30mm and *c.*30 x 25mm
Large jewel motif, comprising circular central gem encircled with smaller pearls
Brown-tinted paint, very skilfully applied in trace lines of varying thickness, paint wash, and stick work to create highlighted detail, with silver stain.
Glass now almost entirely opaque but little surface pitting or corrosion.



Illus. 3.7.54. White glass fragments, originally conjoined, painted with large jewel motif (Find 564/23 a, b).

Animal-related

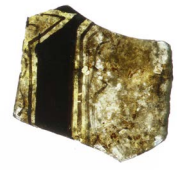
21. Glass fragment, painted.
*c.*35 x 30 mm.
Partial animal paw, showing three toes with long, curved claws.
Brown-tinted paint, very finely applied, using paint-lines of varying thickness, paint washes, and highlights picked out of wash.
Glass now opaque but little surface pitting or corrosion.



Illus. 3.7.55. Glass fragment, painted. Partial animal paw (Find 564/21).

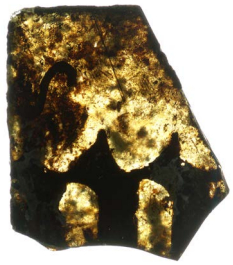
Inscriptions

9. White glass fragment, painted.
*c.*20 x 15 mm.
Portion of Gothic textura inscription.
This is part of a majuscule letter of high quality, with the main strokes bordered by thin lines. The letter itself could be a majuscule but which letter is represented is impossible to determine (S.B.).
Brown-tinted paint.
Glass very clear.



Illus. 3.7.56. White glass fragment, painted. Portion of Gothic textura inscription (Find 564/9).

10. White glass fragment, painted.
*c.*30 x 25 mm.
Portion of Gothic textura inscription.
The first letter has a riser with a bifurcated terminal, suggesting relatively high-quality work, perhaps of the late fifteenth or early sixteenth century. It is most likely a 'b'. The second letter may be a 'u' (S.B.).
Brown-tinted paint.
Glass quite clear, some deposits.



Illus. 3.7.57. White glass fragment, painted. Portion of Gothic textura inscription (Find 564/10).

14. White(?) glass fragment, painted.
*c.*30 x 35 mm.
Portion of inscription.
The majuscule letter may be an 'M' and is followed by an 'a'. It may be part of a name, such as Maria or Matthias. It could refer to a saint or a donor. The form of the majuscule letter suggests a Lombardic majuscule combined with quadrata minuscule, which would be quite advanced in the late fifteenth century, indicating high-status work (S.B.).
Brown-tinted paint and silver-stain decoration of illuminated letter.
Glass now opaque.



Illus. 3.7.58. White(?) glass fragment, painted. Portion of inscription with Lombardic majuscule? (Find 564/14).

Architectural

8. White glass fragment, painted.
*c.*25 x 30 mm.
Portion of lattice design in frame, possibly from a representation of a window.
Finely painted in brown tint and paint wash.
Glass very clear.



Illus. 3.7.59. White glass fragment, painted. Portion of lattice design in frame, possibly representing a window (Find 564/8).

11. White glass fragment, painted.
*c.*55 x 65 mm (now broken vertically in two).
Portion of lattice design with partial frame and drapery, probably from a representation of a window.
Finely painted in brown tint, with back-painting to frame and silver stain to drapery.
Glass very clear.



Illus. 3.7.60. White glass fragment (now broken), painted, showing portion of framed lattice design and drapery (Find 564/11).

15. White glass fragment, painted.
*c.*40 x 30 mm.
Partial window, showing light with cusped head, filled with lattice design, within frame.
Brown-tinted paint.
Glass almost opaque on interior surface.

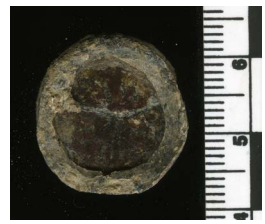
19. White(?) glass fragment, painted.
*c.*25 x 25 mm.
Partial window opening, showing part of light filled with lattice design.
Brown-tinted paint.
Glass now opaque, but little surface pitting or corrosion.

20. White glass fragment, painted.
*c.*25 x 10 mm.
Partial window light, filled with lattice design.
Brown-tinted paint, design picked out as highlight from painted ground.
Glass now opaque but little surface pitting or corrosion.

Technical Features

Drilling

1. White(?) glass roundel, in original lead, painted.
*c.*20 mm diameter.
Floral design in brown-tinted paint.
Glass now opaque, and devitrifying on reverse.



Illus. 3.7.61. White(?) glass roundel in original lead, painted with floral design (Find 564/1).

2. Glass roundel, in original lead.
*c.*15 mm diameter.
No painted design visible.
Glass now opaque and corroded on reverse.

3. White(?) glass roundel, in original lead, painted.
*c.*25 mm diameter.
Wavy-armed star or sunburst design.
Brown-tinted paint.
Glass now opaque, but little surface pitting or corrosion.

4. White(?) glass roundel, in partial original lead, painted.
*c.*25 mm diameter.
Wavy-armed star or sunburst design.
Brown-tinted paint.
Glass now opaque, but little surface pitting or corrosion.



Illus. 3.7.62. White(?) glass roundel in partial original lead, painted with star or sunburst (Find 564/4).

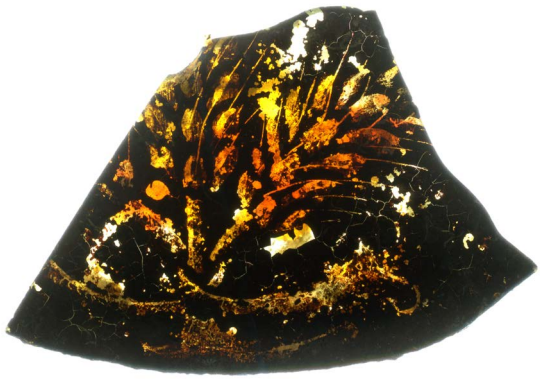
16. Glass roundel, painted.
*c.*20 mm diameter.
Wavy-armed star or sunburst design.
Brown-tinted paint.
Glass now opaque, but little surface pitting or corrosion.

Bays 5 and 6 (south side, eastern and middle windows)

A small quantity of glass was excavated in the vicinity of Bays 5 and 6; little more than a handful of fragments originate in Finds 715, 716, 721, and 723. They include, however, a fragment of some significance. Fragment 1 of Find 715 is painted with a wheatsheaf design apparently confirming the chapter house glazing as part of the artistic patronage of Abbot Wallingford, associated with just such a badge. In addition, one fragment from Find 716 is painted with a portion of lattice work comparable to a number of pieces relating to the adjacent Bay 4.

Find 715

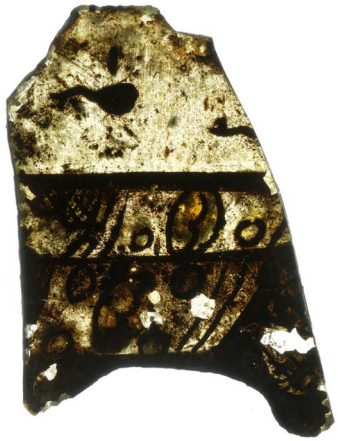
1. White glass fragment, painted.
*c.*55 x 60 mm.
Two ears of wheat, bound with ribbons; curved, grozed edge may suggest originally from a tracery light.
Brown-tinted paint, stick work and silver stain.
Some paint loss, deposits to exterior surface.



Illus. 3.7.63. White glass fragment, painted and stained. Two ears of wheat, bound with ribbons (Find 715/1).

2. White glass fragment, painted.
*c.*35 x 20 mm.
Portion of diaper design comprising diamonds surrounding pointed quatrefoils, probably representing floor tiles or wall hangings; comparable, although on a slightly larger scale, with Find 248/8 above.
Brown-tinted paint.
Glass almost opaque.

3. White glass fragment, painted.
*c.*65 x 35 mm.
Elaborate garment, probably a so-called 'oriental-style' hat, comprising jewel-painted crown and brim, with broad ermine trim; grozed, curved upper edge suggests fragment was leaded into a larger scene.
Brown-tinted paint and silver stain.
Slight paint loss.



Illus. 3.7.64. White glass fragment, painted and stained. Partial garment of clothing (Find 715/3).

Find 716

1. White glass fragment, painted.
*c.*30 x 25 mm.
Portion of lattice-work design, possibly belonging to a representation of a window opening.
Brown-tinted paint.
Dark-coloured opaque painted surface flaking to reveal green-tinged white glass.

Bay 7 (southside, westernmost window)

The remains potentially belonging to Bay 7 comprise a very small amount of glass, only a few pieces of which are intelligible, from Finds 281, 282, and 294.

Find 281
1. Glass fragment, painted.
*c.*45 x 35 mm.
Portion of diamond diaper, each diamond enlivened centrally with four-petalled floral motif
Brown-tinted paint.
Glass opaque, some pitting to exterior surface.

Find 282
1. White glass fragment, painted.
*c.*35 x 30 mm.
Portion of linear design following the pointed contours of the fragment; possibly the remains of a quarry.
Brown-tinted paint.
Glass now opaque but little surface pitting or corrosion.

Find 294
1. Glass roundel in original lead.
*c.*15 mm diameter.
Glass opaque and corroded.

Part II: glass from within the chapter house

During the 1978 excavations at St Albans, much more glass than that catalogued above from outside the chapter house, was discovered within the chapter house, some of it in excellent condition. This material is, however, more problematic. The presence of a lead-melting furnace in the centre of the chapter house floor raises the possibility that these glass fragments, if originating within the chapter house, are less closely associated with their original windows, and may include material from other parts of the claustral complex.

Nonetheless, there are numerous pieces worth cataloguing. The more major finds are noted first, followed by individual pieces of interest.

Finds 711 and 712

Find 711 comprises a major body of glass, while Find 712 is just a few fragments. Located just inside Bay 6, close to the bay's architectural remains, it is arguable that these remains can more probably be associated with the original glazing of this bay than glass discovered closer to the centre of the chapter house floor. There are also some similarities with aspects of the glass detailed in Part I, more firmly associated with the chapter house windows. Iconographically, there are, for example, fragments bearing a cross-hatched lattice design (Finds 711/5, /10, below), others with partial Gothic textura inscriptions (Finds 711/6, /13, /14), and a number of partial figural subjects (Finds 711/3, /11, /15, /16, /17). Although it is not possible to assess the style and date of these fragments fully, there are details, such as the evident skill with which some of the pieces were painted, both common to many of the fragments catalogued in Part I, and also consistent with a late fifteenth-century date. The find contains further evidence of high-quality glazing, including additional small-scale roundels (Finds 711/1, /2) as well as possible evidence of 'jewelling' (Finds 711/7, /8).

The condition of the glass now varies considerably more than that found outside the chapter house, catalogued above. This is perhaps evidence of glass from more than one source, potentially containing material from a mixture of locations. This is perhaps supported by the presence of a small number of fragments (Finds 711/12, 19, 20), painted in a noticeably less refined manner than many of the fragments associated with the chapter house glazing. However, it is by no means impossible that a single glazier might obtain his materials from more than one source. It is also suggested in the discussion, above, that more than one glazier may have worked on the chapter house glazing, offering one possible explanation for both the variety of painting styles and glass of differing conditions in evidence in Find 711. Find 711/Group 22 is particularly significant for the information it provides about the form of the inscriptions in at least some of the glazing.

Find 711
Figural
Facial
15. White glass fragment, painted.
*c.*45 x 25 mm.
Partial face, showing right eye, cheek, and part of nose.
Brown-tinted paint, finely applied, some washes and modelling.
Glass almost opaque, some corrosion.

Hands and Feet
3. White glass fragment, painted.
*c.*45 x 25 mm.
Partial foot, showing all five toes.
Brown-tinted paint, very skilfully applied in trace lines of varying thickness and paint washes, with highlights picked out.
Glass in very good condition, clear and free of pitting.



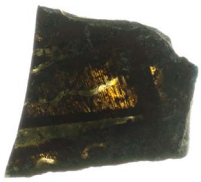
Illus. 3.7.65. White glass fragment, painted. Partial foot, showing all five toes (Find 711/3).

11. White glass fragment, painted.
*c.*40 x 15 mm.
Portion of small-scale subject, comprising three lobed objects, possibly representing toes, behind a narrow yellow band.
Brown-tinted paint, main trace lines relatively crudely worked, but use of wash with details picked out as highlights, and silver stain.
Glass in very good condition, clear and free from pitting.

17. White glass fragment, painted.
*c.*20 x 15 mm.
Partial hand or foot, showing three slender toes or fingers.
Brown-tinted paint, skilfully applied, details picked out of wash as highlight.
Glass in good condition, slight corrosion to reverse.

Nimbs

16. White glass fragment, painted.
*c.*25 x 20 mm.
Portion of subject comprising straight and wavy rays, possibly from a nimb.
Brown-tinted paint, subject picked out of wash as highlight.
Glass opaque but free of pitting or corrosion.



Illus. 3.7.66. White glass fragment, painted, showing possible portion of nimb (Find 711/16).

Inscriptions

6. White glass fragment, painted.
*c.*35 x 20 mm.
Partial Gothic textura inscription.
Three minims but impossible to be certain what letters they represent (S.B.).
Brown-tinted paint.
Glass in very good condition, clear and free of pitting.

13. White glass fragment, painted.
*c.*60 x 35 mm.
Portion of Gothic textura inscription.
This probably reads 'ret'. This is high-quality lettering (S.B.).
Brown-tinted paint.
Glass in good condition, slight pitting and corrosion .



Illus. 3.7.67. White glass fragment, painted. Portion of Gothic textura inscription (Find 711/13).

14. White glass fragment, painted.
*c.*35 x 40 mm.
Portion of Gothic textura inscription.
The first two letters are 'ee', perhaps followed by a 'n' (S.B.).
Brown-tinted paint.
Glass opaque but relatively free of pitting or corrosion.

22 a–c. White glass fragments, painted.
Ranging from *c.*30 x 20 mm to *c.*60 x 25 mm.
Portions of Gothic textura inscription(s).
All three fragments are from sections of text where the individual lines of text are separated one from another by horizontal lines, as can be seen clearly on fragment 711/22b. Fragment 711/22a may not belong with the other two as the curvature of the minim links is different. This piece may be an 'm'. 711/22b may be 'iv', 'ia', or something similar, but below the line the top part of a Lombardic majuscule

'H' is clear. On fragment 711/22c, the top section of a letter may be an 'o' while below is part of an 'e' or perhaps an 's'. All of this lettering is most likely to date from the very late fifteenth or early sixteenth century (S.B.).
Brown-tinted paint.
Glass in good, clear condition.

Architectural

10. White glass fragment, painted.
*c.*50 x 50 mm.
Two quatrefoil openings, filled with cross-hatch design, probably from an architectural element.
Brown-tinted paint.
Glass relatively clear on reverse, painted side opaque, little pitting or corrosion.

12. White glass fragment, painted.
*c.*55 x 20 mm.
Portion of small-scale scene, comprising round-headed light, highlighted in yellow, partial brown frame, and area of white glass painted perhaps to represent wood grain.
Brown-tinted paint, main trace lines, including possible wood grain, relatively crudely worked, but use of wash with details picked out as highlights, and silver stain, as above, Find 711/11.
Glass in very good condition, clear and free from pitting.

19. White glass fragment, painted.
*c.*50 x 30 mm.
Partial architectural subject, including crenellations.
Brown-tinted paint, relatively crudely applied.
Glass clear with some corrosion to both sides.

20. White glass fragment, painted.
*c.*25 x 30 mm.
Partial architectural subject, including crenellations, as above Fragment 20.
Brown-tinted paint.
Glass clear.

Decorative

4. White glass fragment, painted.
*c.*45 x 30 mm.
Partial quatrefoil(?) design and frame, possibly from an elaborate floor or back drop representation
Brown-tinted paint, finely applied.
Glass clear on reverse, painted side opaque, little pitting or corrosion.

5. White glass fragment, painted.
*c.*45 x 20 mm.
Partial cross-hatched design.
Brown-tinted paint.
Glass opaque but relatively free of pitting or corrosion.

9. White glass fragment, painted.
*c.*60 x 45 mm.
Partial quatrefoil(?) design and frame, possibly belonging to an elaborate floor or back drop, comparable with the smaller Fragment 711.4.
Brown-tinted paint, finely applied, trace lines of varying thickness, fine shading.
Glass clear on reverse, painted side opaque, little pitting or corrosion.



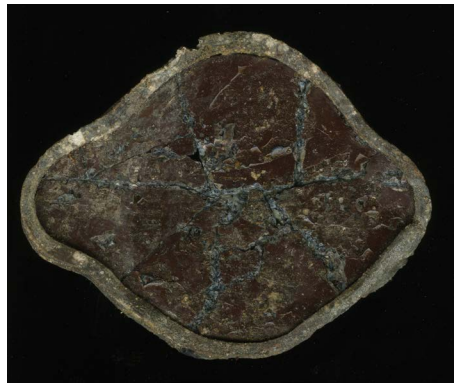
Illus. 3.7.68. White glass fragment, painted. Partial quatrefoil(?) design and frame (Find 711/9).

23. White glass fragment, painted.
*c.*35 x 30 mm.
Portion of diaper design comprising diamonds surrounding pointed quatrefoils, probably representing floor tiles or wall hangings; directly comparable with Find 248, Fragment 8.
Brown-tinted paint.
Glass almost opaque.

Technical Features

Drilling

1–2. Two lemon-shaped glass roundels, in original lead.
*c.*55 x 40 mm.
Subject, if any originally, unintelligible.
Glass opaque and one quarry heavily cracked.



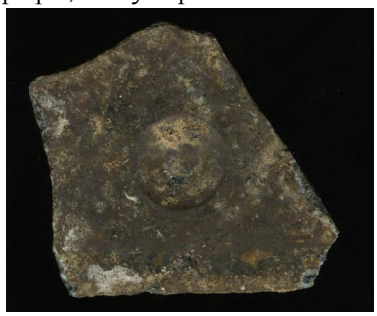
Illus. 3.7.69. Glass 'roundel' in original lead (Find 711/1).

Jewelling

7. Glass fragment.
*c.*40 x 25 mm.
Circular depressed 'scar', possibly evidence of 'jewelling', set between two painted lines, perhaps originally representing a jewelled garment border or headdress.
Brown-tinted paint.
Glass heavily corroded, opaque.

8. Glass fragment.
*c.*25 x 15 mm.
Circular depressed 'scar', as above.
Brown-tinted paint.
Glass heavily corroded, opaque.

21. Blue(?) glass fragment, painted.
*c.*35 x 35 mm.
Subject almost unintelligible, possibly foliage design within painted band, but fragment also bears circular depressed scar, perhaps evidence of 'jewelling'.
Brown-tinted paint.
Glass opaque, heavy deposits to exterior surface.



Illus. 3.7.70. Blue(?) glass fragment, painted with possible foliage design, with circular depressed scar (Find 711/21).

Miscellaneous

18. White glass fragment, painted.
*c.*40 x 45 mm.
Partial small-scale subject, possibly representing lightning bolts striking disturbed earth or waves.
Brown-tinted paint, skilfully applied, incorporating fine stick work and possible back-painting, and silver stain.
Glass in good condition.



Illus. 3.7.71. White glass fragment, painted and stained. Possibly representing lightening bolts striking disturbed earth or waves (Find 711/18).

Find 712

1. White glass fragment, painted.
*c.*85 x 60 mm.
Partial head, in profile, showing heavily-lidded eye, nose, mouth, and chin, wearing hat or headdress.
Red-brown tinted paint.
Glass almost entirely opaque, no pitting or corrosion.



Illus. 3.7.72. White glass fragment, painted, showing partial head, in profile, wearing hat or headdress (Find 712/1).

2. White glass fragment, painted.
*c.*55 x 45 mm.
Portion of Gothic textura inscription.
Parts of five minims, with the central section possibly reading 'bu' (S.B.).
Brown-tinted paint.
Glass in good, clear condition.

Find 576

Located some way inside the line of the chapter house's great east window, Find 576 comprises glass of exceptionally poor condition. Opaque, corroded, and very friable, it is, for the majority of pieces, impossible to detect which side may originally have been painted. A small number of pieces are evidently painted, but their subjects are for the most part entirely unintelligible. One small piece appears to be painted with radiating, straight lines, possibly representing rays of some kind. Another may depict fringing from a garment. There is one very small piece of the cross-hatched lattice design found throughout the material excavated from the chapter house. One fragment, detailed below, represents a partial Gothic textura inscription.

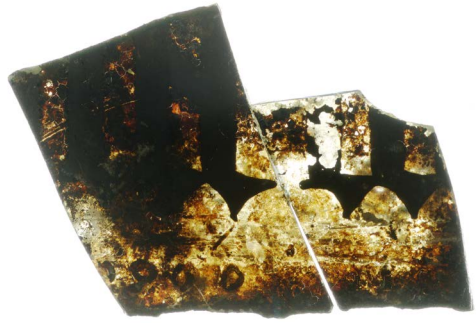
1. White glass fragment, now cracked in two, painted.
*c.*50 x 35 mm.
Portion of Gothic textura inscription, above band decorated with string of small painted circles.
The first word reads 'ia', perhaps the end of something like 'Maria' and the second word begins with a letter which might be 'i', 'm', 'n', or 'r' (S.B.).
Brown-tinted paint.
Glass almost entirely opaque, but little surface pitting or corrosion.

Find 229

This large quantity of glass, numbering many hundreds of fragments, was found on the south side of the chapter house, just west of Bay 7. It is not clear whether these remains belonged originally to the window that occupied Bay 7, or to an adjacent window on the east side of the dorter range, which abutted the chapter house at this point. The varied condition and stylistic features of the glass may suggest that the find contains material from more than one location.

Much of the glass belonging to the find is now badly corroded, with heavy deposits; both the colour of the glass and its original subject matter, therefore, largely unintelligible. One badly corroded fragment (Find 229/1), however, is evidently inscribed with a partial inscription in Lombardic script, indicating a date before *c.*1350 for at least some of the fragments. There are, in addition, a number of pieces which, whilst opaque, are essentially well-preserved – hard and free of pitting or corrosion, as found throughout Part I of the catalogue. Although mostly free of intelligible paintwork, the iconography of two pieces (Finds 229/20, /21 below) is clear. If they do belong to the original glazing of the chapter house, they contribute to an understanding of both its subject matter and technical accomplishment. Find 229/20, representing the corner of a room with a tiled floor, suggests competent depiction of three-dimensional space, whilst Find 229/21, depicting the partial head and face of a possibly monastic figure, perhaps indicates a degree of self-representation by the monastic community at St Albans.

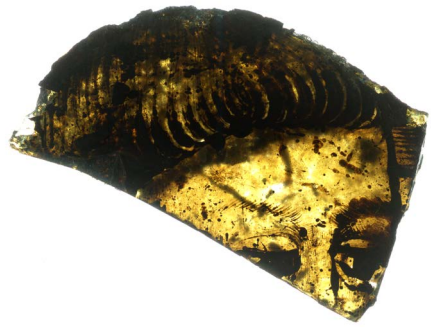
A small portion of glass from the find is in very good condition – the glass clear, the paintwork crisp and legible. Although for the most part decorative and architectural in nature, and therefore more difficult to date precisely than figural subjects, these well-preserved fragments are all consistent with a date in the fifteenth century. Few of the pieces are directly comparable with fragments detailed in Part I, which probably form part of the original glazing of the late fifteenth-century chapter house, although there is a fragment of Gothic textura inscription of comparable scale to those described above (Find 229/16), as well as two small fragments of a scaled or feathered subject (Finds 229/14, /15). It is perhaps also striking that Find 229, unlike the finds detailed above, contains a number of pieces of coloured glass (Finds 229/2–5, and /22, /23, /24). However, it is very likely that the chapter house glazing did include glass of various colours, and the apparent differences between some of the material in Find 229 and the finds in Part I from inside the chapter house may be the result of the very partial and fragmentary survival of glass from the chapter house, as well as its often relatively poor condition, to which coloured glass is often particularly easily reduced.



Illus. 3.7.73. White glass fragment, painted. Portion of Gothic textura inscription with string of circles (Find 576/1).

Figural
Facial

21. White glass fragment, painted.
*c.*60 x 30 mm.
Partial male head, in three-quarter profile, possibly tonsured, showing eyes and brows.
Brown-tinted paint, finely applied, some back-painting or silver stain.
Slight pitting, exterior surface opaque in parts.



Illus. 3.7.74. White glass fragment, painted. Partial male head, possibly tonsured (Find 229/21).

Hands and Feet

10. White glass fragment, painted.
*c.*45 x 30 mm.
Partial hand, possibly holding an inscribed book, emerging from wide-cuffed sleeve.
Brown-tinted paint and silver stain.
Deposits to both surfaces.



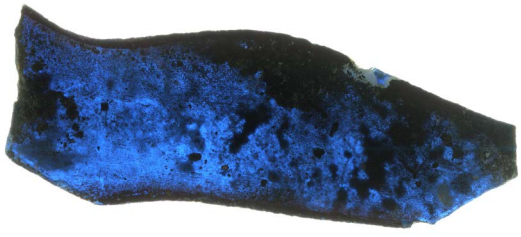
Illus. 3.7.75. White glass fragment, painted. Partial hand possibly holding an inscribed book (Find 229/10).

Garments and drapery

11. White glass fragment, painted.
*c.*35 x 20 mm.
Portion of ermine design, probably from a garment.
Brown-tinted paint.
Glass devitrified, some deposits.

22. Murrey glass fragment, painted.
*c.*55 x 40 mm.
Painted subject unintelligible; curved shapes of grozed edges may suggest drapery.
Brown-tinted paint.
Glass devitrifying, almost opaque with deposits to both surfaces.

23. Blue glass fragment, painted.
*c.*100 x 35 mm.
Painted lines and shading may suggest drapery folds.
Brown-tinted paint.
Some corrosion and deposits.



Illus. 3.7.76. Blue glass fragment, painted, lines and shading suggesting drapery (Find 229/23).

24. Blue-grey glass fragment, painted.
*c.*90 x 35 mm.
Painted lines and shading suggest drapery folds.
Brown-tinted paint.
Glass almost opaque but free of pitting and corrosion

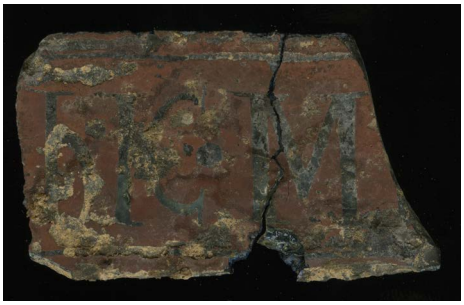
Animal-related

14. White glass fragment, painted.
*c.*25 x 15 mm.
Portion of feathered or scaled subject against partial architectural side-shaft.
Brown-tinted paint and wash, with stick work.
Glass in good condition.

15. White glass fragment, painted.
*c.*20 x 15 mm.
Portion of feathered or scaled subject.
Brown-tinted paint and wash, with stick work.
Glass in good condition.

Inscriptions

1. White or pale blue glass fragment, painted.
*c.*50 x 30 mm.
Partial inscription, Lombardic script.
It reads 'HIC M' and might be 'HIC MARIA', 'HIC MATHIAS' or something similar and thus be a label for a figure of a saint (S.B.).
Brown-tinted paint.
Glass corroded almost to opacity, deposits.
Pre-1350.



Illus. 3.7.77. White or pale blue glass, painted. Partial inscription in Lombardic script (Find 229/1).

16. White glass fragment, painted.
*c.*50 x 25 mm.
Partial Gothic textura inscription.
Two minims but it is impossible to be certain what letters they represent (S.B.).
Brown-tinted paint.
Some corrosion to both surfaces.

Architectural

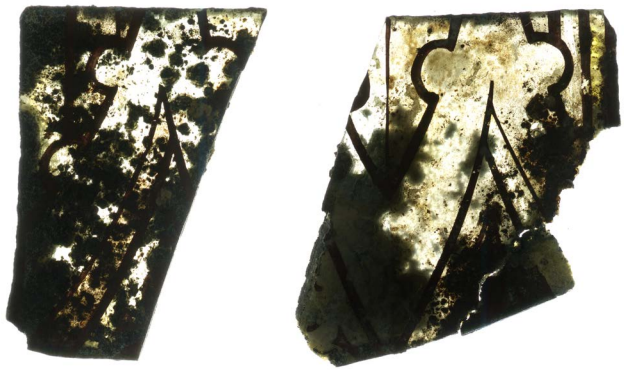
7. White glass fragment, painted.
*c.*65 x 20 mm.
Portion of elaborately cusped cornicing abutting partial crenellated architectural element.
Brown-tinted paint, highlights picked out of wash, and silver stain.
Glass in very good condition, as Fragments 6 a–l.



Illus. 3.7.78. White glass fragment, painted and stained. Portion of elaborately cusped cornicing and architectural element (Find 229/7).

8. White glass fragment, painted.
*c.*30 x 30 mm.
Portion of elaborately cusped cornicing, comparable in design to Find 229/7 above.
Brown-tinted paint, highlights picked out of wash, and silver stain.
Glass in very good condition, as Find 229/7.

12 a, b. White glass fragments, painted.
*c.*50 x 35 mm and *c.*50 x 40 mm.
Both fragments feature partial crocketed gables against further architectural elements, probably from one or more architectural canopies or side-shafts.
Brown-tinted paint.
Glass devitrifying, some deposits.



Illus. 3.7.79 (left) and Illus. 3.7.80 (right). White glass fragments, painted. Both show partial crocketed gables against further architectural elements (Finds 229/12 a, b).

13 a–i. White glass fragments, painted.
Ranging from *c.*50 x 40 mm to 25 x 20 mm.
Portions of architectural elements, some with crocketing, one with partial cross-hatch filled light.
Brown-tinted paint, paint wash, and silver stain.
Glass in generally good condition, one piece opaque on interior surface.

17 a, b. White glass fragments, painted.
*c.*50 x 35 mm and *c.*60 x 25 mm.
Portions of one or more architectural subjects, both fragments painted to resemble courses of brick work.
Brown-tinted paint and silver stain.
Corrosion and heavy deposits to glass.

26. White glass fragment, painted.
*c.*50 x 40 mm.
Partial architectural subject, partly decorated with an elaborately cusped, round-headed panel, and encircled floral motif.
Brown-tinted paint, very finely applied.
Some deposits to glass.

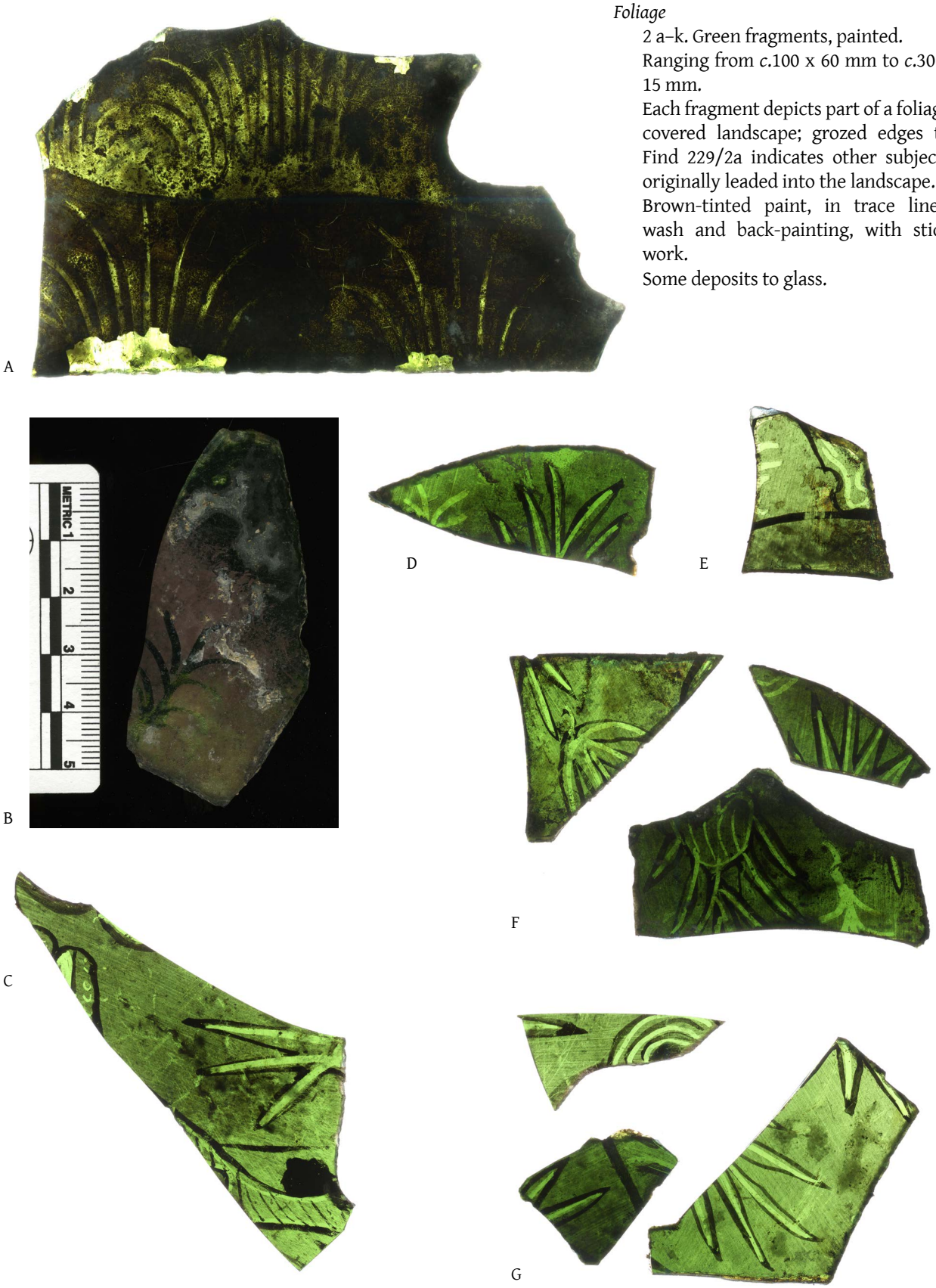


Illus. 3.7.81. White glass fragment, painted. Partial architectural subject, with cusped panel and floral motif (Find 229/26).

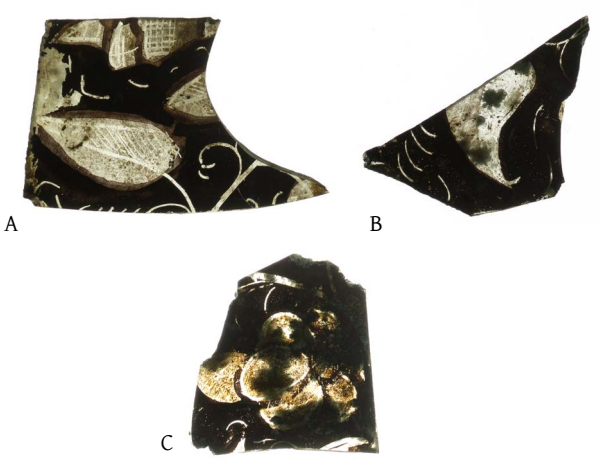
27. White glass fragment, painted.
*c.*20 x 20mm.
Portion of probable architectural element, decorated with encircled floral motif as Find 229/26 above.
Brown-tinted paint, very finely applied.
Some deposits to glass.

Foliage

2 a–k. Green fragments, painted.
Ranging from *c.*100 x 60 mm to *c.*30 x 15 mm.
Each fragment depicts part of a foliage covered landscape; grozed edges to Find 229/2a indicates other subjects originally leaded into the landscape.
Brown-tinted paint, in trace lines, wash and back-painting, with stick work.
Some deposits to glass.



Illus. 3.7.82A–G. A (fragment /2a), B (fragment /2b), C (fragment /2c), D (fragment /2d), E (fragment /2e), F (fragments /2f–h), G (fragments /2i–k). Green glass fragments, painted. Each shows part of a foliage covered landscape (Finds 229/2a-k).



Illus. 3.7.83A–C. A (fragment /9a), B (fragment /9b), C (fragment /9c). White glass fragments, painted. Portions of decorative, small-scale foliage subjects (Finds 229/9a-c).

9 a–c. White glass fragments, painted.
Ranging from *c.*40 x 25 mm to *c.*25 x 25 mm.
Portions of decorative, small-scale foliage subject.
Brown-tinted paint, paint wash and stick work, subject in relief against painted ground.
Some deposits, slight paint loss.

Decorative



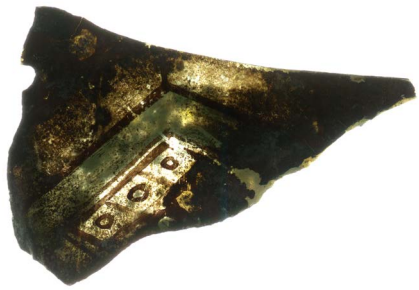
Illus. 3.7.84. White glass fragments, painted and stained. Depicting various aspects of a four-petalled floral motif (Finds 229/6a-l).

6 a–l. White glass fragments, painted.
Ranging from *c.*55 x 40 mm to *c.*25 x 10 mm.
Each fragment, probably not originally conjoined, depicts aspects of a four-petalled floral motif within a cusped quatrefoil.
Brown-tinted paint and silver stain.
Glass in very good condition.

18. White or pale blue glass fragment.
*c.*50 x 30 mm.
Partial trefoiled foliage design, apparent cement traces to two edges suggest border work.
Dark brown-tinted paint.
Deposits, heavy to exterior.
Possibly of similar date to Find 229/1, above.

19. White or pale blue glass fragment.
*c.*35 x 25 mm.
Portion of cusped or lobed design.
Dark brown-tinted paint.
Deposits to glass.
Possibly of similar date to Find 229/1, above.

20. White glass fragment, painted.
*c.*50 x 45 mm.
Portion of geometric design of circles within squares, set within a silver stain border, abutting two upright architectural elements, evidently depicting the corner of an interior floor and the base of two adjoining walls.
Brown-tinted paint in trace lines and wash, and silver stain.
Glass opaque in parts, silver stain mostly lost.



Illus. 3.7.85. White glass fragment, painted and stained. Probable representation of a corner of an interior floor (Find 229/20).

25. White glass fragment, painted.
*c.*35 x 20 mm.
Portion of decorative band, fern-like design picked out in needle work.
Brown-tinted paint.
Glass in good condition.

Coloured Glass

3. Murrey glass fragment, painted.
*c.*30 x 30 mm.
Partial design of two pairs of parallel lines, perhaps intended to represent drapery folds.
Brown-tinted paint.
Friable glass almost opaque, some deposits to exterior surface.

4. Blue glass fragment, painted.
*c.*35 x 30 mm.
Traces of paint wash, subject unintelligible.
Almost opaque, some deposits.

5. Flashed ruby glass fragment.
*c.*30 x 25 mm.
Some corrosion of flashed layer, slight depositing to both surfaces.

Find 248

The glass remains belonging to Find 248 were discovered almost exactly in the centre of the chapter house floor. Although relatively substantial in quantity, few of the fragments are in either good enough condition or large enough to allow comment on subject matter or style. Indeed, many of the pieces are now exceptionally small in size. However, the small number of pieces for which partial subjects can be identified are consistent with glass painting produced in the late fifteenth century, and some have features in common with the glass described in Part I above: the glass is white with silver-stain details, the brush work notably fine. The presence of a partial wheatsheaf (Find 248/6, below) – a badge associated with the probable patron of the chapter house glazing, Abbot Wallingford (see discussion) – is further evidence that the find almost certainly contains material original to the chapter house.

Figural

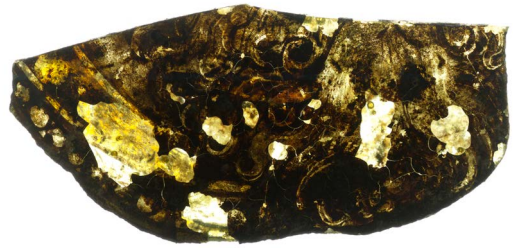
Facial

4. White glass fragment, painted.
*c.*35 x 40 mm.
Partial female face, showing right eye, brow, cheek, and hair.
Brown-tinted paint, very finely applied in trace lines and wash, with needle work.
Glass in good, clear condition.



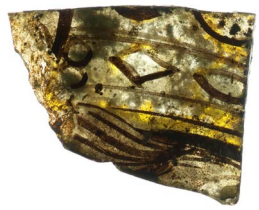
Illus. 3.7.86. White glass fragment, painted. Partial female face (Find 248/4).

7. White glass fragment, painted.
*c.*80 x 35 mm.
Partial angel or saint's head, comprising curled locks and partial nimb with pearl border.
Brown-tinted paint skilfully applied in trace lines and wash, with stick work and silver-stain detailing.
Losses to painted and stained surfaces.



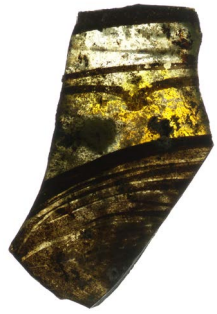
Illus. 3.7.87. White glass fragment, painted and stained. Partial angel or saint's head, with hair and nimb (Find 248/7).

9. White glass fragment, painted.
*c.*30 x 25 mm.
Partial king's head, comprising crown with cusped upper edge (just seem) and painted jewel detail, and hair at right temple.
Brown-tinted paint and silver stain.
Glass in good, clear condition.



Illus. 3.7.88. White glass fragment, painted and stained. Partial crowned head (Find 248/9).

10. White glass fragment, painted.
*c.*40 x 20 mm.
Portion of nimbed head, cusping to interior edge of nimb.
Brown-tinted paint in trace lines and wash, with silver-stain detail.



Illus. 3.7.89. White glass fragment, painted and stained. Portion of nimbed head (Find 248/10).

Garments and drapery

1. White glass fragment, painted.
*c.*30 x 20 mm.
Portion of silver-stain band painted with elaborate design of pearls encircling central jewel, adjoining subject unintelligible. Possibly a garment border.
Brown-tinted paint, skilfully applied; highlights picked out of wash on pearls, careful ray-like shading of adjoining subject.
Some deposits to glass.

Architectural

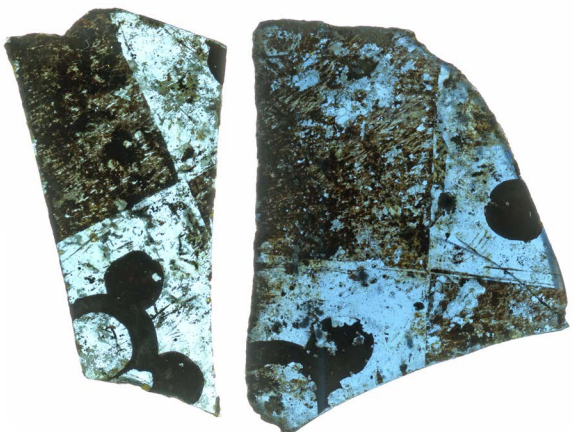
3. White glass fragment, painted.
*c.*45 x 40 mm.
Partial architectural element adjoining or incorporating decorative rosette motif.
Brown-tinted paint, in trace lines and wash and stipple shading, and silver stain.
Glass in good, clear condition.



Illus. 3.7.90. White glass fragment, painted and stained. Partial architectural element (Find 248/3).

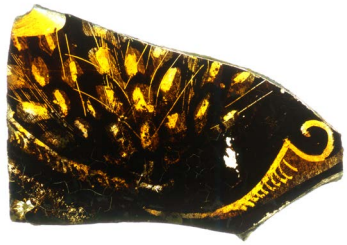
Decorative

5 a, b. Blue glass fragments, painted.
*c.*55 x 30 mm and *c.*50 x 40 mm.
Portions of comparable geometric design, possibly representing decorative floor tiles.
Brown-tinted paint.
Glass in good, clear condition.



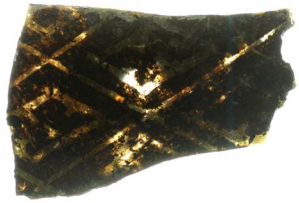
Illus. 3.7.91. Blue glass fragments, painted. Possibly representing decorative floor tiles (Finds 248/5a, b).

6. White glass fragment, painted.
*c.*45 x 30 mm.
Partial wheat sheaf or wheat ears, bound with ribbons.
Brown-tinted paint, with stick work and silver stain.
Glass in good, clear condition.
Compare with Find 715, Fragment 1, above.



Illus. 3.7.92. White glass fragment, painted and stained. Partial wheat sheaf or ears, bound with ribbons (Find 248/6).

8. White glass fragment, painted.
*c.*40 x 25 mm.
Portion of diaper design comprising diamonds surrounding pointed quatrefoils, probably representing floor tiles or wall hangings.
Brown-tinted paint.
Glass almost opaque, some surface loss.



Illus. 3.7.93. White glass fragment, painted. Portion of diaper design, possibly representing floor tiles or wall hangings (Find 248/8).

Miscellaneous

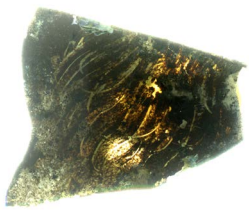
2. White glass fragment, painted.
*c.*40 x 30 mm.
Portion of linear subject, possibly a ladder.
Brown-tinted paint.
Some deposits.



Illus. 3.7.94. White glass fragment, painted. Partial linear subject, possibly a ladder (Find 248/2).

Find 241
Excavated close to the interior line of Bay 1, on the north side of the chapter house, Find 241 contains few intelligible fragments. In addition, however, to a number of tiny pieces possibly depicting portions of architectural elements, tiles and rays or hair, as common throughout the glass excavated from the chapter house, there are two larger fragments with interesting features.

(a)
1. White glass fragment, painted.
*c.*60 x 45 mm.
Partial subject comprising primarily of numerous pairs of wavy lines, corresponding with the way in which water and waves, or fur, were conventionally depicted in late medieval glass painting.
Brown-tinted paint with stick work.
Glass now opaque, some paint loss, and traces of cement along one edge.
(b)
2. White glass fragment, painted.
*c.*30 x 25 mm.
Portion of hair or fur.
Brown-tinted paint, exceptionally skilfully worked, subject picked out in needle work.
Deposits and some paint loss to exterior surface.



Illus. 3.7.95. White glass fragment, painted. Portion of hair or fur (Find 241/2).

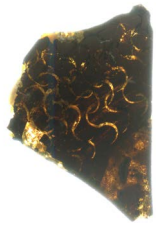
Finds 69B and 78
As Find 241, above, these small finds are located relatively close to the north wall of the chapter house, but west of Bay 1. They have much in common in terms of glass condition with much of the glass associated in Part I with the original chapter house glazing: hard, opaque but with visible paintwork. Almost none of the pieces, however, yield useful information in terms of iconography. One fragment from Find 78 appears to belong to a figural subject; another, from Find 69b, appears to be part of a tiled floor.

(a)
78.1. White glass fragment, painted.
*c.*35 x 40 mm.
Portion of jewel-painted band and possible fringing, perhaps from a garment.
Brown-tinted paint, with stick work.
Glass now opaque but not surface pitting or corrosion.

(b)
69B.1 White glass fragment, painted.
*c.*55 x 50 mm.
Portion of diamond chequerboard design, the white diamonds decorated centrally with small circles and with a painted border; probably representing a tiled floor.
Brown-tinted paint.
Glass opaque and devitrifying, but no corrosion or pitting.

Find 725
Among the handful of fragments comprising Find 725, excavated close to the interior wall of Bay 6 of the chapter house, one piece is painted with a design of interlocking C shapes, representative of the way in which mail was conventionally depicted in late medieval stained glass.

1. White glass fragment, painted.
*c.*25 x 20 mm.
Portion of design of interlocking C shapes, perhaps representing mail.
Brown-tinted paint, the design picked out as highlight.
Glass opaque, but no pitting or corrosion.



Illus. 3.7.96. White glass fragment, painted. Portion of possible mail (Find 725/1).

Find 65
The glass remains comprising Find 65 were found spread across the central western portion of the chapter house, and include two large pieces of interest. Mostly consistent with a late fifteenth-century date, they can possibly be associated with a west-facing window. One possible exception is Find 65/6, below. The glass is thicker and of a noticeably more blue tint than white glass associated with the original chapter house glazing, perhaps suggesting that this fragment comes from another location.

Figural

Facial

6. White glass fragment, painted.
*c.*55 x 45 mm.
Partial head, showing hair and portion of cheek, against white ground.
Brown-tinted paint in trace lines and wash, with stick work and silver stain.
Pitting and deposits, heavy to exterior surface.



Illus. 3.7.97. White glass fragment, painted and stained. Partial head, showing hair and cheek (Find 65/6)

Hands and Feet

3, 4. White glass fragments, painted, probably originally conjoined.
*c.*25 x 15 mm and *c.*10 x 10 mm.
Partial hand, showing tips, with nails, and partial lengths, with lines, of three fingers.
Brown-tinted paint, in trace lines and wash.
Glass in good, clear condition.

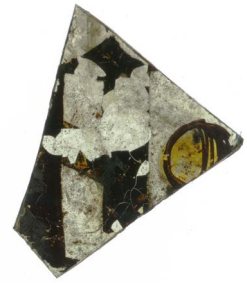


Illus. 3.7.98. White glass fragments, painted, originally conjoined. Partial hand (Finds 65/3, 65/4).

Inscriptions

5 a–f. White glass fragments, painted.
Ranging from *c.*65 x 25 mm to *c.*30 x 15 mm.
Portions of Gothic textura inscription; of larger scale than typically found in the chapter house remains.

The first letter of fragment 65/5a is probably an 'a' but what is represented by the minim following is impossible to say. 65/5b shows parts of four minims, impossible to interpret. 65/5c has parts of three minims, again impossible to interpret. Fragment 65/5 d reads 'eat' perhaps part of 'beata' or 'beatus'. 65/5, e has an indecipherable letter followed by 'ei'. 65/5, f has an 's' followed by a word separator (S.B.).
Brown-tinted paint.
Glass partially opaque.



Illus. 3.7.99. White glass fragment, painted and stained. Portion of large-scale Gothic textura inscription (Find 65/5f).

(fragment /5F)

Decorative

1. White glass fragment, painted.
*c.*60 x 45 mm.
Portion of white and silver-stain diamond diaper, decorated with small circles at the centre of each diamond, with silver-stain border, adjoining unintelligible subject; probably representing part of either a diamond quarried window or a tiled floor.
Brown-tinted paint and silver stain, skilfully applied to create shadow and highlights.
Slight paint loss and deposits to interior.

2. Blue(?) glass fragment, painted.
*c.*80 x 65 mm.
Stylized clouds interspersed with stars; grozing to curved detail on one edge perhaps suggests design encircled another subject, possibly figural, as common in fifteenth-century glass.
Brown-tinted paint and stick work.
Glass opaque and corroded.

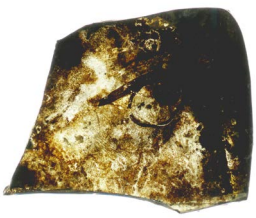
Find 341
Situated to the west of the chapter house's main bays, but close to the line of the south wall, it is difficult to estimate the original location of the glass in Find 341, which could be derived from a window in the dorter range to the south, but may come from any other part of the monastic buildings. A small number of fragments with intelligible subject matter, however, are consistent with a date in the late fifteenth century.

1, 2. White glass fragments, painted, originally conjoined.
*c.*80 x 25 mm in total.
Portion of Gothic textura inscription.
This probably reads 'Rams' (S.B.).
Brown-tinted paint.
Glass opaque but generally free from pitting or corrosion.



Illus. 3.7.100. White glass fragments, originally conjoined, painted. Portion of Gothic textura inscription (Finds 341/1, 341/2).

3. White glass fragment, painted.
*c.*35 x 25 mm.
Partial face, comprising right eye, cheek, and partial nose.
Brown-tinted paint, trace lines and wash.
Glass partially opaque but free of pitting or corrosion.



Illus. 3.7.101. White glass fragment, painted. Partial face, showing right eye, cheek and nose (Find 341/3)

4. White glass fragment, painted.
*c.*30 x 20 mm.
Portion of hair or fur.
Brown-tinted paint, skilfully applied in trace lines and wash, stick work and silver stain.
Glass in good, clear condition.



Illus. 3.7.102. White glass fragment, painted and stained. Portion of hair or fur (Find 341/4)

Find 579
Excavated from the north-east corner of the chapter house, tight against the point where Bays 3 and 4 meet, it is perhaps reasonable to believe that Find 579 includes material relating to the original glazing scheme. Indeed, one fragment is comparable with a piece probably originating in the great east window (Find 563/28).

1. White glass fragment, painted.
*c.*45 x 35 mm.
Portion of lattice design in frame, probably from a representation of a window.
Finely painted in brown tint, with back-painting, and silver stain.
Slight paint loss.

Find 583
Situated centrally in the eastern half of the chapter house, Find 583 is not easily associated with a particular bay or window, but within the find are two fragments that highlight the quality of the late medieval glass painting at St Albans Abbey, whatever its original location.

1. White glass fragment, painted.
*c.*50 x 25 mm.
Subject unintelligible, but technically very accomplished painting, incorporating paint in trace lines and wash, stick work, and very detailed back-painting to reinforce the interior paint.
Glass almost opaque.

2. Glass fragment.
*c.*35 x 25 mm.
No paintwork visible, but lobed flower or star-shaped depression on one surface may be traces of jewelling.
Glass opaque and devitrified.

Find 605
Located slightly east of Find 583, above, Find 605 contains a fragment of ermine design, of a 'tadpole' type directly comparable with that of a fragment from Find 715, perhaps reinforcing the suggestion made by this and other fragments of regal subjects within the chapter house glazing.

1. White glass fragment, painted.
*c.*25 x 20 mm.
Portion of ermine trim.
Brown-tinted paint.
Glass in good condition.

PART 3

8. SLIP-DECORATED AND PLAIN FLOOR TILES

by MARK HORTON

Some 663 slip-decorated and plain floor tiles were found during the excavation of the chapter house and the adjacent length of the east walk of the cloister. Some of these were *in situ* as patches in the chapter house floor where they repaired damaged areas of the relief-decorated tile (RDFT) floor; most were found either in features cutting into the chapter house, or in destruction levels above, associated with the robbing of the structure at the Dissolution. Plain tiles were found *in situ* along the cloister walk, as patches in the floor and loose in destruction levels.

Decorated and mosaic tiles: Groups A–H

About 240 decorated tiles and fragments were examined in 1979 and a typology drawn up based upon fabric type, size, and shape of the tiles, and by grouping the tile designs (Table 3.8.1). This method divides the tiles as far as possible into kiln or factory groups, where the tile-makers used similar clay sources and design stamps. The analysis is based upon notes taken at that time as well as more recent publications and research on floor tiles.

Group A. Derived Wessex tiles (late thirteenth century)

Seven tile fragments were found from four-tile designs. The tiles are 165 mm (6½ in.) square and 27 mm thick. The paste is dark red, with much flint, quartz, and mica temper, with a coarse fracture and slightly soft. The tiles have been cut to shape, with knife-cut edges and a very slight bevel. The slip decoration has been applied by the stamp-on-slip method[1] and glazed with a dark yellow glaze. A characteristic of this group is the large quantity of flint and the large size of the individual tiles.

A1. Four-tile design with floral and trefoliate leaves and quatrefoils, within zig-zag border (2 examples).

A2. Four-tile design fragment with foliage (1).

A3. Four-tile design, roundels and foliage (1).

A4. Quatrefoil, scored and cut as a triangular tile (1).

A5. Floral design, triangular tile (1).

A6. Pellets and fleur-de-lys (1). This fragment has a similar fabric to the rest of the group, with a very heavy flint temper, but stylistically seems to be a little different to the other examples.

A7. Repeating scroll on an oblong tile. This tile was recorded by the writer loose in the abbey but cannot now be located. See below for discussion.

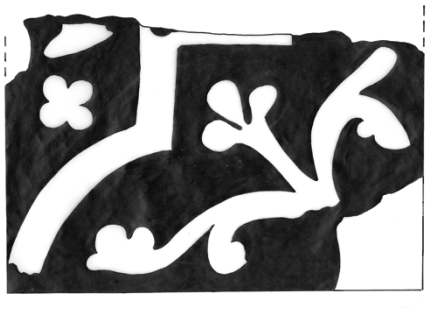
While seven fragments from six tiles were found from this group in the 1978 excavation, many more were found in the 1982–4 and 1994–5 excavations, as well as other examples stored loose in the abbey church, suggesting they were used extensively in the abbey buildings. One tile fragment from this group (Type A1) came from Final phase 23–4, datable to 1214–1300. Stylistically these tiles are similar to the earlier 'inlaid' tiles produced at Clarendon and for the chapter house at Westminster Abbey, both dating to the mid-thirteenth century.[2] Tiles in this Wessex style were also recorded from Buckinghamshire by Hohler, although none of his designs can be paralleled precisely at St Albans.[3] The Buckinghamshire tiles were apparently inlaid, like the Wessex tiles, while the St Albans tiles are all stamp-on-slip. The Wessex tiles proved a model for several tile industries that were emerging at the end of the thirteenth century using the cheaper slip-decoration technique.

The production site is not known, although a local source is most likely as these tiles are found only at St Albans Abbey. The inclusion of flint also suggests a local source. One of the oblong two-colour tile designs noted loose in the abbey (A7, Illus. 3.8.1) appears to reflect the pattern found on the oblong relief-decorated tiles (RDFT) of Type F and this reinforces the possibility of a local connection.

[1] Drury and Pratt 1975, 139–40.

[2] BM Cat, 163–4.

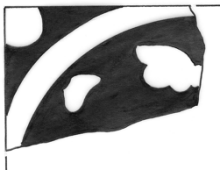
[3] Hohler 1941–2, 3–5.



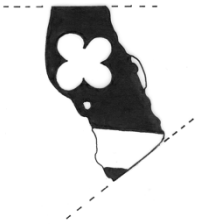
A1



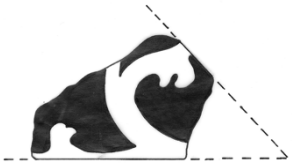
A2



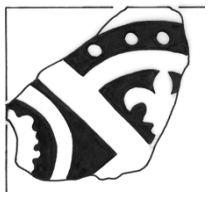
A3



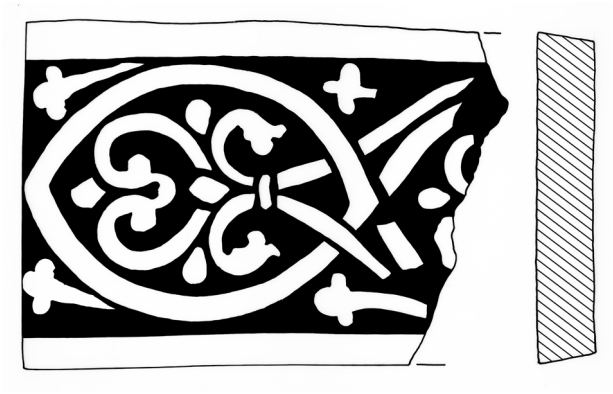
A4



A5



A6



A7

Illus. 3.8.1. Group A: Derived Wessex tiles (1:3).

Group B. St Albans Group (late thirteenth century)

Twenty tile fragments of this group were found. Light maroon-red paste, slightly striated, with a fine sandy temper; the tiles have been fired well and a high proportion have a grey core. The tiles come in a variety of sizes, 116 mm (4½ in.), 130 mm (5 in.), and 194 mm (7½ in.) square, and 22 to 24 mm thick, with a slight or medium bevel and a sandy base. The slip decoration is applied using the slip-over-impression method, and the tiles are glazed with either a yellow or an apple green/yellow glaze. The designs are drawn from a variety of sources including the Wessex series, but also contain an unusual range of animal scenes contained within a border.

B1. Four-tile 'tree of life' design (6).

B2. Unclear design within a frame. Other examples loose in the abbey include a lion, griffin, and monster face (2).

B3. Hunting scene in two panels within a frame (1).

B4. Single/four-tile design with Royal Arms of England, with animal face in corner (5).

B5–B10. Fragments (6).

Many more examples of this group were found in the later excavations, and also loose in the abbey. The only other site where they are known is Sopwell Priory, on the outskirts of St Albans.[4] They may be a continuation of the Group A productions, with some Wessex influences, especially B1 and B4. The portrayal of animals is also found on some of the Wessex inlaid tiles, although rarely within borders. This particular group may in turn have led on to the Hertfordshire Group with its rather crude animal tiles,[5] but significantly these are not represented in the St Albans Abbey or Sopwell assemblages, although examples are recorded in the collections of the British Museum.[6]

Group C. Mosaic and associated two-colour tiles (early fourteenth century)

This is a diverse group of tile shapes, representing parts of mosaic pavements, which include square and oblong tiles, as well as special mosaic pieces, and some two-colour designs.

The tiles can be recognized by their non-standard sizes and shapes and the brownish glazes, often covering the whole tile. There are two similar but distinct fabric groups:

a. Fine orange-red paste that can fire to a pale buff, especially on the underside, often oxidizing more orange on the top surface. The tiles are well fired with little visible temper, mostly fine quartz with some white chert pieces.

b. A pink-red paste with streaks of cream and lighter pink clay, lumps of fired clay, some quartz, and moderate quantities of flint.

The bases are un-sanded and the glaze brown or yellow in colour; some pieces are slipped. In some cases the tiles have been dipped into the glaze solution so that they are completely covered in glaze rather than just the upper surface. There is normally only a very small bevel. The tiles are around 22 mm thick.

C1–C5: two-colour tiles (all in Fabric Group a)

These are stamp-on-slip tiles, with a dark yellow glaze (9 tiles or fragments).

C1. Small square tile with quatrefoil, often scored diagonally and found as triangular tile; 76 mm (3 in.) square, and unusually thick at 30 mm (1).

C2. Square tile, with frame, roundel, and floral device; 76 mm (3 in.) square (1).

C3. Lozenge tile (i.e. with angles of 60 and 120 degrees) with a possible face (1).

C4. Lozenge tile with animal (1).

C5. Lozenge tile with a lion's leg and foot (5).

C6–C19: mosaic tiles (in Fabric Groups a and b). For small square 'mosaic' tiles in the Anglo-Saxon series (ASGT), see Illus 3.2.1–3.2.9.

These are all have a green-brown glaze; some are slipped, and in Fabric Group a. They have been shaped using a knife, but also scored and snapped to make smaller shapes (18 tiles or fragments + 23 from later excavations and in the abbey).

C6. Oblong tile, T. 588 in repair to pavement, missing, drawing reconstructed.

C7. Lozenge-shaped tiles, yellow, half unglazed and part of?quatrefoil unglazed. Knife-cut into shape, but then scored and snapped. Original tile 125 by 150 mm, but snapped into 62 by 150 mm. Thickness 23 mm (8 + 2 from 1982–4).

C8. Fragment of small lozenge, 28 mm wide and 16 mm thick, possibly formed by snapping C7 into four, rather than two (1).

C9. Small lozenge, formed by snapping C7 into four (66 by 75 mm; 22 mm thick) (1 + 8 from later seasons).

C10. Triangular tiles (i.e. with angles of 45 and 90 degrees), formed by snapping a 120 mm square (26 mm thick) tile into eight segments (0 + 1 from 1982–4).

C11. Oblong tile,?150 by 73 mm; 22 mm thick (0 + 4 from 1982–4).

[4] Johnson 2006, nos 3–16.
[5] Hohler 1941–2, 26; BM Cat, 183–4.
[6] BM Cat nos 120–40.

C12. Lozenge tile, knife-shaped, with a possible nail hole in one corner, and a second possible nail hole part-way down one side; 106 by 125 mm; 27 mm thick (0 + 4 from 1982–4).

C13. Lozenge tile, 30 mm thick. Formed by snapping a C7 tile into four (1).

C14. Oblong tile, 80 by 42 mm, with a thickness of 23 mm (1).

C15. Fragment of a triangular tile with a thickness of 29 mm (1).

C16. Square tile, 95 mm square and 24 mm thick (2).

C17. Square tile, 81 mm square and 21 mm thick (1 + 2 from 1982–4).

C18. Knife-cut piece of 'special mosaic', with reverse curves. The one piece from the chapter house would fit to a mosaic petal, of which an example (28 mm thick) was found loose in the abbey (illustrated for comparison) (1 + 1 from the abbey).

C19. Fragment of curving tile from the 1994–5 excavations (Tr. 13, Layer 368, F. 2703, medieval).

C: not illustrated: plain square tiles (Fabric Group b)

Plain tiles, 95 mm (3¾ in.) square by 24 mm thick (and thus very similar to C16 above), whose characteristic is the bottle-green glaze, which is thick with many drips. The whole tile, unusually, has been dipped in the glaze solution (rather than the glaze being applied to the surface) so the glaze covers the entire tile, upper surface, sides, and underside. No slip was employed (1 tile and 42 fragments).

Group C tiles, several more of which were found in the excavations of 1994–5 (Trenches 9–13), represent the use of mosaic paving in some area or areas of the abbey. Mosaic elements using rectilinear and geometric patterns are quite common in medieval pavements from the late thirteenth century onwards.[7] However, judging from the single piece C18 (and the linked fragment from inside the abbey), a very specific type of pavement, knows as sectional or pseudo-mosaic,[8] was employed at St Albans. Group C comprises fragments from such a pavement or pavements, which included the use of a range of triangular and lozenge-shaped plain tiles, as well as curvilinear shapes, together with a small number of two-colour triangular tiles.[9] The fact that the group appears to employ two fabrics, suggests that it had access to different sources of clay, while the tiles themselves are connected in their dimensions, use of glaze dipping, and overall appearance.

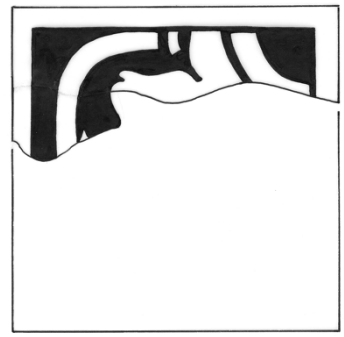
The use of sectional tile pavements occurs in a belt between Hertfordshire and East Anglia and some 28 sites are currently known,[10] as well as in the north-west of England.[11] The most famous intact pavement is at Prior Crauden's Chapel, Ely, where it is probably datable to 1324–5 when the chapel was completed.[12] The most widely studied are the two pavements at Old Warden Abbey, 25 miles north of St Albans, which were recovered by excavation in the 1970s.[13] The Old Warden pavements are of particular importance as the finds included kiln wasters, suggesting that the tiles were made on site. It has been suggested that this industry was based around itinerant tilers working for major abbeys, but also supplying nearby churches.[14] One such survival may be the pavement at Meesden church, 30 miles north-east of Albans, the tiles of which were likely supplied from the Old Warden kilns.[15] The possibility that these tile-makers also set up a kiln in St Albans is suggested by the presence of similar mosaic tiles at Sopwell Priory where they may have been used in the floor of the Period 2 church, dating from after 1300.[16]

One difference between the Ely and Old Warden pavements and the St Albans Group C (both from the abbey and Sopwell) is the absence from the latter of line-impressed decoration, using either stamps or free-hand decoration. Two-colour designs are very rarely used in the Ely and Old Warden pavements, although some are found along the edge of the Ely pavement. The St Albans Group C stands out as using two-colour tiles in the mosaic, but not line-impressed decoration, and so may be a little earlier in date than the Ely and Old Warden pavements. St Albans is also at the extreme south-western end of the distribution and so may be related to, but not part of, the classic line-impressed mosaic pavements.[17] The dating of these tiles has been discussed elsewhere, but generally falls within the first part of the fourteenth century.[18] The St Albans tiles are probably at the earlier end of this range.

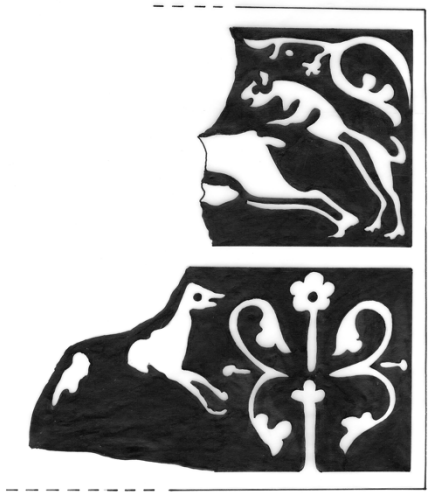
[7] BM Cat, 72–81; Norton and Horton 1978; Norton 1986b; Horton 1988.
[8] Baker 1987; Eames 1975; BM Cat, 48–50.
[9] A further lozenge-shaped mosaic tile from the abbey is now in the British Museum: BM Cat, no. 1068, 315.
[10] Keen and Thackray 1974.
[11] Greene 2004.
[12] Keen 1970, 79.
[13] Baker 1987.
[14] Baker 1987; Greene 2004, 143.
[15] Keen 1970, 79.
[16] Johnson 2006, 43–6.
[17] Keen and Thackray 1974, Fig. 50.
[18] Greene 2004; BM Cat, 91.



B1



B2



B3



B4



B5



B6



B7



B8

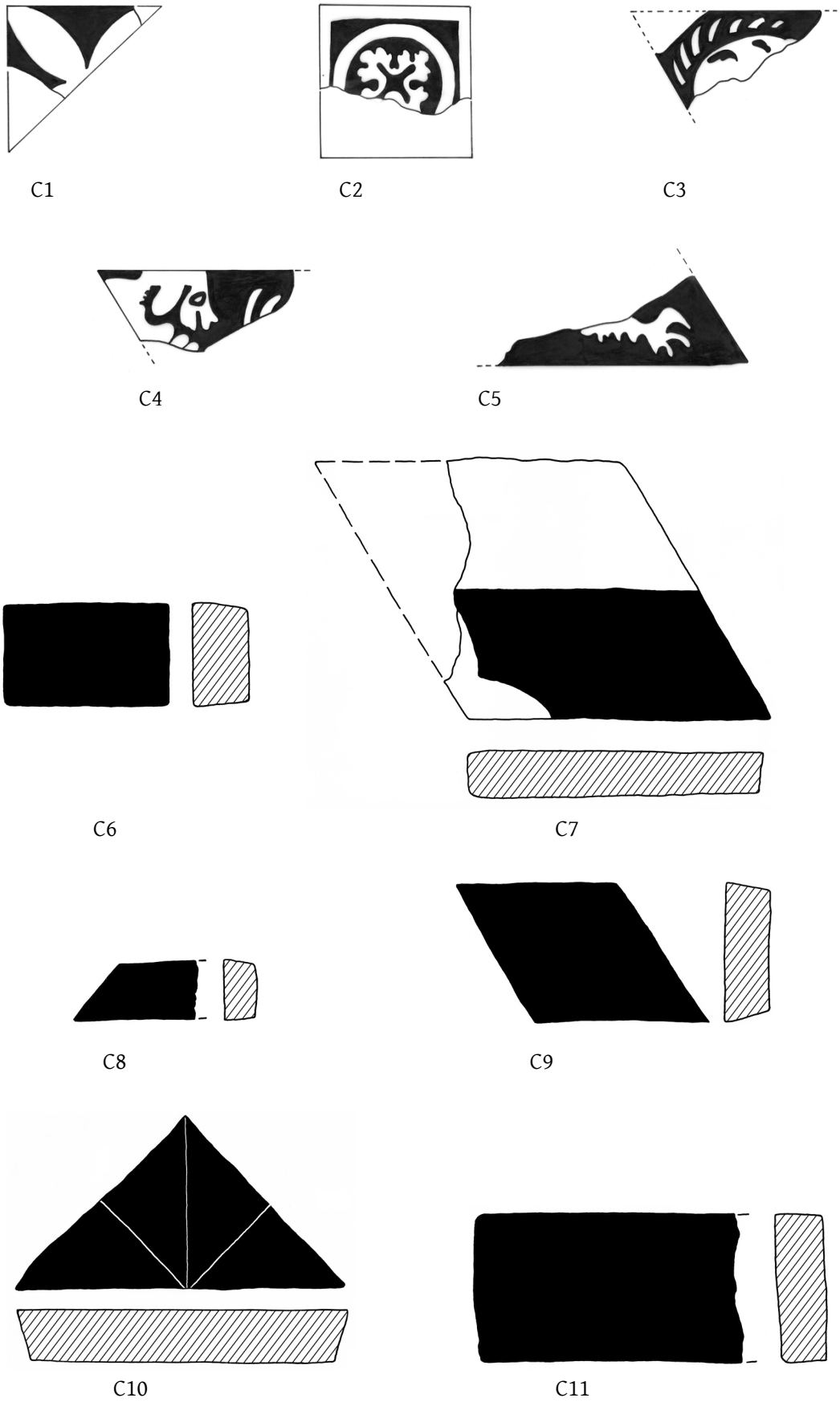


B9

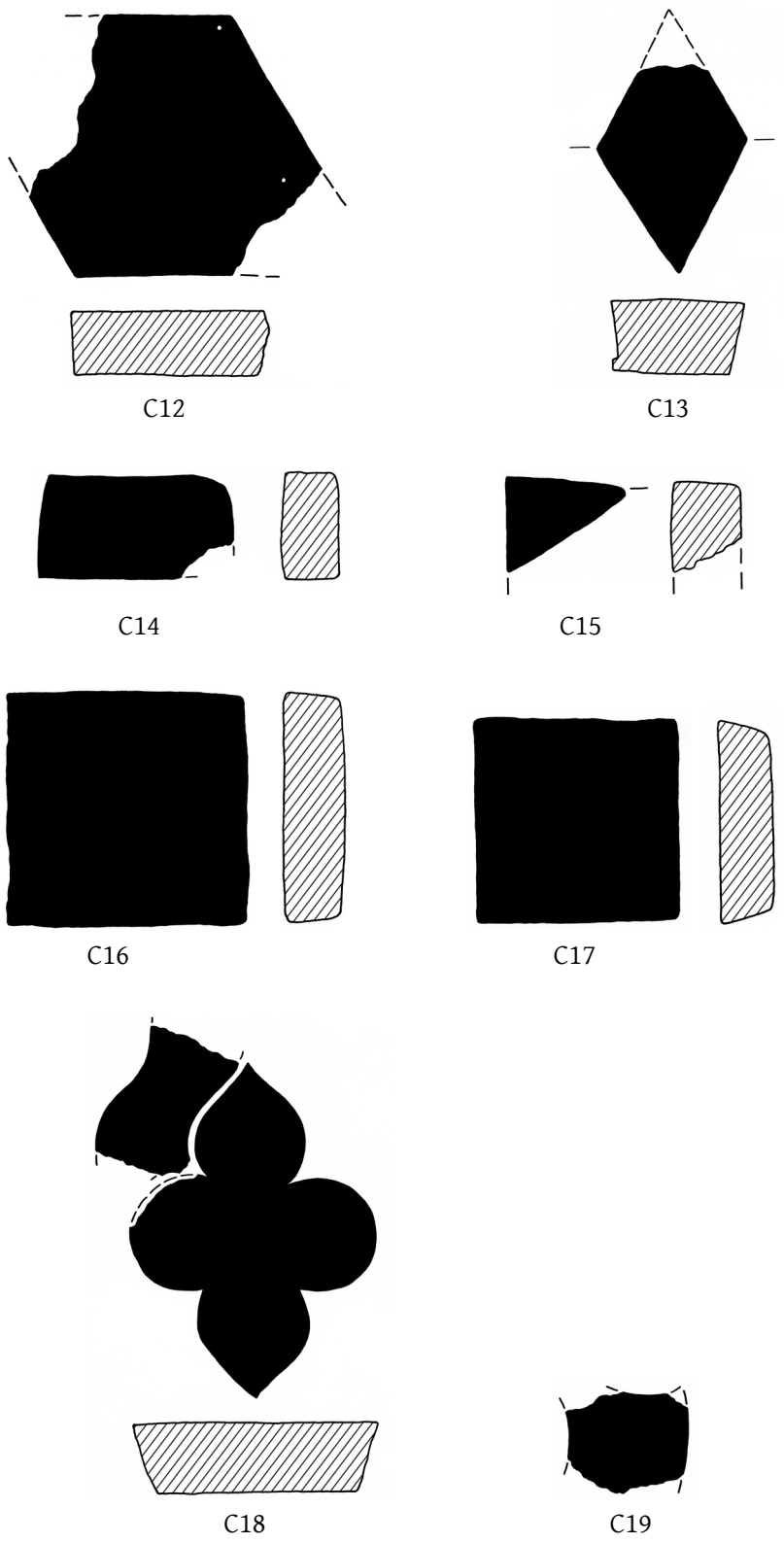


B10

Illus. 3.8.2. Group B: St Albans tiles (1:3).



Illus. 3.8.3. Group C: two-colour (C1–5) and mosaic (C6–11) tiles (1:3).



Illus. 3.8.4. Group C: mosaic tiles, C12–19 (1:3).

Group D. Penn tiles (mid-fourteenth century)

Eighty-two tiles and fragments of this group were found. These tiles represent the beginning of mass production, most probably around the Buckinghamshire village of Penn where a number of kilns have been found.[19]

They are square tiles, 114–116 mm (4½ in.) square and 26 mm thick. The tiles have a bright red paste, fairly hard fired, with a well-sorted sand temper, and a slightly striated fracture, but are generally well-made. The slip decoration is applied using the slip-over-impression method, although this is sometimes difficult to make out as many of the tiles are very worn. Glazes are yellow or dark yellow. In addition to the decorated tiles there were significant numbers of undecorated tiles. These had either:

a. Slip coat and yellow glaze.

b. Clear yellow glaze on the red body.

c. Green/pale brown glaze on slipped body.

d. Dark brown glaze on the red body.

The decorated tiles included some 13 designs or fragments, many of which are well known designs previously published by Hohler from several kilns producing tiles in the region of Penn.[20]

D1. Single tile showing four lions heads in cusped roundel (4).

D2. Continuous design with four five-leafed plants (Hohler P82, but not exact) (12).

D3. Four-tile design with double roundel, fretwork in centre, and face in outer corner (Hohler P152 and 153, variant) (27).

D4. Single tile (Hohler P86, but not exact) (12).

D5. Four-tile design, with opposed hares, and two?chickens, set within roundels (Hohler P128, but variant) (6).

D6. Four-tile design with interlace foliage and face in corner (Hohler P115) (2).

D7. Single tile, diagonal square with foliage (Hohler P88 variant) (3).

D8. Continuous design, with fleur-de-lys within intersecting roundels (Hohler P54) (6).

D9. Continuous design with intersecting fretwork and fleur-de-lys (Hohler P105) (1).

D10. Fragment of four-tile design (possibly a variant of Hohler P138) (1).

D11. Fragment, possibly with fleur-de-lys (possibly from Hohler P51) (1).

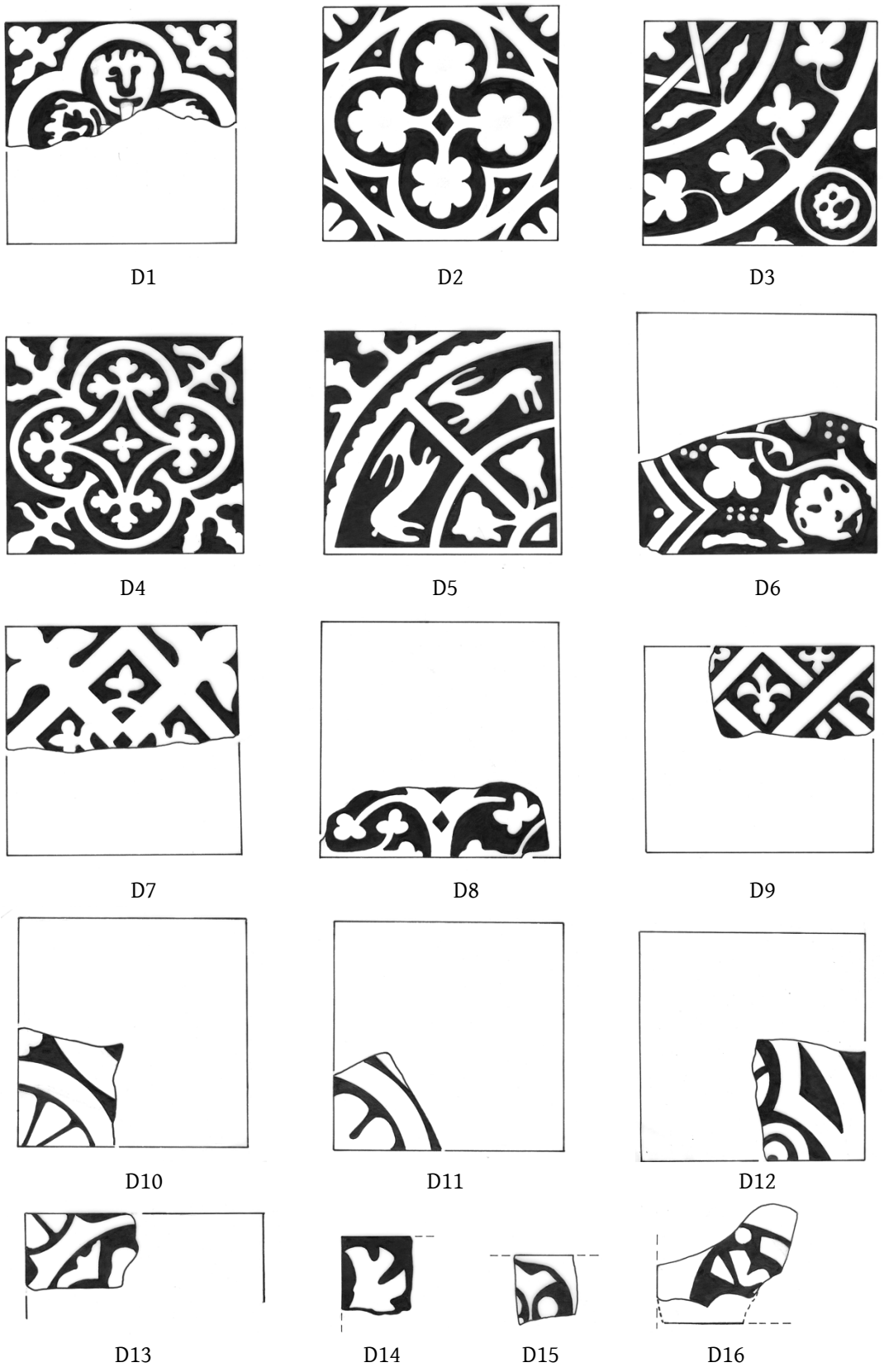
D12. Fragment of four-tile design showing winged beast in cusped roundel (Hohler P121) (1).

D13. Fragment of four-tile design (Hohler P138) (2).

D14–16. Fragments (4).

These Penn tiles belong to the classic group of 'printed tiles', although this term is no longer preferred by tile specialists following the excavations of the Danbury kiln in Essex, where slip decoration was divided into the 'stamp-on-slip' and 'slip-over-impression' methods.[21] The Penn tiles represent a shift to centralized mass production, close to clay sources and with good transport links, and probably extending not just to the area around the village of Penn but also to the surrounding area. The dating of these tiles is largely based on documentary evidence as they were used extensively in royal works at Windsor, London, and the manor of Sheen (Richmond). Hohler collected together the main references, summarized by Eames, spanning the years 1344 to 1388.[22] The earliest mention of tile-makers at Penn comes from the Subsidy Roll for Taplow and Penn in 1332, with mention of Henry Tyler, Symon the Pavyer, and John the Tyler.[23] These better tiles from St Albans probably date to the earlier part of the series, although precise dating is lacking.

[19] Drury 1981.
[20] Hohler 1941–2, 29–41.
[21] Drury and Pratt 1975, 138–40.
[22] Hohler 1941–2; BM Cat, 220–3.
[23] BM Cat, 222.



Illus. 3.8.5. Group D: Penn tiles (1:3).

Group E. 'Dieppe Group' (late fourteenth or early fifteenth century)

Thirteen fragments of this group were found. They have a pale brown/orange homogenous paste with grog or spots of darker clay and a fine well-sorted sand temper; the tiles are well fired with a hard and smooth fracture. The tiles are around 104 mm (4 in.) square and 19 mm thick and have a slight bevel with an un-sanded or very slightly sanded base. The slip has been applied using the slip-over-impression method and is quite often smudged. The yellow glaze over the orange paste gives the tile a bright orange colour to the body, and a rich yellow tint to the slipped areas. Overall these are very distinct tiles, both in their small size and their surface colour. This group has been published by Christopher Norton, who was able to include the St Albans tiles in his catalogue.[24]

E1. Continuous design with interlacing lines and central and corner petal (Norton 15) (3).

E2. Fleur-de-lys in flower, with central stem, part of four-tile design (Norton 20) (3).

E3. Intersecting tracery; part of four-tile design. (Norton 38 or 39) (2).

E4. Part of four-tile design with central flower in pelleted roundel (Norton 42) (1).

E5. Central tile in sixteen-tile design, with central bird perched on section of arcade (cf. Norton 56, but the drawing here is improved) (3).

E6. Central tile in sixteen-tile design, with arcading and pellets and branching flower (Norton 60) (1).

This group of tiles has often been referred to as the 'Lewes' Group, since they were first recorded from Lewes Priory in Sussex in the 1840s and were thought to have been made nearby.[25] Since the 1990s it has been established that they are a rare, but very interesting example of the trade in medieval decorated floor tiles from northern France during the late fourteenth or very early fifteenth century. Christopher Norton was able to draw all the evidence together and published a distribution map that showed a concentration around Dieppe, extending south to Rouen and north to Abbeville, with a largely coastal and riverine distribution in England around Hampshire, Sussex, and Kent, with examples also found in London and Oxford, and further afield at York, Dublin, and Drogheda.[26]

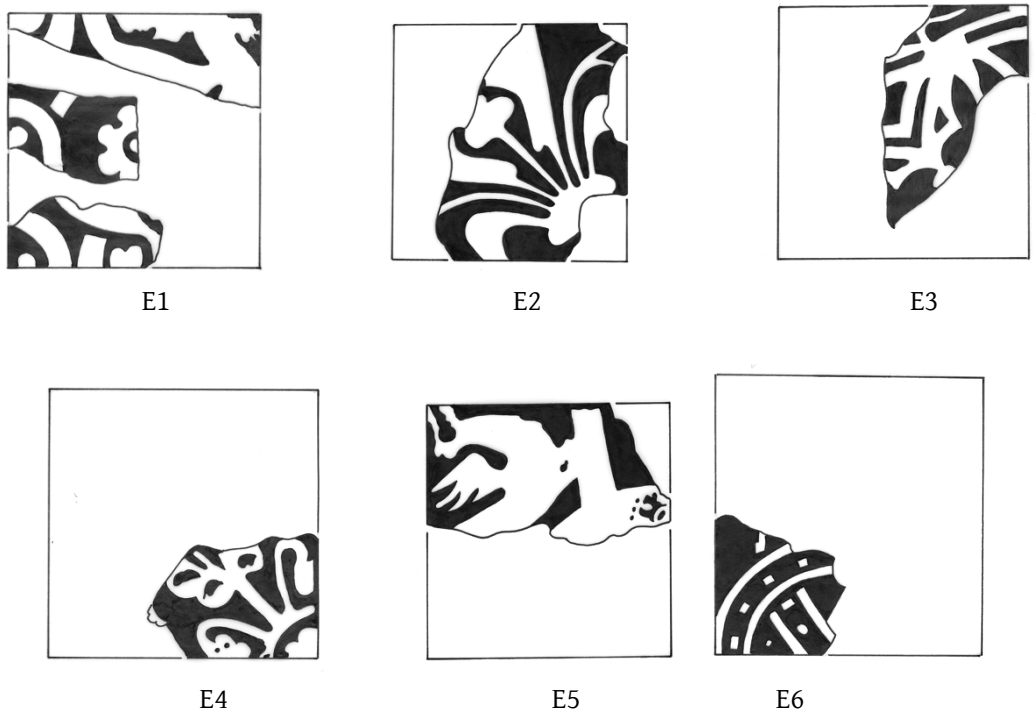
The St Albans tiles are an anomaly being the most inland and not obviously riverine of the 'Dieppe' tiles found in England. They would probably have come through the port of London and then overland. Norton suggests a date in the last quarter of the fourteenth century or very early fifteenth century on the basis of their association with new building work at Arundel and Poynings (East Sussex).[27] In the St Albans chapter house these tiles were found in Final phase 27, which is datable to 1396–1402, a date which would fit well with the proposed chronology of the tiles. It is remarkable that these tiles from Normandy were used in the abbey, suggesting that the local industries at the time were either not producing tiles of sufficient quality or not producing at all. Links with Normandy, first established with the re-founding of the abbey by Paul of Caen, seem to be reflected 400 years later in this small group of imported tiles.

[24] Norton 1992; Norton 1993.

[25] BM Cat, 210.

[26] Norton 1993.

[27] Norton 1993, 85.



Illus. 3.8.6. Group E: Dieppe tiles (1:3).

Group F. Chiltern industries (late fourteenth century)

Fifty-three tiles and fragments of this group were found. Many of these designs derive from the earlier Penn tiles, but are often more poorly executed and a little smaller. In general these Chiltern tiles form the most numerous of the slip-decorated tiles found in the chapter house. While some may have been made at Penn, it is likely that this industry spread to other locations in the surrounding villages of the southern Chilterns.

The tiles are around 110 mm (4¼ in.) square and 25 mm thick. They have a similar fabric to the Group D Penn tiles since they are bright red-orange in colour, but are generally more mixed with a sand and mica temper and are rather gritty in feel. Several of the tiles have been over-fired and have begun to vitrify. The slip has been applied using the slip-over-impression method, and the glaze is a hard yellow, but with a tendency to flake off, making the designs difficult to identify. A small number of plain tiles included plain glazed (5) and slipped and green glazed (1).

F1. Four-tile design, with stylized trees within a roundel (Hohler P141 variant) (9).

F2. Continuous design of fleur-de-lys in intersecting arcs (Hohler P48 variant) (3).

F3. Single design of four three-leafed plants in a cusped roundel (Hohler P86 variant) (14).

F4. Single design of trefoil in diagonal square (Hohler P89) (8).

F5. Single design, fleur-de-lys and eight petals in centre in roundel (Hohler P70) (2).

F6. Single design, with faces in each corner and central quatrefoil (similar to Hohler P73) (1).

F7. Four-tile design, with possible animal or human figure (Hohler P123 variant) (1).

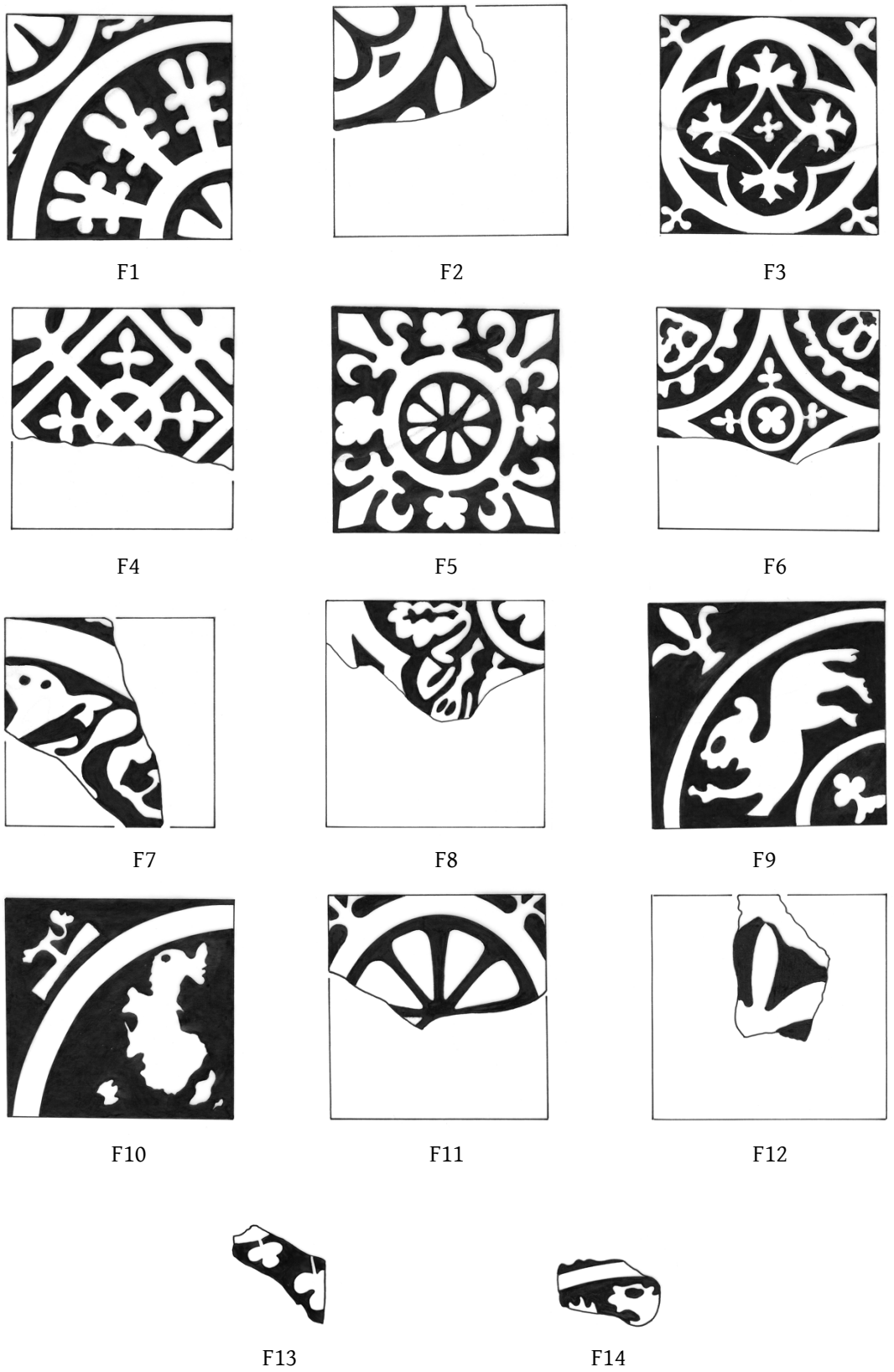
F8. Four-tile design with human monster (Hohler P123) (2).

F9. Four-tile design with animal (Hohler P125) (5).

F10. Four-tile design, with possible animal (Hohler P125 variant) (1).

F11. Single design, with?octafoil within roundel (Hohler P60 variant) (1).

F12–14. Fragments (5).



Illus. 3.8.7. Group F: Chiltern tiles (1:3).

Group G. Little Brickhill tiles (fifteenth century)

Twelve fragments were found of a single tile design, 121 mm (4¾ in.) square and 23 mm thick, with a fabric similar to the Chiltern tiles, bright red paste, with sand, flint, and chalk inclusions. The slip has been applied using slip-over-impression method with a yellow glaze. The base is un-sanded and the tiles have a medium bevel.



Illus. 3.8.8. Group G (I): Little Brickhill tiles (1:3).

G1. Four-tile design with a central intersecting fretwork, floral roundel and corner face (12).

This design is published by Hohler and by Mynard as one of the products of the Little Brickhill kilns.[28] This was a prolific production centre for ceramic industries during the late medieval period. Two kilns have been located and excavated, initially in 1930, and re-excavated in the early 1970s.[29] Tiles from the 1930 excavation are in the British Museum and others were found in the 1970s excavation. The kilns are only 27 miles away from St Albans, directly north-west along Watling Street, and it is therefore unsurprising that some reached the abbey. In addition to the 12 tiles or fragments found in the excavations, the same design is found loose in the abbey. Interestingly this design is the one most similar to the Chiltern tiles, examples of which were also found in the chapter house (see Group F, Design F3 above), suggesting that the Little Brickhill tile-makers may have come originally from the Penn area. However other designs from Little Brickhill have either Wessex or even Midland influences, and the products are of very variable quality. As for date, there seems little firm evidence beyond placing them in the fifteenth century, 'the degenerate products of the tail end of a medieval industry'.[30] Given the link with the Chiltern industries in our design, an earlier fifteenth-century date would seem more likely.

Group H. Stencilled tiles (?fifteenth century)

Four very unusual tiles, with a red paste, slightly maroon in colour with a grey core, hard and fine sand temper, and no other inclusions. One example may have been around 105 mm (4 in.) square and 22 mm thick. The tiles have a medium bevel and are glazed with a yellow or yellow-green glaze. The decoration consists of upstanding white slip, which has been applied through a stencil forming a rather simple design of lines. It is possible the design was 'painted' on, but the straight edges suggest the use of a stencil. One tile has been scored diagonally and snapped into a triangle.

H1. Pairs(?) of parallel lines of white slip on a fragment from the middle of a triangular tile (1).

H2. Intersecting lines (1).

H3. Intersecting lines and a?cross on a fragment from the middle of a tile (1).

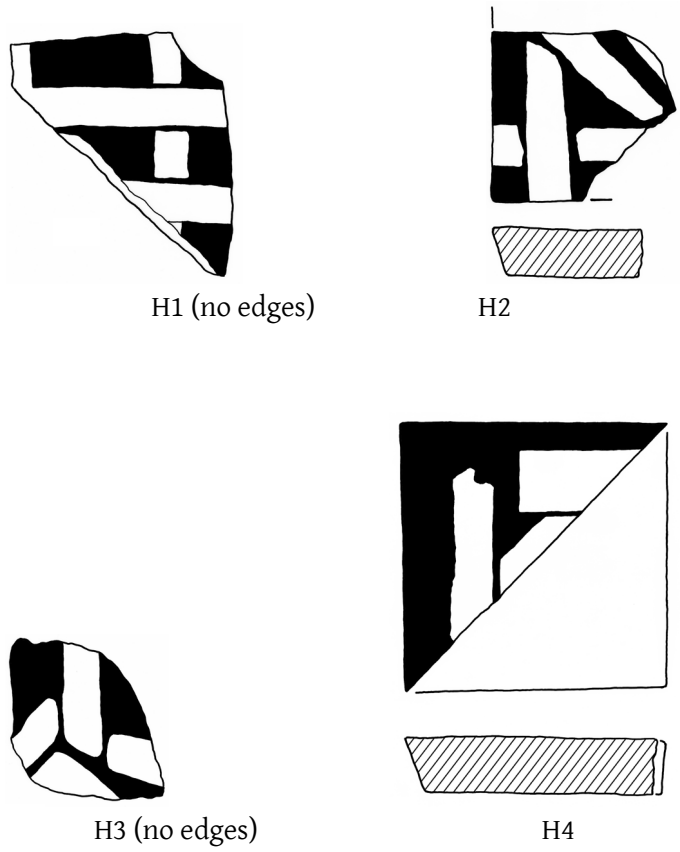
H4. Fragment (in the abbey for comparison).

Stencilled tiles are known from only two areas – in Essex-Suffolk and from Shaftesbury Abbey (Dorset). The closest links for the St Albans tiles come from the Essex Group[31] and one particular design[32] fits closely with H2 and H3. The British Museum example is actually without provenance but is assumed to come from Essex, where the others (but slightly different) have been recorded, particularly from Coggeshall Abbey and Campsea Abbey.[33] Either these tiles were traded from Essex or were the products of itinerant tile-makers. The tiles are undated but are probably late in the sequence when there was little competition from the mass-produced slip-decorated tiles.

Plain tiles: Groups I–N

Some 423 plain tiles or fragments were found in the excavations. There were three main sources: from the cloister floor immediately outside the entrance to the chapter house, as patches in the floor of the chapter house itself, and in general destruction levels where they could have come from the robbing of the monastic buildings in general, although most probably from the immediate area of the chapter house. As the tiles have no decoration, groups are based on fabric, methods of manufacture, and overall size. As an assemblage, they are of pre-Reformation date and as such are important early examples of tiles which continued in production through the sixteenth and seventeenth centuries.

[28] Hohler 1941–2, LB15; Mynard 1975, 74, Design 29.
[29] Mynard 1975.
[30] Mynard 1975, 74.
[31] BM Cat, 54–5.
[32] BM Cat, p. ii, No 10.
[33] Keen 1971; Sherlock 1980, Design 132.



Illus. 3.8.9. Group H: stencilled tiles (1:3).

Group I. Flint-tempered tiles (fifteenth century)

Square tiles, 216 mm (8½ in.) square and 25 mm thick. There were 93 examples, mostly fragments. The paste is a bright red-orange, very sandy, with inclusions of flint, quartz, and fired clay. Some of the flint is quite large (up to 10 mm) and the fracture is striated, with a soft feel. The glaze is dark green and mottled in appearance and has a somewhat lumpy appearance, as the surface of the tile was not smooth. Only one tile had a white slip before applying a yellow glaze. Another example has a dog's footprint on the reverse.

One example (T395) was from a patch in the chapter house pavement.

Group J. Flint- and chalk-tempered plain tiles (fifteenth century)

Square tiles, at least 140 mm (5½ in.) square and 26 mm thick. There are two similar fabric groups:

i. Maroon-red fabric, with large air-holes and numerous pieces of flint, showing as black specks. On the underside are some chalk pieces. The tiles were very heavily fired and were hard, if poorly made. The glaze has almost all worn off, but where it survives around the edges it was a bubble-marked yellow. One example has a dark-blue/brown coloured glaze (11).

ii. A very similar fabric except that white chalky flecks rather than flint were used as temper. There was also much chalk on the underside. Two types are of this fabric group. One has dark brown glaze over an un-slipped body, and is also 26 mm thick (7 examples). A second type has the same fabric although slightly softer and included much smaller tiles 116 mm (4½ in.) square, but only 22 mm thick (8 examples). The glaze was dark green-brown. Some of the tiles were scored diagonally.

Group K. Early Flemish tiles (late fourteenth century)

Square tiles, with a pale maroon-red paste, with inclusions of quartz, grog, and rare flint, and many small air-holes. The glaze, a hard dark green over an un-slipped body, wears smooth, is fairly thick with occasional bubbles, and shows evidence of kiln

stacking. The tiles have been wire-cut and in each of the four corners there are nail-holes. The tiles come in two sizes: 235 mm (9¼ in.) square and 32 mm thick (4 examples) and 128 mm (5 in.) square and 28–30 mm thick (30 examples)

Group L. Nine-inch Flemish tiles (early fifteenth century)

This is a tightly defined group of plain tiles 228 mm (9 in.) square and 28 mm thick. The paste is a bright orange-red, slightly gritty, medium soft but a quite well fired fabric, with small air-holes, and quartz, flint, and grog inclusions. The tiles are of two types and found in almost equal proportion: slipped with a yellow glaze (67) and non-slipped with a brown green glaze (69). The glaze has air bubbles, and each tile has two nail-holes, which are 2–3 mm square, and set diagonally, 40 mm in from two opposed corners. Four tiles in this group had been scored and broken into triangular tiles. Many of the tiles were very worn.



Illus. 3.8.10. Group L: nine-inch Flemish, nail holes indicated by white arrows (1:3).

This group was found *in situ* in the cloister walk, where they had apparently been laid in a chequer-board fashion of alternating green- and yellow-glazed tiles.

Group M. Nine-inch English tiles (fifteenth century)

Alongside the Group L tiles, significant numbers of locally manufactured tiles (Group M) were found (34 tiles and fragments). These came in two sizes: 235 mm (9¼ in.) square and 218 mm (8½ in.) square, both 30 mm thick. The paste was pale orange, fired hard, with sand and small gravel inclusions, some grog, and occasional flint. The tiles do not have nail-holes and the upper surface is slipped and glazed yellow to pale green-yellow. The sides are slightly bevelled. Some of the tiles are scored and broken. All these tiles were slipped and yellow-glazed, although tiles from the 1982–4 and 1994–5 excavations include un-slipped green-glazed tiles and yellow tiles in roughly equal proportion.

Group N. Large Flemish quarry tiles (sixteenth century)

This is a somewhat amorphous group of square tiles, difficult to size because the tiles are often very broken, but are probably at least 230 mm square (9- and 10-inch tiles) and much thicker than the other types, ranging between 32 and 42 mm thick. The paste is a bright brick-red colour, fairly soft, with flint, quartz, and grog temper, and a striated fracture, but with lumps in the fracture. The fabric is similar to Group L, but a little softer. The tiles have no or very little bevel and in this respect are more brick-like in form. They have a sanded base. Nail-holes are found in opposing corners. The types are slipped with yellow glaze (35), brown-blue glaze with no slip (9), green glazed with no slip (34), or plain unglazed (or worn completely flat) (30).

Discussion of plain tiles

The dating and provenance of plain tiles remains little studied and poorly understood. All the 423 tiles catalogued here are likely to have come from pre-Reformation contexts, and represent improvements and repairs to the abbey between the late fourteenth century and 1539. Given the quantities found, the plain tiles indicate that a major re-tiling programme was being undertaken in the monastic buildings, perhaps covering areas not previously floored with ceramic pavements. The tiling was made possible through the ready availability of cheap Flemish tiles, which can be easily distinguished in the use of nail-holes in their manufacture. These tiles are recorded to have arrived in southern England in significant quantities as ballast from the Low Countries from the late fourteenth century onwards.[34]

[34] Horton 1981, 245.

The Group L tiles are particularly interesting as they were used in the cloister pavement, the laying of which was funded by Bartholomew Wendover, at some point before his death around 1384.[35] This seems to be the earliest or one of the earliest dates for this type of nine-inch imported Flemish tiles, a late fourteenth-century date for which is acceptable. The only closely dated examples that can be linked to actual tiles come from Winchester College where the college accounts record the purchase of 48,800 Flemish tiles in 1397 along with 1,000 *maioris quantitatis*.[36] Norton argued these can be recognized as the 5-inch tiles with nail-holes, still *in situ* in the two muniment rooms of Winchester College, and that the 1,000 larger tiles were those used in the cloister, where fragments of 9-inch tiles still survive.[37] The Winchester evidence suggests that by 1400, plain tiles of two different sizes were being imported from the Low Countries.

It seems that these newly available 9-inch tiles found a ready use in the cloisters of English abbeys, many of which at this date were still not tiled. Similar square tiles were employed to pave the cloister walk at St Augustine's Abbey, Canterbury, in the fifteenth century,[38] but it is impossible to tell (as they were reburied unrecorded following excavation) whether or not they were Flemish. Similar tiles were also used at St Gregory's Priory, Canterbury, not only in the cloister walk (previously unpaved) and in the infirmary cloister, but also in the refectory and prior's lodgings.[39]

These Flemish tiles continued to be imported into England into the sixteenth century. It is likely that the thicker tiles, represented at St Albans by the much thicker almost brick-like tiles of Group N, belong to the final phase of relaying and repairing the abbey's floors. Similar thick tiles came from St Gregory's Priory, Canterbury, from pre-Dissolution contexts.[40] However they continue to be used in high-status domestic contexts such as Bekesbourne Palace in Kent and Nonsuch Palace in Surrey (begun 1538).[41]

The English tile industry seemed to have responded to this demand for plain tiles in the fifteenth century by restarting production. This is represented by tiles from Groups I, J, and M, similar to the Flemish tiles but without nail-holes. We do not know the source of these tiles, although the inclusion of chalk and flint as temper gives some geological indication that the tiles could have been made locally. The only plain-tile kiln of the fifteenth century to have been excavated was at Radwinter (Essex),[42] where the 9-inch tiles did not have nail-holes. It can be deduced that the Little Brickhill kilns were also producing plain tiles along with the decorated examples in the fifteenth century,[43] although only a handful of examples from the Little Brickhill kilns were retained, and there are no published fabric descriptions. Groups I and J may possibly come from this source.

Tiles used to repair the Romanesque tiled floor of the chapter house

The chapter house pavement laid *c.*1160 using relief-decorated tiles (RDFT) lasted essentially intact until the Dissolution, but its long life resulted in a series of patches and repairs continuing into the sixteenth century. These provide evidence for the tiling history of a great building, where repairs over time can often make up a significant proportion of the floor surface. The dates of the tiles employed may also help to date these patches and changes in the use of the chapter house. The repairs and the types of the tiles used in each are listed in Table 3.8.2.

The majority of tiles used in the repairs are plain tiles of Groups L or N, both of fifteenth- or early sixteenth-century date. There are in addition a considerable number of decorated Penn tiles of Group D, but most are extremely worn and it is likely that they were not included in the pavement in the fourteenth century when they were made, but reused as patches in the fifteenth century when they were already worn. These patches point to a considerable effort to repair the chapter house pavement at the end of its life when it would have been already well over 300 years old.

[35] See above, pp. 298–300.
[36] Hohler 1941–2, 22, 131.
[37] Norton 1976, 32.
[38] Horton 1988, 170.
[39] Horton 2001, 200.
[40] ibid.
[41] Horton 1980.
[42] Drury 1981, per. comm.
[43] Mynard 1975, 63–4.

Table 3.8.1. Slip-decorated tiles Groups A–H: qualities and phasing

Group		No. of examples	Trench, layer and feature of earliest fragment	F.ph. of earliest fragment	F.ph. date of earliest fragment	P.ph. of earliest fragment
A	1	2	1, 211, F. 552	23–4	1214–*c*.1300	31
	2	1	4, 37, F. 117	37B	1800–50	721
	3	1	4, 62, F. 117/118	37B	1800–50	721
	4	1	-	-	-	-
	5	1	-	-	-	-
	6	1	3, 470, F. 404	31–2	1539–1600	527
Total		7				
B	1	6	1, 339, F. 431	25–9	*c*.1300–*c*.1500	41
	2	2	3, 287	31	1539–*c*.1550	563
	3	1	-	-	-	-
	4	5	1, 339, F. 431	25–9	*c*.1300–*c*.1500	41
	5	1	2, 666, F. 241	35	*c*.1725–*c*.1750	286
	6	1	2, 347, F. 178B	33	1600–50	266
	7	1	2, 688, W. 26	17	1154/9–66	157
	8	1	2, 574, F. 242	35	*c*.1725–*c*.1750	287
	9	1	1, 44	43–5	1940–78	103
	10	1	2, 555, F. 241	35	*c*.1725–*c*.1750	286
Total		20				
C	1	1	2, 273	38	1850–80	384
	2	1	-	-	-	-
	3	1	3, 349	39	1880–1900	646
	4	1	-	u/s	-	-
	5	5	1, 286, primary demolition rubble over G. 13	31	1539–*c*.1550	58
	6	1	2, 874, F. 455	26–9	*c*.1350–*c*.1500	215
	7	8 [+ 2 from 82–84]	2, 654, F. 249	31	1539–*c*.1550	238
	8	1	2, 616, F. 346	31	1539–*c*.1550	241
	9	1 [+ 8 from later seasons]	-	-	-	-
	10	- [1 from 82–84]	-	-	-	-
	11	- [4 from 82–84]	-	-	-	-
	12	- [4 from 82–84]	-	-	-	-
	13	1	3, 348	39	1880–1900	646

TABLE 3.8.1. Slip-decorated tiles Groups A–H: qualities and phasing *cont*.

Group		No. of examples	Trench, layer and feature of earliest fragment	F.ph. of earliest fragment	F.ph. date of earliest fragment	P.ph. of earliest fragment
C	14	1	3, 369	30	*c*.1500–39	546
	15	1	2, 616, F. 346	31	1539–*c*.1550	241
	16	2	4, 204	33–4	1600–*c*.1725	713
	17	1 [+ 2 from 82–84]	3, 280	32	*c*.1550–1600	566
	18	1 [+ frag. from abbey]	3, 268	38	1850–80	619
	19	- [1 from 94–95]	-	-	-	-
Total		27 [+ 23 from later excavations and the abbey]				
D	1	4	1, 269, F. 339, and 2, 380	37B	1800–50	69B and 343
	2	12	2, 880, F. 511	24–5	1235–*c*.1350	213
	3	27	3, 478, F. 373	28	1402–*c*.1450	531
	4	12	3, 585, F. 462	25–8	*c*.1300–*c*.1450	514
	5	6	3, 307, F. 284	31	1539–*c*.1550	579
	6	2	4, 108, F. 257	35	*c*.1725–*c*.1750	715
	7	3	1, 269, F. 339	37B	1800–50	69B
	8	6	3, 370	30	*c*.1500–1539	546
	9	1	2, 89, F. 75	36–7B	*c*.1750–1850	294
	10	1	3, 307, F. 284	31	1539–*c*.1550	579
	11	1	1, 65	42	1940–78	97
	12	1	-	-	-	-
	13	2	2, 574, F. 242	35	*c*.1725–*c*.1750	287
	14–16	4	2, 651	34–5	1650–*c*.1750	225
Total		82				
E	1	3	1, 286, primary demolition rubble over G. 13	31	1539–*c*.1550	58
	2	3	1, 269, F. 339	37B	1800–50	69B
	3	2	1, 286, primary demolition rubble over G. 13	31	1539–*c*.1550	58
	4	1	3, 326, F. 322	37B	1800–50	627
	5	3	1, 286, primary demolition rubble over G. 13	31	1539–*c*.1550	58
	6	1	1, 273, fill of G. 13	27	1396–1402	52
Total		13				

TABLE 3.8.1. Slip-decorated tiles Groups A–H: qualities and phasing *cont*.

Group		No. of examples	Trench, layer and feature of earliest fragment	F.ph. of earliest fragment	F.ph. date of earliest fragment	P.ph. of earliest fragment
F	1	10	1, 286, primary demolition rubble over G. 13	31	1539–*c*.1550	58
	2	3	1, 2 and 1, 22	43–5	1940–78	104 (both layers)
	3	14	2, 796, F. 249	31	1539–*c*.1550	238
	4	8	3, 478, F. 373	28	1402–*c*.1450	531
	5	2	3, 587, F. 463	25–8	*c*.1300–1450	515
	6	1	2, 378	36	*c*.1750–*c*.1775	302
	7	1	3, 208	36–7B	*c*.1750–1850	590
	8	2	4, 167, F. 301	37A	*c*.1775–1800	718
	9	5	3, 585, F. 462	25–8	*c*.1300–*c*.1450	514
	10	1	2, 881, F. 512	26–9	*c*.1350–*c*.1500	215
	11	1	4, 10, F. 112	41	1920–37	727
	12	1	1, 86	43–5	1940–78	104
	13	3	2, 244	37A–B	*c*.1775–1850	331
	14	1	2, 573, ?F. 242	35	*c*.1725–*c*.1750	287
	Total	53				
G	1	12	2, 347, F. 178B	33	1600–50	266
H	1	1	2, 340, F. 178A	39	1880–1900	392
	2	1	4, 10, F. 112	41	1920–37	727
	3	1	4, 68, F. 114	37B	1800–50	723
	4	- [+ 1 from the abbey]	-	-	-	-
	Total	3 [+ 1 from the abbey]				
Total	dec. tiles	240				

Table 3.8.2. Slip-decorated and plain tiles used to repair the pavement of the chapter house

Patch no.	Feature no.	Trench/Layer no.	F.ph.	F.ph. date	P.ph.	Tiles in patch
1	F. 364	1, 256	27–8	1396–*c.*1450	51	14 Group L tiles set together (T. 1–14); mostly green-glazed, but five examples have slip. Each tile has two nail-holes set in diagonally opposite corners.
2	F. 398	2, 823	26–9	*c.*1350–*c.*1500	215	Two Group L tiles (T. 408–9) with pale green glaze, but unusually cut at a 60-degree, instead of a 45-degree, angle.
3	F. 399	2, 824	26–9	*c.*1350–*c.*1500	215	Three fragments of plain tiles (Group M) (T. 393, T. 395, and T. 397).
4	F. 428	1, 334	26–30	*c.*1350–*c.*1539	43	Fragment of a plain tile (Group N) (T. 913).
5	F. 430	1, 366	26–30	*c.*1350–*c.*1539	44	Fragment of plain tile (Group N) (T. 983?).
6	F. 431	1, 338	25–9	*c.*1300–*c.*1500	41	Fragment of a plain tile (Group N) (T. 924?) and two fragments of Group B (Designs B1 and B4).
7	F. 435	1, 346	26–30	*c.*1350–*c.*1539	45	Fragment of a plain tile (Group M) and a worn Group F tile (T. 836 and T. 944).
8	F. 453	2, 875	22	1195–1214	186a	Six green-glazed Group N tiles and one worn Group D Penn tile with green glaze (T. 593).
9	F. 455	2, 874	25 and later 26–9	*c.*1350–*c.*1500	215	One Group C tile (Design C6) (T. 588). Five fragments of Group N tiles and one Group F tile (Design F9) (T. 582–3, T. 585–7, T. 589–90, T. 592, and T. 594–5 recorded as plain glazed from F. 455 (some of these numbered tiles will belong to F. 453, but cannot be distinguished using the records available)).
10	F. 462	3, 585	25–8	*c.*1300–*c.*1450	514	Two very worn Group D Penn tiles (both of Design D4) (T. 106–7) and four Group F tiles (all of Design F9) (T. 102–5).
11	F. 493	1, 358	25 and later	1195–1214	33	Fragment of a Group J plain tile (T. 835) and one Group F tile (Design F5) (T. 830).
12	F. 493	1, 522	25 and later	1195–1214	33	Fragment of a very worn plain tile (Group N) (T. 1039) and two Group B tiles (both of Design B4) (T. 1018 and T. 1022).
13	F. 509	1, 402	25 and later	1195–1214	33	Two Group N tiles (T. 964–5 or T. 967–9).
14	F. 510	1, 404	26–30	*c.*1350–*c.*1539	45	One Group N and one Group L tile (T. 960–1).
15	F. 511	2, 880	24–5	1235–*c.*1350	213	Two worn Group D Penn tiles and two fragments of Design D2 (T. 649–52)
16	F. 512	2, 881	26–9	*c.*1350–*c.*1500	215	Eleven tiles and fragments with yellow slip or green glaze (T. 706–8, T. 710, T. 723, T. 725–8, T. 730, and T. 733). The tiles are very worn, and some could have been two-colour tiles totally worn. There were also two fragments of Group N tiles (T. 717 and 720), and one fragment each of Group D (Design D2) and Group F (Design F10), and unidentified fragments of Group F (T. 709, T. 711, and T. 713–5).
17	F. 513	2, 882	24–5	1235–*c.*1350	212	Fragment of a plain tile, pale green glaze (Group M) (T. 698).
18	F. 515	2, 884	26–9	*c.*1350–*c.*1500	215	One very large fragments of a worn Group D Penn tile (T. 749)
19	F. 463	3, 587	25–8	*c.*1300–*c.*1450	515	One fragment of Group F (Design F5) (T. 156).
20	F. 497	1, 332	27	1396–1402	50	One fragment of Group D (Design D3) (T. 525).



PART 3

9. THE REPAVING OF THE PRESBYTERY IN THE 1870s USING MINTON TILES COPIED FROM THE PAVING OF THE THIRD CHAPTER HOUSE

by JANE KELSALL

During the Victorian restoration of St Albans Abbey, Sir George Gilbert Scott was appointed architect, a position he held from 1856 until his death in 1878. He had been fond of St Albans from his youth and wrote in his Recollections, 'When I first turned my attention to architecture I almost dreamed of St Albans'.[1] One of Scott's first projects after his appointment was to restore the medieval floor levels throughout the abbey. The *Hertfordshire Advertiser* reported on 22 July 1871 that 0.60 m (2 ft) of débris filling the entire area of the south transept had been removed and that 'workmen engaged in the Abbey have been making excavations in the North and South Transepts, in the former of which some tiles of a raised geometrical pattern have been found, evidently dating from the Twelfth Century'.

In addition, some 'encaustic' tiles were discovered in the north transept, the crossing, and the choir. Scott's clerk of works, John Chapple, recorded the discoveries in 1874, stating that 'great attention has been paid to the floor levels, the steps, and the tile paving, all of which have had to be renewed; in every case the patterns of ancient tiles have been followed and copied by Minton, Hollins and Co.; no innovations have been made by the introduction of modern designs.... Some of the finest examples of ancient tiles in England are here to be found; every fragment has been preserved, and, however mutilated, laid on the floor of the north transept, for the inspection and edification of every one feeling interested in the conservation of relics of high art...'.[2]

As Chapple reported, two kinds of tile were present, the relief-decorated tiles with 'raised geometrical' patterns and the so-called 'encaustic' tiles with two-colour patterns on a flat surface. Some tiles of both the types found in the 1870s are in the Abbey Exhibition and in the Muniment Room, and others are in the British Museum.[3] Fifteen of the relief-decorated tiles (all RDFT Type B, Variant i) were set in the floor in front of the memorial to Alfred Blomfield, bishop of Colchester (Illus. 3.9.1).[4] These all have a narrow raised rim on one or more of their sides and are roughly square with sides measuring between 225 mm (8 ⅞ in.) and 275 mm (10 $^{13}/_{16}$ in.). All but one of these tiles appear to have been put together from fragments, which is hardly surprising as they were discovered under tons of earth which had been laid over the early floors in late medieval and post-Reformation times. The single complete example has a raised rim on all four sides and measures 235 mm (9 ¼ in.) square.

Some of the original two-colour 'encaustic' tiles were re-set by Scott in the floor of the north transept, in the south-east window recess. Others were laid in the south presbytery aisle by the steps leading to the Saint's chapel. About half the Minton & Hollins tiles laid in 1874 in the choir and crossing areas were copied from some of these original two-colour inlaid patterns (Illus. 3.9.2). The originals measure 110 mm (4 ¼ in.) and 115 mm (4 ½ in.) square.

The Minton & Hollins tiles copied from the relief-decorated tiles and laid in the presbytery are quite different: they are larger and in a single colour, made from a clay which fires to a dull pink and sometimes a darker red than the encaustic tiles. Four different types of relief-decorated tiles were found in 1871 and copied by Minton & Hollins. Two of these were large square tile types: RDFT Type A, Variant i (Illus. 3.9.3), and RDFT Type B, Variant i (Illus. 3.9.4).[5] The Minton & Hollins copies of the large square tile types followed the size and pattern of the originals fairly closely. The copies of RDFT Type A, Variant i, measure 226 mm (8 $^{15}/_{16}$ in.) square and 32 mm (1 ½ in.) thick, and the copies of RDFT Type B, Variant i, measure 225 mm (8 ⅞ in.) square and 32 mm (1 ½ in.) thick.

[1] Scott 1995, 321.
[2] Chapple 1874, 13.
[3] See above, pp. 289–98.
[4] See above, p. 298.
[5] See above, pp. 141–5.



Illus. 3.9.1. Two twelfth-century high relief tiles found in the north transept in 1871 and reset there.



Illus. 3.9.2. Minton & Hollins encaustic tiles set in the crossing in 1874.



Illus. 3.9.3. Minton & Hollins copy of RDFT Type A, Variant I (1:3).



Illus. 3.9.4. Minton & Hollins copy of RDFT Type B, Variant I (1:3).



Illus. 3.9.5. Two Minton & Hollins copies of RDFT Type F (1:3).



Illus. 3.9.6. Two Minton & Hollins copies of RDFT Type G (1:3).

Two other tile types were also found and copied: the oblong RDFT Types F and G (Illus 3.9.5–3.9.6). Minton & Hollins chose to 'copy' both of these types as squares with sides of 152 mm (6 in.), which form a horizontal repeating pattern when laid beside others of the same type. The Minton & Hollins copies of Types F and G were somewhat less faithful to the originals than were their copies of the Types A and B variants. Subsequent discoveries have confirmed that RDFT Types F and G are oblong tiles, the designs on which essentially equate to two of the Minton tile copies when joined together.[6] Only single incomplete examples of each of Types F

[6] See above, pp. 299–301.



Illus. 3.9.7. RDFT Type F, found in St Albans Abbey in 1871 (probably in the north transept), now in the V&A Museum, C.66-1933 (1:3, W: 159 mm. Th: 28 mm).



Illus. 3.9.8. RDFT Type G, probably found in the north transept of St Albans Abbey in 1871, now in the British Museum, Reg. No. 1947, 0505.1066 (1:3, L (incomplete): 140 mm. W: 156 mm. Th: 30 mm).

and G are known to have been found in 1871 and these probably formed the basis for the Minton copies (Illus 3.9.7–3.9.8).[7]

Whilst the Type F found in 1871 was not complete enough to suggest that the original design would have been an oblong, more than fifty per cent of the Type G survived, and this might have suggested to Minton and Hollins that the original design was indeed an oblong. It should also have been apparent to Minton and Hollins that their copies should not have been square; complete RDFTs Types F and G form oblongs, not squares, when split vertically in two.[8] Minton & Hollins presumably produced square copies of RDFT Types F and G in order to make the production, design, and laying out of their reproduction tile floor more systematic, rather than producing precise oblong copies of the originals. One further difference between the Minton and Hollins copies of RDFT Type F and the original is that part of the pattern of the intertwining foliage has not been copied accurately.

The lapse of time between the discovery of the original tiles in 1871 and 1874, when the reproduction tiles were laid, would have been time enough for Scott to order the new tiles from Minton & Hollins. On 13 March 1875 Chapple wrote in the *Hertfordshire Advertiser* that 'During the last twelve months... Tile Pavements have been laid in the Tower, Transepts, Presbytery and Aisles... Those in the Presbytery are raised and embossed, affording a firm foothold, strictly following the originals. They may be regarded as unique.'

More of the original relief-decorated tiles were discovered during trenching for gas pipes in 1877: the *Hertfordshire Advertiser* reported on 25 August 1877, in an article headed 'Excavations on the Site of the Chapter House', that 'so far as the excavations have proceeded they have resulted in the laying bare of the whole North West Corner of the Chapter House, with its late Norman responds, sedilia and beautiful tile pavement'.

In the autumn of 1920 Dean Blenkin, the most scholarly of the St Albans deans, gave permission to Mr and Mrs Ashdown and Sir Edgar Wigram of the St Albans Architectural and Archaeological Society to excavate the site of the chapter house in what was then the north-west corner of the Deanery garden. In 1924 Sir Edgar Wigram wrote that the paving tiles 'are about 8½ [*sic*] ins square and 1½ ins. in thickness, very similar in colour and texture to the red paving 'quarries' which are familiar to us in old farm houses'.[9]

He admired the bold relief patterns, noting that the high relief parts had not worn well while the recesses must have been awkward to keep clean, a fact verified by today's virgers who clean the reproduction tiles in the presbytery. Wigram observed that:

> The glaze appears in itself to have been a deep, rich bottle-green. But inequality in the firing has produced many gradations in the finished tones of the tiling, from olive green, through various shades of brown to an almost Venetian red. And the

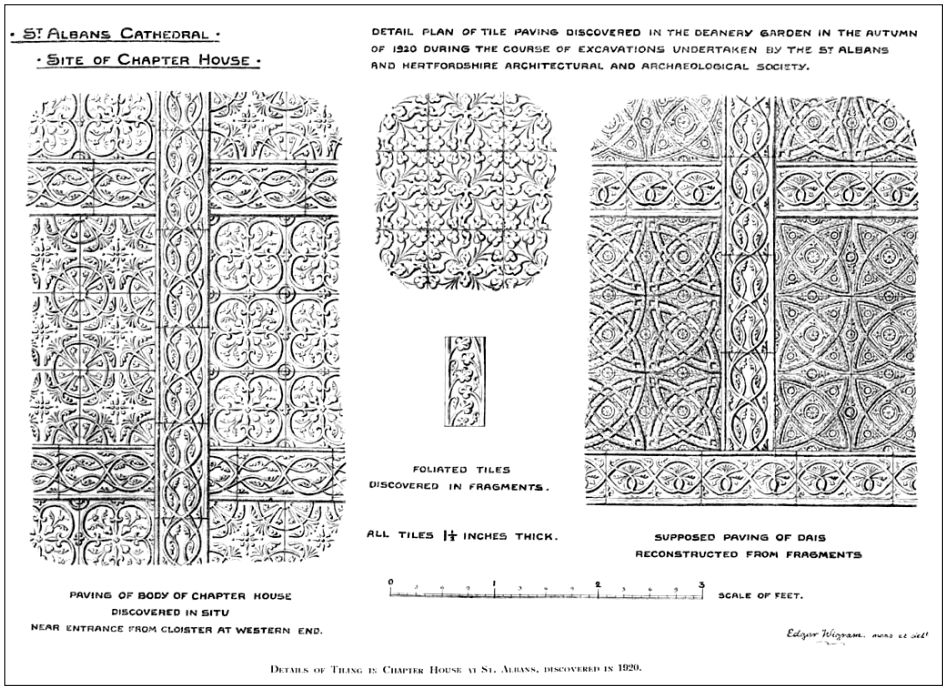
[7] See above, pp. 309–11.

[8] See above, p. 311.

[9] Wigram 1924, 40.



Illus. 3.9.9. Patch of tiles found in the 1920 excavation of the Deanery Garden.



Illus. 3.9.10. Drawing by Sir Edgar Wigram illustrating his findings in 1920.

> variegated and mottled gradations must have been one of the chief charms of the finished expanse of the tiling. Unfortunately this effect is lost in the modern replicas which have been used in paving the presbytery ... in which more modern and careful methods of manufacture have resulted in producing too uniform a brown.

This is true: the patterns on the reproduction tiles have been fairly well copied but do not have the rich visual resonance of the originals.

Wigram noted that 'only one straggling patch [of tiles], about six dozen in all, was actually found in its original position... furnishing the key to the arrangement of the tiles, which had been in groups of nine, chequer-wise, with running bands separating the chequers' (Illus. 3.9.9), and illustrated his findings in drawings of exceptional accuracy and beauty (Illus. 3.9.10).

Scott, of course, never saw this arrangement, as he had then seen only the few tiles excavated from inside the abbey in 1871. Wigram notes that Scott 'arranged the presbytery tiles in groups of nine, chequer-wise, but



Illus. 3.9.11. The present arrangement of some of the tiles in the presbytery.

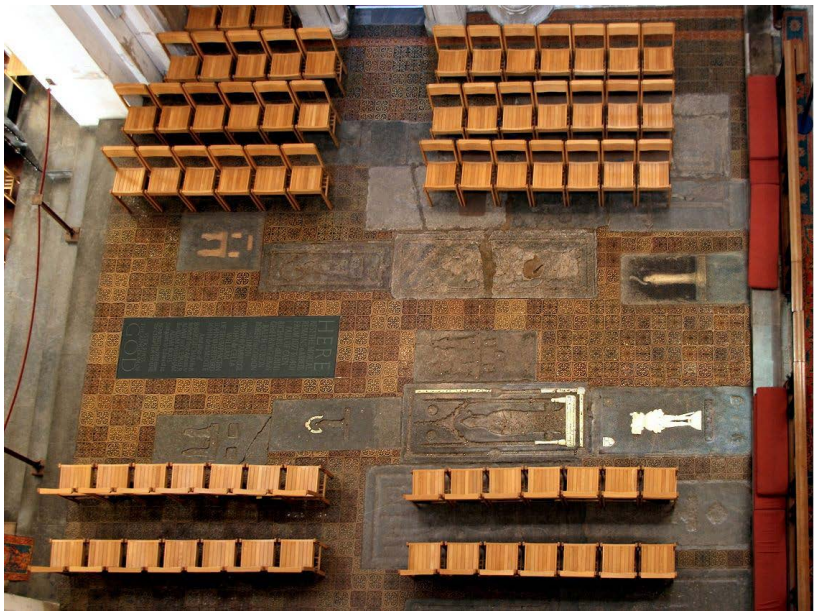


Illus. 3.9.12. The present arrangement of border tiles by the wall in the presbytery.

omitted the running bands, which was a distinct loss to the design'. In fact Scott arranged the tiles in groups of four (Illus. 3.9.11) and the oblong tiles copied from the running bands in the chapter house were only used in two bands against the walls of the presbytery (Illus. 3.9.12; cf. Illus. 3.9.13).

A more serious 'flaw' in the Minton & Hollins tiles is that the large square ones have a raised rim along all four edges (Illus 3.9.3–3.9.4). This is neither Scott's nor Minton's fault, for the tiles found in the north transept in 1871 do have a raised rim (Illus. 3.9.1), and the same is true of some other tiles found within the abbey in the 1870s and now in other collections.[10] The effect of these rims is to break up the pattern of the floor into a series of individual tiles (Illus 3.9.11–3.9.12). The tiles of the chapter house pavement, by contrast, do not have rims. When laid edge to edge they produce the impression of a continuous carpet of exceptional sophistication, as Wigram's drawings show (Illus. 3.9.10), and as the excavation of much larger areas of the pavement in 1978 confirms (see Illus. 3.2.19).[11]

[10] See above, p. 312.
[11] See above pp. 108–21.



Illus. 3.9.13. The tiled part of the presbytery floor.

The firm of Minton, later Minton & Hollins

The nineteenth-century history of the production of the Minton tiles shows the passion of men determined to produce 'encaustic' tiles which replicated, as closely as possible, the tiles used in medieval churches. Throughout the nineteenth century hundreds of new churches were built in the Gothic Revival style and patrons and architects demanded stained glass, medieval-style metalwork, and two-colour patterned tiles to furnish them. Many medieval churches needed to be restored and a growing number of clergy were keen to remove classical errors, as they now saw them, from their churches. As architects re-learned the art of Gothic building based upon the pointed arch, builders like Myers, craftsmen like Hardman, and potters like Minton strove to recover long-lost skills in glass making, metalwork, and tiles.

Herbert Minton (1793–1858) improved and expanded his father's bone china factory and first turned his attention to tile-making in 1828 but was unable to make much progress. He bought a patent from Samuel Wright in 1830 and laboured for years trying to find clays which would shrink at a similar rate so as to make two-coloured tiles of the medieval type. If the clay used for the inlaid motif does not shrink at the same rate as the main tile body, it either falls out or splits the body of the tile.

The repeated experiments necessary to perfect the production of encaustic tiles were expensive and Minton seemed to make little progress. His business partner John Boyle complained about wasted time and money. Boyle was an astute business man who sought to maximize profits but Minton was a visionary prepared to wait years, if necessary, for his investments (as he saw his experiments) to mature. Inspired by Pugin, a friend and life-long collaborator, he would arrive at his factory before anyone else and pursue his research into the chemistry of ceramics. Boyle left in frustration but Minton persisted, and finally succeeded in mastering the process of encaustic tile-making and made a huge success of it. His tiles were authentically Gothic, thanks to Pugin. They were also practical and hygienic; and 'encaustic' flooring, most often in terracotta and buff, and became the essence of Victorian decoration. To this day they remain on the floors of thousands of churches, railway stations, schools, libraries, domestic halls, and porches. By 1842 there were also black tiles with buff inlay and by 1845 blue and green inlay was used. Adding colour provided a richness which Pugin utilized in many of his churches and in his most prestigious commission, the Palace of Westminster.

In 1845 Herbert Minton was joined by two partners, Michael Hollins, his first wife's nephew, and Colin Campbell, his own nephew. By the time Herbert died in 1858 the tiles had gained an international reputation, far out-performing their rivals. Ten years later the partnership between Hollins and Minton was acrimoniously dissolved. Campbell, sensing the mood of the times, expanded his part of the tile business into relatively cheap decorative mass-produced wares, many of which made use of a block-printing process. Hollins continued from 1869 as Minton & Hollins, making high quality tiles for architectural settings, like the relief-decorated and 'encaustic' for St Albans Abbey. The twentieth century saw changes in fashion, styles, and building construction and the 'encaustic' and relief tiles were no longer wanted. The great nineteenth-century success of Minton 'encaustic' tiles had been the perfect marriage between art and industry.

PART 4. BURIALS

PART 4

1. BURIALS BEFORE THE CHAPTER HOUSE: THE SKELETAL REMAINS

by MICHAEL DONMALL[1,2]

OVERVIEW OF THE PRE-CHAPTER HOUSE REMAINS

The pre-chapter house cemetery consists of 16 intact graves divided into three grave generations which can be dated between *c*.800? and 1077 (Group A). Two of the graves (G. 10 and G. 32) each contained only a single bone, but the skeletons of the remainder were quite well represented. In addition, skeletal remains were also found in various other pre-chapter house layers (Groups B–D), and some bones which were found in medieval and later layers probably came from disturbed pre-chapter house burials (Group E). The remains from Group B cannot have been derived from the pre-chapter house cemetery as they came from stratigraphically earlier layers (a pre-cemetery ditch and pre-chapter house soils) and some possibly came from a Roman burial. On anatomical grounds, given the fragmentary nature of most of the skeletons, it is possible that all the pre-chapter house remains from Groups C–E could have come from the 16 pre-chapter house graves in Group A; however, we cannot rule out the possibility that some of the remains from Groups C–E may have come from other sources, including earlier pre-cemetery burials of possible Roman date. The 16 intact graves of Group A contain the only remains that we can assign with complete confidence to the late Anglo-Saxon cemetery and hence Group A will be discussed separately from the rest of the pre-chapter house remains in Groups B–E which are described further below.[3]

Table 4.1.1. Pre-chapter house remains: minimum number of individuals from each group

Group	Minimum number of individuals
A. Intact pre-chapter house graves	16
B. Ditches and pre-cemetery soils	2
C. Fill in pre-chapter house graves	1
D. Pre-chapter house layers	1
E. Other layers	3
Minimum number from all sources	18

[1] The examination of these skeletal remains took place in 1979. The methods used and the references given are of their time.
[2] For the archaeological evidence, see above, pp. 19–32.
[3] See below, pp. 345–83.

Group A. Intact pre-chapter house graves (Final phases 6, 8, and 9, *c*.800?–1077; for a plan of the cemetery, see Illus. 2.2.4)

Age and sex

Age and sex are shown in Table 4.1.2. In each case where it has been possible to determine sex, male status is indicated. Possible ambiguities were present in the features of G. 22 and G. 25, the latter being young in age and not yet fully developed. Sex was not determined in G. 1, G. 10, or G. 32, due to the poor preservation of the skeletal material. The age distribution is skewed towards the middle-aged groups, with two individuals aged between 17–25 years, ten aged between 25–45, and two aged between 45–55.

Table 4.1.2. Intact pre-chapter house graves: age/sex structure

Grave	Estimation of age at death	Sex
1	35–45	-
3	35–45	M
8	25–35	M
10	-	-
21	45–55	M
22	35–45	M
24	35–45	M
25	17–25	M
26	18–20	M
27	25–35	M
28	35–45	M
29	25–35	M
30	30–40	M
31	45–55	M
32	-	-
36	35–45	M

Non-metrical features

These are summarized in Tables 4.1.7A and 4.1.7B. Of note is the presence of M3 agenesis on G. 8 and G. 22 and the presence also of M2 and M3 agenesis in G. 26. Two individuals (G. 8 and G. 25) also showed persistence of the metopic suture into adulthood. The numbers of individuals are too small for population comparisons to be made.

Stature

Stature was estimated following Trotter,[4] and the results are summarized in Table 4.1.3. Striking in this assemblage are the two tall individuals in G. 24 (187.84 cm or 6 ft 2 in.) and in G. 8 (180.17 cm or 5 ft 11 in.). Average stature is seen to be 172.25 ±2.31 cm, or 5 ft 8 in., which is close (about 1 cm shorter) to the Anglo-Saxon height quoted in Brothwell and Higgs,[5] and is about 2.5 cm shorter than the mean height of the modern British male population. This St Albans series therefore reflects the somewhat taller height of Anglo-Saxon over medieval people referred to in the literature (see below, Table 4.3.4).

Table 4.1.3. Intact pre-chapter house graves: stature estimations from intact long bones

Grave	Long bones used	Estimation of stature
3	Tibia	172.62 ±3.37 cm; 5 ft 8 in. ±1.3 in
8	Femur	180.17 ±3.27 cm; 5 ft 11 in. ±1.3 in
22	Tibia	171.42 ±3.37 cm; 5 ft 8 in. ±1.3 in
24	Tibia	187.84 ±3.37 cm; 6 ft 2 in. ±1.3 in
25	Tibia	167.32 ±3.37 cm; 5 ft 6 in. ±1.3 in
27	Femur	168.27 ±3.27 cm; 5 ft 6 in. ±1.3 in
29	Humerus	167.47 ±4.05 cm; 5 ft 6 in. ±1.6 in
30	Humerus	165.95 ±4.05 cm; 5 ft 5 in. ±1.6 in
31	Humerus	167.81 ±4.05 cm; 5 ft 6 in. ±1.6 in
36	Humerus	173.65 ±4.05 cm; 5 ft 8 in. ±1.6 in

Skeletal indices

Cephalic Index. It was possible in five skulls to measure this index and the results showed a rather broad spectrum of head shapes as follows: G. 22 and G. 29 were dolichocephalic (CI = 72.9 and 73.4), G. 31 was mesocephalic (CI = 76.8), and G. 8 and G. 21 were brachycephalic (CI = 80.4 and 83.3). A full list of measurements is given in Table 4.1.8.

Health and disease

Overall, there is little gross pathology or much evidence of trauma (see Tables 4.1.4–5). Generalized arthritic change was mainly slight, enamel hypoplasia rather common, and three fractures were noted: in G. 36 a clavicle, in G. 22 a skull, and in G. 8 a radius.

Dental health

In general, the remains are of individuals with extraordinarily good dental health. Table 4.1.4 contains a summary of dental pathology for each grave and the frequencies of the various features are discussed below.

Caries: 12 individuals could be examined and of these, six showed evidence of caries, with a total of only four per cent (11/246) of the teeth being affected. Only G. 21 showed bad caries (even then to only 2/25), the remainder being pinhole-sized cavities. This compares almost precisely with the figures given by Brothwell.[6]

Ante-mortem tooth loss: only one dentition, G. 21, one of the older individuals at 45–55 (Table 4.1.7A), showed any evidence of ante-mortem tooth loss, there being 4/29 sockets showing loss, three of which were fully healed. The dentition of this individual also showed the heaviest degree of caries and wear. The upper teeth were extremely worn, part or wholly down to their roots, the second and third molars being markedly uneven and sloping buccally. Of the whole sample, only two per cent (4/258) of sockets available for examination showed ante-mortem loss, an extremely low incidence.[7]

Chronic dental abscesses: only two abscesses (under one per cent of 230 sockets) were found in skulls from the intact pre-chapter house graves, one in the dentition of G. 1 and one in that of G. 21. Both were associated with teeth that were heavily worn and which had considerable development of secondary dentine.

Periodontal disease: it was only possible to assess this in the dentitions of eight individuals due to poor preservation of the material. In most cases (six) it was only slight, the exceptions being G. 21 in which it was mild to considerable, and G. 36 in which it was mild.

Enamel hypoplasia: some degree of hypoplasia was seen in up to eight dentitions (fifty-three per cent), mainly slight in degree except G. 26 and G. 27 in which it was medium.

Calculus: 11 dentitions (ninety-two per cent) were affected by calculus (tartar) formation, mainly on the lower incisors.

[4] Trotter 1970.
[5] Brothwell and Higgs 1969.
[6] Brothwell 1972.
[7] ibid.

Table 4.1.4. Intact pre-chapter house graves: dental health

Grave	Ante Mortem loss	Caries	Abscesses	Periodontal disease	Enamel hypoplasia	Calculus
1[1]	0/16	1/16	1/16	Slight	-	Slight
8[2]	0/28	0/26	0/28	Slight	-	Slight-medium
21[3]	4/29	2/25	1/30	Mild to considerable	?	Slight
22[4]	0/14	1/14	0/14	Slight	-	Slight, considerable lower right
24	0/16	0/16	0/16	Slight	Slight-medium	Slight
25	0/32	0/31	0/20	-	-	Medium, lower incisors
26[5]	0/21	1/21	0/13	-	Medium	Slight
27[6]	0/29	0/27	0/29	-	Medium	-
28[7]	0/8	3/8	-	-	Slight	Slight
29	0/32	3/30	0/32	Slight	Slight	Slight
30[8]	0/17	0/17	0/17	Slight	?	Moderate
36[9]	0/16	0/15	0/15	Mild	Slight	Slight

[1] Good general condition, very heavy wear. [2] M3 agenesis, swelling of alveolare mainly on left lingual side of both upper and lower jaws, heavy wear, upper right PM2 down to roots. [3] Uppers extremely worn, all partly or wholly down to the roots. Marked uneven wear on upper right M2 and M3, two 'solitary' lower molars with abnormal fused and twisted roots, uppers also abnormal with broad single roots. [4] M3 agenesis, uneven wear on all teeth, overbite suggested, both second incisors misplaced. [5] Absence of left M2 and M3, vertical pitting on both upper left incisors (see dental section p. 319). [6] Two lower first molars have enlarged fifth cusp reflected to lesser extent on uppers. [7] Heavily worn. [8] Extreme wear to pulp cavity of upper right M1. [9] Teeth in very good condition, heavily worn, extremely deep jaw and broad ascending ramus.

Table 4.1.5. Intact pre-chapter house graves: osteoarthritic pathology, severe conditions
(+ indicates present)

Grave	G. 8	G. 22	G. 24	G. 27	G. 31	G. 36
Age	25–35	35–45	35–45	25–35	45–55	35–45
Spinal scoliosis with ankylosis of lumbars 3 and 4	-	-	-	+	-	-
Specific left upper limb arthropathy	+	-	-	-	-	-
Moderate to severe arthritic change	-	-	-	-	-	-
Extensive osteophytes or lipping	-	-	-	+	+	-
Eburnation	+	-	+	-	-	-

Other anomalies: these are also summarized in Table 4.1.4. The most important will be described below.

The most interesting feature was seen in G. 26, in which the two upper left incisors each have a vertical line of pitting running down their buccal surfaces (see Illus. 4.l.2). This appears to be an anomalous development of the enamel, possibly of an inborn genetic origin or resulting from early injury to the developing germ layer of these teeth.

Agenesis of M3 is noted in at least two cases and both M2 and M3 were apparently absent from the lower left jaw of G. 26.

Twisted and fused roots were characteristic of the G. 21 dentition and enlarged fifth cusps were noted on the lower M1s of G. 27.

Degenerative disease

Osteoarthritis

The poor preservation of post-cranial bones in this assemblage has left only a partial picture. However, fragmentary parts of most regions of the skeleton were usually present so it has been possible to make observations on each of the skeletons (see Table 4.1.5).

Arthritic changes were completely absent from remains in Graves 1, 25, 26, and 29 and were only very mild in G. 21 (slight vertebral lipping), G. 22 (lipping to odontoid peg, right humerus), G. 24 (slight cervical exostosis), G. 28 (slight changes to temporo-mandibular joint only), G. 30 (very slight bordering in the glenoid fossa), and G. 36 (slight generalized changes).

Table 4.1.6. Intact pre-chapter house graves: fractures
(+ indicates present)

Grave	G. 8	G. 22	G. 24	G. 27	G. 31	G. 36
Compressed skull fracture	-	+	-	-	-	-
Right clavicle fracture	-	-	-	-	-	+
Left radial head fracture with associated arthritis	+	-	-	-	-	-
Developmental anomaly femoral head and metatarsals I and IV	-	-	-	-	-	+

Table 4.1.7A. Intact pre-chapter house Graves 1–25: summary table
(+ indicates present)

Grave	1	3	8	10	21	22	24	25
Sex	-	M	M	-	M	M	M	M
Estimated age in yrs	35–45	35–45	25–35	-	45–55	35–45	35–45	17–25
Estimated height in cm	-	172.62	180.17	-	-	171.42	187.84	167.32
Caries	1/16	-	0/26	-	2/25	1/14	0/16	0/31
Abscesses	1/16	-	0/28	-	1/30	0/14	0/16	0/20
Ante-mortem tooth	0/16	-	0/28	-	4/29	0/14	0/16	0/32
Enamel hypoplasia	-	-	-	-	possible	-	+	-
M3 Agenesis	-	-	4/4	-	-	2/2	-	-
Wormians	-	-	+	-	-	+	-	-
Epipteric bone	-	-	-	-	-	-	-	-
Parietal notch bones	-	-	-	-	-	-	-	-
Tori mandibulares	-	-	-	-	-	-	-	-
Tori maxillares	-	-	-	-	-	-	-	-
Tori palatines	-	-	-	-	-	-	-	-
Coronal ossicle	-	-	-	-	-	-	-	-
Ossicle at lambda	-	-	-	-	-	-	-	-
Ossicle at asterion	-	-	-	-	-	-	-	-
Metopism	-	-	+	-	-	-	-	+
Cephalic index	-	-	-	-	-	-	-	-
Severe arthritic condition	-	-	+	-	-	-	-	-
Moderate to severe arthritic change	-	-	-	-	-	-	-	-
Eburnation	-	-	+	-	-	-	+	-
Fractures	-	-	+[1]	-	-	+[2]	-	-
Other features	-[3]	-		-	-	-[3]	-	-[3]

[1] Healed fractured radius. [2] Compressed skull fracture, healed. [3] No arthritic change at all.

The remaining graves contained bones with rather more severe arthritic changes all, except G. 8 and G. 27, showing degenerative changes resulting from normal ageing. Two cases of eburnation were found, in G. 8 to the radius and ulna at the elbow joint, and in G. 24 to both calcanea, that on the right probably caused by a bony outgrowth on the talus resulting in smooth rubbing facets.

In G. 8 the arthritic changes, mainly affecting the upper limbs and left side, were quite severe for a relatively young individual (25–35). The vertebrae were also marked with exostoses, especially at the lumbar level. The lower limbs were hardly affected at all, although pitting and lipping was present on the face of the proximal first phalanx of the foot. The extent and nature of these arthritic changes suggest an arthritic

Table 4.1.7B. Intact pre-chapter house Graves 26–36: summary table continued
(+ indicates present)

Grave	26	27	28	29	30	31	32	36
Sex	M	M	M	M	M	M	-	M
Estimated age in yrs	18–20	25–35	35–45	25–35	30–40	45–55	-	35–45
Estimated height in cm	-	168.27	-	167.47	165.95	167.81	-	173.65
Caries	1/21	0/27	3/8	3/30	0/17	-	-	0/15
Abscesses	0/13	0/29	-	0/32	0/17	-	-	0/15
Ante-mortem tooth	0/21	0/29	0/8	0/32	0/17	-	-	0/16
Enamel hypoplasia	+	+	+	+	?	-	-	+
M3 agenesis	1/1[1]	-	-	-	-	-	-	-
Wormians	-	-	-	-	-	+	-	-
Epipteric bone	-	-	-	+	-	-	-	-
Parietal notch bones	-	-	-	+	-	-	-	-
Tori mandibulares	-	-	-	-	-	-	-	-
Tori maxillares	-	-	-	-	-	-	-	-
Tori palatines	-	+	-	-	-	-	-	-
Coronal ossicle	-	-	-	-	-	-	-	-
Ossicle at lambda	-	-	-	-	-	-	-	-
Ossicle at asterion	-	-	-	-	-	-	-	-
Metopism	-	-	-	-	-	-	-	-
Cephalic index	-	-	-	-	-	-	-	-
Severe arthritic condition	-	+	-	-	-	-	-	-
Moderate to severe arthritic change	-[2]	+	-	-	-	+	-	-
Eburnation	-	-	-	-	-	-	-	-
Fractures	-	-	-	-	-	-	-	+[3]
Other features	-	+[4]	-	-[2]	-	-	-	+[5]

[1] Also M2 agenesis; enamel anomaly on incisors. [2] No arthritic change. [3] Healed clavicle fracture. [4] Ankylosing lumbar vertebrae 3 and 4. [5] Developmental anomaly femoral head and metatarsals I and IV.

condition, different from the usual generalized degenerative changes due to ageing.

G. 27 also exhibited rather severe arthritic changes leading to ankylosis of the third and fourth lumbar vertebrae. There was considerable distortion in shape of other lumbar fragments and the suggestion is of some degree of spinal curvature (scoliosis/ lordosis), but not enough of the spine exists to confirm this.

G. 31 is also of note since fairly extensive osteophytes are seen on the ribs, clavicles, glenoid fossa of the scapula, fingers, and upper limbs.

Injury

Three bones showed definite signs of trauma, confirmed radiologically (see Table 4.1.6). In G. 36 the right clavicle shows an early fracture now healed (Illus. 4.1.5). In G. 22 the cranium (Illus. 4.1.3) shows a healed, compressed fracture on the left frontal, with resultant moulding in shape. In G. 8 the radial head shows a healed fracture with later degenerative changes (Illus. 4.1.7).

In G. 31 a parietal dent was noted above the right temporal but this did not show on X-ray and was therefore not thought to be pathological. A small perforation in the mid-point of the frontmost part of the right tibial shaft was also noted. This showed some evidence of healing and may have been due to a severe cut to the lower leg which penetrated the bone.

Other pathology/anomalies

Nothing was found to be of special pathological interest or identifiable with any specific condition, although the following features were noted:

G. 21, one of the tibiae in Trench 1, Layer 271 (not the main grave layer) had a small protuberance, perhaps a small tumour.

G. 22, both femoral necks were rather thick and wide. This was particularly noticeable on the left femur where there was quite marked ridging suggesting that the major tendon was misplaced. Also, in this grave, the cranium showed somewhat asymmetrical parietals, the sagittal suture being markedly off-centre to the left.

G. 36 (from Trench 1, Layer 420, F. 537; residual in G. 23, the burial of Robert of the Chamber) included a squat femur with hardly any evidence of a ligamentous pit in the head. There was also an unusual groove in the proximal head of left IV metatarsal and a distinct hole in the distal articulation of left I metatarsal.

G. 8 contained a much-twisted sternum, without further pathology.

Pseudo-pathology

There were several instances of pseudo-pathology. The cranium in G. 26 superficially showed osteoporotic pitting to the cranial vault, especially the frontal bones, likely due to soil erosion destroying the outer table and revealing the diploe. In G. 22, a well-defined hole, l mm in diameter, was probably caused by insect boring.

There were at least two instances of previous disturbance of the graves. In G. 1 a cut across the mid-point of the left femur and in G. 8 similar cuts across the left tibia. These appeared relatively recent but were not fresh enough to have been made during the present excavation. No healing was evident so the possibility remains that such marks could have been made just after or at death, but this seems unlikely since the marks were only very slight and looked precisely like the type of mark that would have been made during a subsequent excavation or disturbance. Both graves were probably disturbed by later features (Illus. 4.1.1), which may account for the marks found.

The only remaining example of pseudo-pathology was in G. 25. Here the distal shaft of the right femur, the mid-shaft of the left humerus and the clavicle, were covered in small areas of roundish pits penetrating through the cortical layer. On close examination, these were seen to be the result of post-mortem rodent gnawing. This grave contained remains of a wooden coffin lid that would have allowed plenty of room for a scavenging rodent.

The few remains which were unstratified were insignificant and are not therefore described.

CATALOGUE

Group A. Intact pre-chapter house graves

i. Generation 1 (Final phase 6, c.800?–c.1000), west–east graves, diagonal to the abbey[8]

G. 1, remains from Trench 2, Layer 160

Burial in a wooden coffin with pillow stones. Disturbed in 1975 (F. 76, Final phase 45).

Remains of a single adult, the skull missing due to disturbance in 1975. The arms lay at the side of the body. Only the lower jaw and teeth well preserved; all 16 teeth present in the lower jaw, showing very little caries and a small abscess, but otherwise in good health. Estimated attritional age between 35–45 years. Lack of arthritic degeneration. No post-cranial measurements possible. The bones somewhat gracile and delicate but well-developed muscle attachments suggest male sex; however, sex remains uncertain due to the loss of the skull and the decay of the pelvic bones. A cut across the middle of the left femur suggests post-mortem disturbance prior to the 1978 excavation.

G. 10, remains from Trench 2, Layer 959[9]

Coffin not present. Disturbed in the mid-sixteenth century (F. 130, Final phase 31, 1539–*c.*1550), in 1975 (F. 76, Final phase 45), and probably by the 1920 excavation (Final phase 41). Residual Roman finds and animal bone.

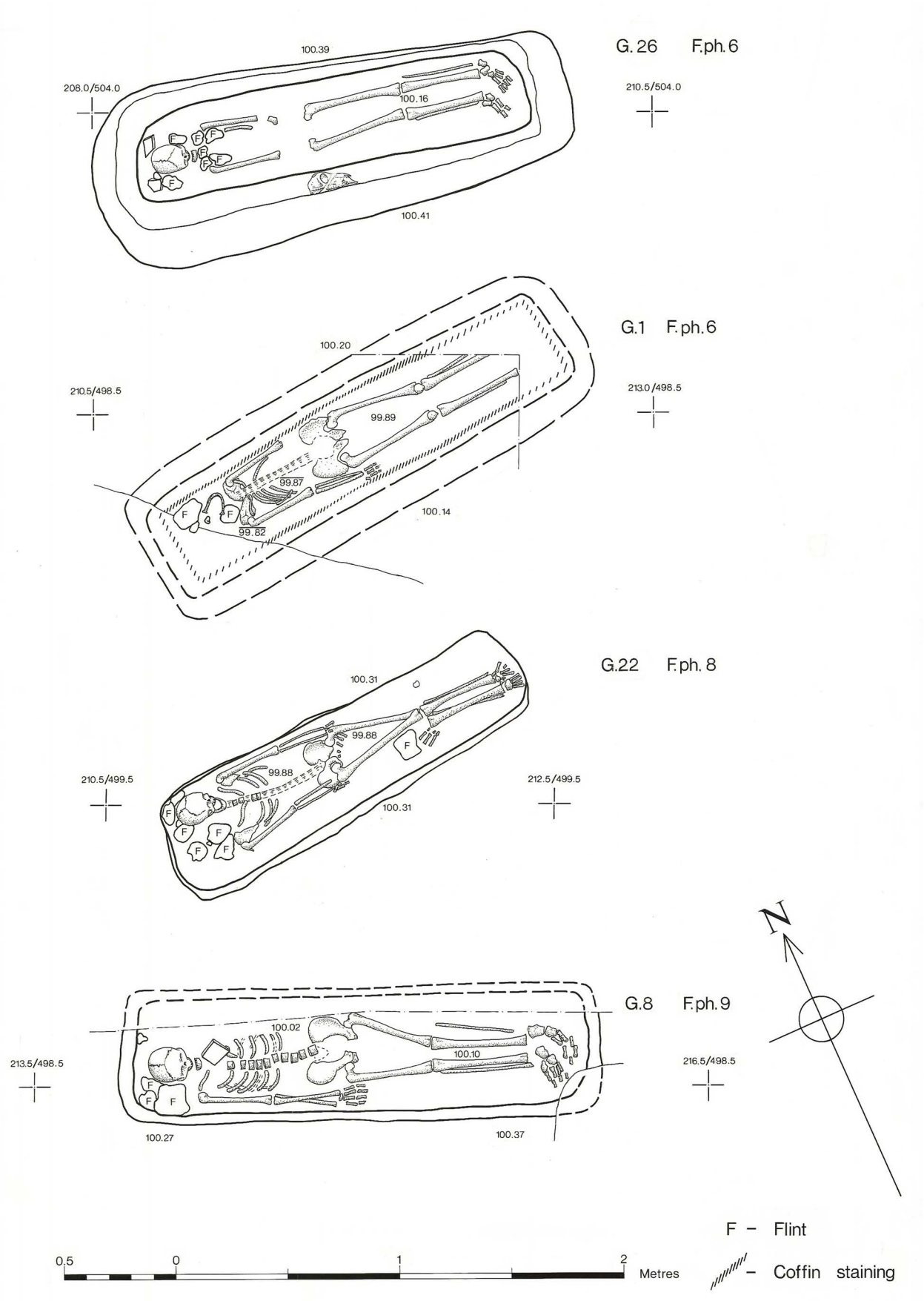
Only a femoral shaft with head and neck; weak linea aspersa.

G. 26, remains from Trench 2, Layer 972 (Illus. 4.1.1)

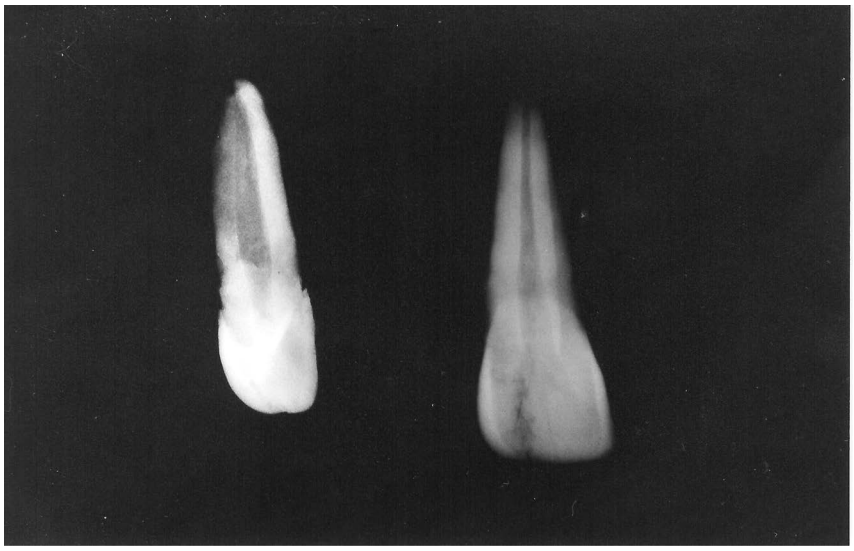
Burial intact in wooden coffin with pillow stones. Residual Roman finds and animal bone.

The fragmentary and chalky remains of a young adult male. Most regions of the body preserved to some extent although highly eroded. The pelvis suggests male sex. The dentition is noteworthy and anomalous. Twelve teeth in the lower jaw *in situ* to the extent of the first molar on both sides. The right side is destroyed but the left is intact and shows absence of both M2 and M3, confirmed by X-ray. The problems of this mandible are discussed further in the section on dental health.[10] In addition, the two upper left incisors which show longitudinal pitting on their buccal surfaces are noteworthy (Illus. 4.1.2). This may be due to a dental growth anomaly of unknown

[8] See above, pp. 318–26.
[9] The probable skull and other possible remains from G. 10 that may have been disturbed during the 1920 excavation are discussed under Group E, p. 331.
[10] See p. 325.



Illus. 4.1.1. Burials in the Anglo-Saxon cemetery beneath the chapter house.



Illus. 4.1.2. G. 26, upper left incisors with longitudinal pitting on buccal surfaces, X-ray.

origin. The age of this individual can be estimated quite accurately. Fusion of the basi-sphenoid synchondrosis implies adulthood, at approximately 18 years plus.[11] The presence of a lower M3 tooth crown, not yet erupted, suggests an age of 18–25 years. Attritionally, an age of 17–25 years is reached since very little wear is visible on the molar dentition. Epiphyseal closure again suggests an age of just under 20 years since both the femur and fibula show fusion to be only just complete. On this combined evidence, an age estimate of 18–20 years is reached. The bones are quite gracile in form but show male characteristics, especially to the skull and pelvis. No arthritic changes were seen. A gracile young adult male 18–20 years old, with abnormal dental development.

G. 27, remains from Trench 2, Layer 973

Burial intact in a wooden coffin with pillow stones. Grave cut by W. 51 (F. 383, Final phase 11, 1077–88) and by W. 55 (Final phase 17, 1154/9–66). Residual Roman finds.

The skeletal remains of a single adult male, skeleton mainly intact, with almost complete dentition, including 25 teeth *in situ* and two solitaries, showing very good dental health, no ante-mortem tooth loss, caries or other disease. Both lower first molars have a prominent fifth cusp. An age estimate of 25–35 years is made, although there is some arthritic change. There are exostoses (osteophytes) on the lumbar vertebrae, especially on lumbars 4 and 3 which are ankylosed together. After reconstruction, there is considerable distortion of shape of the articular facets on one of the lumbar vertebrae. Little else of the spine exists, but the suggestion is of a severe spinal scoliosis on this 25–35 year old, 168.27 ±3.27 cm (5 ft 6 in. ±1.3 in.) male.

[11] Genoves 1963.

G. 28, remains from Trench 2, Layer 974

Burial intact in a wooden coffin with pillow stones. Burial cut by G. 5 (F. 550, Final phase 23, 1214–35).

The much fragmented and incomplete remains of a single adult male. No vertebral column, thorax, or hand bones. Eight solitary teeth suggest an attritional age of 35–45; none can be located in jaw or maxilla. No obvious disease changes present but note poor preservation of joint surfaces. Femoral fragments suggest the individual was small in stature.

G. 30, remains from Trench 2, Layer 995

Burial in a wooden coffin with pillow stones. Cut by W. 51 (Final phase 11, 1077–88). Residual Roman finds and animal bone.

The incomplete remains of a single adult male; the upper third of the body only. The jaw and maxilla rather badly eroded revealing only nine teeth *in situ*, with a further eight solitaries. A reasonable age estimate would be 30–40 years. No caries apparent. Only very slight arthritic changes. Male sex indicated from evidence of jaw and skull fragments, and a height of 165.95 ±4.05 cm (5 ft 5 in. ±1.6 in.) estimated from humeral length.

G. 31, remains found in Trench 2, Layer 1006, by workmen

Coffin not present. Burial cut by G. 5 (Final phase 23, 1214–35).

The partial but well-preserved remains of a single adult male. Fragments from most parts of the body except pelvis, lower limbs, and dentition. A rather oblong skull with a right parietal dent, not pathological; considerable frontal pitting, probably due to post-mortem erosion.



Illus. 4.1.3. G. 22, compressed skull fracture, photograph.

Quite a lot of exostoses and 'bordering' to the joints suggests an age of about 45 years, while from cranial suture closure, an age of 45–55 is suggested. Fairly extensive osteophytes on ribs, clavicles, scapula (glenoid), fingers, and arms. The bones are those of an undoubted male of approximately 167.81 ±4.05 cm (5 ft 6 in. ±1.6 in.) in height. The fact that so few bones remain while preservation of the extant bones is so good probably results from disturbance of this grave by the cutting of G. 5.

ii. Generation 2 (Final phase 8, c.1000-1077), west–east graves, diagonal to the abbey[12]

G. 22, remains from Trench 2, Layer 963 (Illus 4.1.1, 4.1.3, and 4.1.4)

Intact burial in a wooden coffin with pillow stones. Residual Roman finds and animal bone.

The almost intact skeleton of a single adult male. The bones of the right hand are displaced to the region of the right knee. The maxilla missing but the arcade of the lower jaw complete. Fourteen teeth exist and the jaw shows absence of the M3 on both sides. Considerable uneven wear was seen, suggestive of overbite. No evidence of dental disease. An attritional age of 35–45 is estimated. Arthritic change minimal. Living stature would have been about 171.42 ±3.37 cm (5 ft 8 in. ±1.3 in.).

An injury is noteworthy (Illus. 4.1.3). There is clear evidence of a compressed skull fracture over the left parietal. The injury is fully healed and must have occurred some years before death; it is likely to have been caused by a blow to the head or by a fall.

G. 24, remains from Trench 2, Layer 968

Intact burial in a wooden coffin with pillow stones. Residual iron nail, human and animal bone.

The highly fragmentary and incomplete skeleton of an adult male. Parts of most regions of the body recovered but very little skull, vertebral column, or pelvis. Much of the skeleton had become incorporated into the surrounding grave soil with adherence of crumbly material, analysed as apatite resulting from skeletal decomposition. All lower teeth present but not all sockets as the jaw was fragmentary. Dental

[12] See above, pp. 323–6.



Illus. 4.1.4. G. 22, looking west.

health apparently very good, and very little evidence of arthritis. Some eburnation seen on both calcanea, that on the right probably caused by a bony outgrowth on the talus resulting in smooth rubbing facets. On the basis of dental attrition, an age of 35–45 is estimated. The extant bones are all rather large and suggestive of a tall, robust male. Estimate of stature based on tibial length: 187.84 ±3.37 cm (6 ft 2 in. ±1.3 in.). Green and black flecking noted on jaw and humeri.

G. 32, remains from Trench 2, Layer 1022

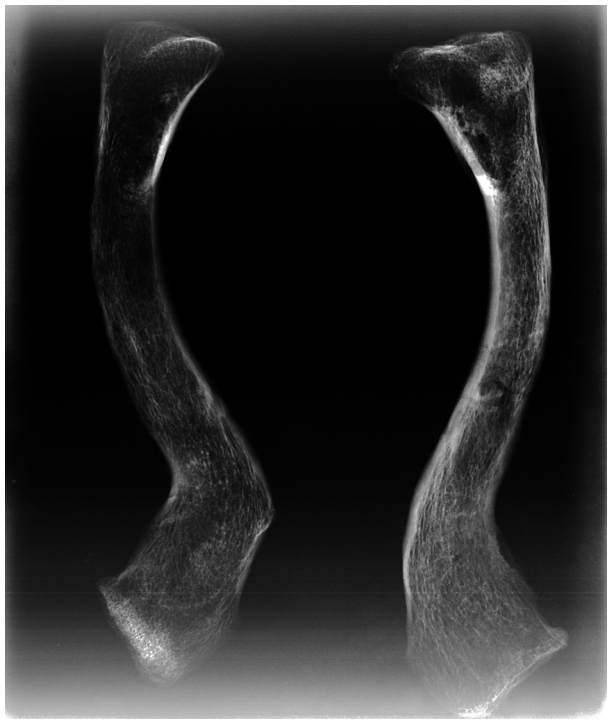
Coffin not present. Burial cut by W. 51 (Final phase 11, 1077–88).

A right tibia only, showing no anomaly or pathology.

G. 36, remains from Trench 1, Layer 493

Intact burial in a wooden coffin with pillow stones. Burial cut by the grave of Robert of the Chamber (G. 23, Final phase 17, 1154/9–66). Associated finds: copper-alloy hooked fastener (*RF 284*),[13] iron nail, and animal bone. Residual bones assigned to G. 36 on morphological grounds were also present in the graves of Adam the Cellarer (G. 11, from Trench 1, Layer 442, F. 538)[14] and Robert of the Chamber (G. 23, from Trench 1, Layer 420).[15]

The remains of a single adult male, well preserved but incomplete. Hardly any of the skull but a virtually complete jaw, and parts of most other regions of the skeleton. The teeth in very good condition and dental health apparently good. All teeth heavily worn but without caries. An extremely deep jaw and broad ascending ramus. Age probably between 35–45 years, based on attrition and arthritic changes. In height, probably about 173.65 ±4.05 cm (5 ft 8 in. ±1.6 in.). The right clavicle shows evidence of a healed fracture confirmed by X-ray (Illus. 4.1.5). A shallow ligamentous pit in the head of a rather squat left femur. A groove in the left metatarsal IV and a hole in the distal articulation of metatarsal I suggests a slight developmental anomaly.



Illus. 4.1.5. G. 36, fractured clavicle, X-ray.

[13] See below, p. 431.
[14] See below, p. 341.
[15] Separately bagged bones from Robert of the Chamber's grave (G. 23; Trench 1, Layer 420) which cut into G. 36 are attributed to G. 23.

iii. Generation 3 (Final phase 9, c.1000–77), SW–NE graves, parallel to the abbey[16]

G. 3, remains found in Trench 2, Layers 525, 527, and 528[17]

Burial in a wooden coffin. Disturbed in 1975 (F. 76, Final phase 45) and probably by the 1920 excavation (Final phase 41). Residual Roman finds and animal bone.

The partial skeleton of a single adult male, of varied preservation. The skeleton incomplete, having been cut in 1975 at waist level, such that mainly only the lower skeleton is now preserved. Generalized mild arthritic changes suggest an age of around 35–45 years. Stature, based on tibial lengths, about 172.62 ±3.37 cm (5 ft 8 in. ±1.3 in.), and the proportion and robusticity of the bones suggests medium build and male sex.

G. 8, remains from Trench 2, Layer 957 (Illus 4.1.1, 4.1.6, and 4.1.7)

Intact burial in a wooden coffin. Residual Anglo-Saxon and Roman finds: human and animal bone.

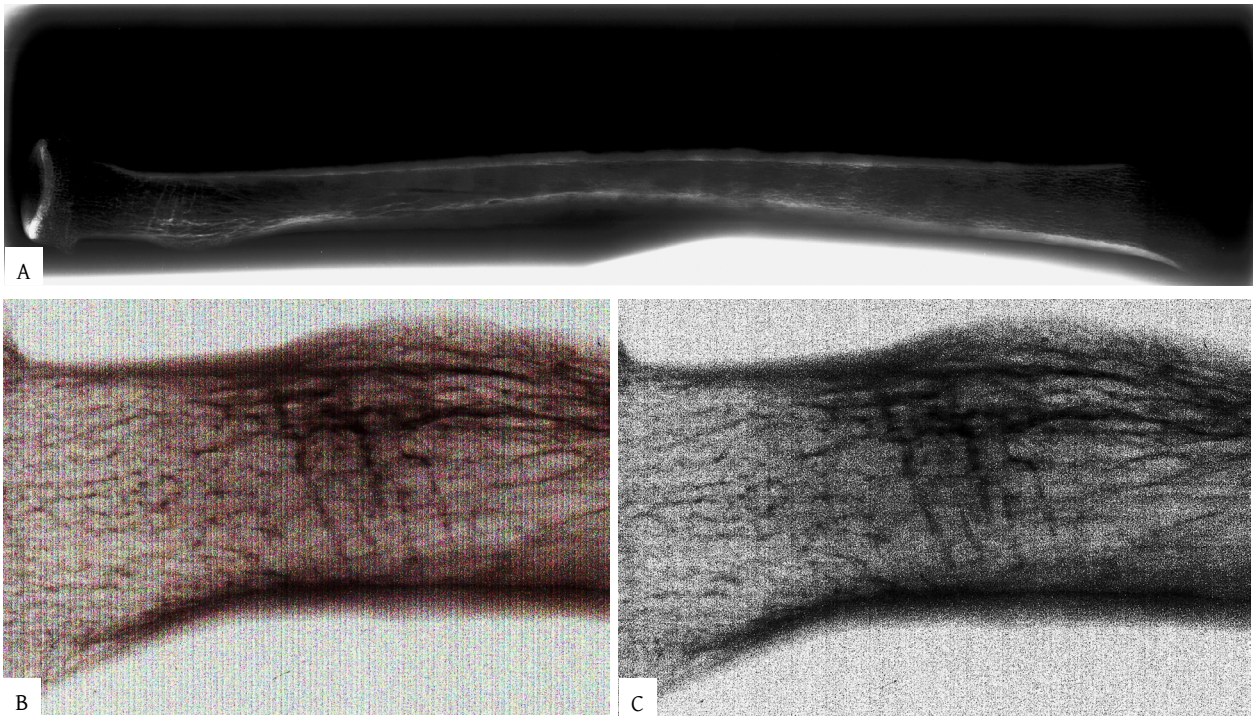
The remains of a single adult male. Most regions of the body quite well preserved including the skull, showing metopism and a pronounced nuchal, or occipital, 'bun'. The jaw, vertebral column, sternum, limbs, hands, feet, and many ribs also present. The hands were laid at the side of the body. The bones massive in construction and, with the skull, show male characteristics. Dentition complete with no caries; absence of the third molars, confirmed radiologically. Based on attrition, an age of 25–35 is suggested. The extent and nature of arthritic change suggests an arthritic condition, different from the usual generalized degenerative changes due to ageing. Very marked bordering on left humerus trochlea and capitulum, with lipping and exostoses in the ulna notch and left radial head. The left humerus capitulum and radial head show considerable eburnation, suggesting breakdown of the synovial joint surfaces. The right side affected with these changes but to a lesser extent. Apart from this, some lumbar exostoses, and mild changes to first phalanges of feet. Estimated height based on femoral length is 180.17 ±3.27 cm (5 ft 11 in. ±1.3 in.). A healed fracture to the head of the left radius with later degenerative changes is noted (Illus. 4.1.7).

Note: a second maxilla, also bagged as Trench 2, Layer 957, is probably fill bone and is described under Group C.[18]



Illus. 4.1.6. G.8, looking west.

[16] See above, pp. 326.
[17] The probable skull and other possible remains from G. 3 that may have been disturbed during the 1920 excavation are discussed under Group E, see below, pp. 331.
[18] See below, pp. 331.



Illus. 4.1.7A–C. G. 8, fractured head of left radius, X-ray.



Illus. 4.1.8. G. 21, looking south.

G. 21, remains from Trench 1, Layer 419 (Illus. 4.1.8)[19]

Intact burial in a wooden coffin with pillow stones. Disturbed in the 1920 excavation (F. 150, Final phase 41). Residual animal bones.

The remains of a single adult male; arms at his sides. Very poorly preserved, most of the bone being friable and crumbly. None of the lower legs or feet in this layer, which was disturbed in the 1920 excavation. Almost none of the hands remain, but the skull in quite good condition. Twenty-three teeth in the arcade after reconstruction, the uppers all extremely heavily worn, in some cases exposing the roots. Little caries present but one abscess was noted between upper left M2/M3; ante-mortem tooth loss amounted to 4/29. Abnormal roots noted on two solitary molars. The only evidence of disease in this skeleton is a very slight lipping of the vertebral bodies. From additional standards, an age of about 45 is estimated, suture closure suggests around 50 years. Likely age range therefore 45–55 years.

[19] The probable tibiae and fibulae from G. 21 that may have been disturbed during the 1920 excavation are discussed under Group E, see below, pp. 331.

G. 25, remains from Trench 2, Layer 971

Intact burial in a wooden coffin with pillow stones. Residual Roman finds and animal bone.

The remains of a single young adult male, the arms crossed over the pelvis. Clear traces of a wooden coffin lid were found near the bones. Extensive fragments of most parts of the body including the left scapula and virtually complete limb bones. Skull sparse but much of the jaw preserved. Seven maxillary teeth *in situ*, ten in the mandible, and 14 solitary teeth. Very little wear seen particularly to the lower molars. Attritional age is estimated to be between 17–25 years. This is consistent with the presence of unworn M3s and the absence of cranial suture closure. Most epiphyses are fused except on the clavicle, which usually fuses between the ages of 18–30 years. Dental health extremely good. On the skull, metopism is seen to be present. Male sex is suggested by masculine cranial features, even though these are not well developed due to the youth of the individual. Stature on the basis of tibial length is 167.32 ±3.37 cm (5 ft 6 in. ±1.3 in.).

G. 29, remains from Trench 2, Layer 980

Burial in a wooden coffin with pillow stones. Burial cut by W. 55 (Final phase 17, 1154/9–66).

The incomplete remains of a single adult male. Hardly any of the left side present even in fragments, but a reasonable skull with complete dentition. All 32 teeth present, no ante-mortem tooth loss but most teeth show slight enamel hypoplasia. Attritional standards give an age estimate of between 25 and 35 years, an age consistent with a general lack of degenerative changes and extent of cranial suture closure. The anatomical features of male sex are clear, and the estimate of stature, based on humeral length, is 167.47 ±4.05 cm (5 ft 6 in. ±1.6 in.).

Groups B–E. Pre-chapter house remains other than those found in intact pre-chapter house graves

The remains in Group B come from deposits which antedate the pre-chapter house cemetery (Group A). The remains in the other groups (C–E) probably came from the burials of Group A, but could come from other sources, including earlier pre-cemetery burials. The identifiable features of the bones from Groups B–E are summarized in Table 4.1.9.

Group B. Bones from ditches and pre-cemetery soils (Final phases 2–5, pre-c.400?–c.1000)

A mixed assemblage of human skeletal material: mainly foot, hand, and maxillary fragments, with the complete absence of any long bone. On anatomical grounds a minimum of two individuals are represented. The immature (around 10 years old) left maxilla from Trench 2, Layer 982 (a pre-chapter house ditch, F. 579) is particularly noteworthy and may have come from a Roman burial.

The human bones from the ditches and pre-chapter house soils came from activity on the site of the chapter house before burial in the cemetery began. The bones from the ditch of Final phases 3 (F. 579) and 4 (F. 543) must therefore be derived from burials of an earlier date than those of the pre-chapter house cemetery. There is nothing surprising in this as there is a late Roman cemetery no more than 30 m to the west.[20] There will also have been burials somewhere to the south-west of the chapter house associated with the late Romano-British and Anglo-Saxon church of the period between the fifth and tenth centuries.[21]

The skeletal material from Final phase 2–3 probably also derives from burial(s) earlier than the pre-chapter house cemetery. The material from Final phase 5 (Trench 2, Layers 925 and 967) may belong to this early group but could have come from one of the graves of the pre-chapter house cemetery.

Trench 2, Layer 1014. From Final phase 2–3, pre-*c*.400?–*c*.800? (P.ph. 118), loam below graves. Hand: a rather small proximal phalanx, probably V.

Trench 2, Layer 986. From Final phase 3, *c*.400?–*c*.800? (P.ph. 122), F. 579,?lower fill of ditch F. 543. Hand: a medial phalanx.

Trench 2, Layer 982. From Final phase 3, *c*.400?–*c*.800? (P.ph. 123a), F. 579,?lower fill of ditch F. 543. Immature left maxillary bone showing milk dentition with eruption of the permanent canine, first and second premolars, and first molar observed by X-ray. An age of between 8–10 years is probable. M1 shows quite strong taurodontism and a distinct carabelli cusp. Also, a small cranial fragment and a small part of a right zygoma.

Trench 2, Layer 871. From Final phase 4, *c*.800?–*c*.1000 (P.ph. 123b), F. 543, upper fill of north-south ditch. Hand: phalangeal element. Foot: a very small first phalanx.

Trench 2, Layer 924. From Final phase 4, *c*.800?–*c*.1000 (P.ph. 924), latest pre-chapter house soil, probably cut by G. 8. A lower left second incisor, a right clavicle, a small metacarpal I, a right metatarsal IV, and a foot phalanx. The clavicle and tooth duplicate remains already assigned to G. 8, so cannot come from that grave.

[20] Biddle and Kjølbye-Biddle 2001, 46–66, cf. Figs. 6 and 15.
[21] ibid., 72–3.

Trench 2, Layer 967. From Final phase 5, *c*.800?–*c*.1000 (P.ph. 127), loam above stake holes, probably cut by G. 30. Hand: a proximal phalanx only, likely to derive from G. 30. Foot: four right, two left metatarsals, and a phalanx.

Group C. Fill bone in G. 8 (Trench 2, Layer 957, Final phase 9, c.1000–77) of the pre-chapter house cemetery

This bone could derive from a pre-chapter house grave of Final phases 6, 8, or 9, which has entirely disappeared or, more likely, is earlier still.[22] A left maxilla including sockets/ teeth from central incisors to the first molar. Three teeth P1, P2, and M1 in *situ* and an attritional age of 25–35 is estimated.

Other remains are fragmentary: a lumber and thoracic vertebra (the lumbar with strong lipping and exostosis, the thoracic very much less), a fragmentary hand phalanx and a metatarsal I. A minimum of one individual is represented.

Group D. Bones from later pre-chapter house layers (Final phase 10, c.1000–77 (P.ph. 8))

Small, poorly preserved, fragments; minimum of one individual. The remains here could only have come from graves disturbed by the digging of the foundation trenches for the abbey church or from graves cut by the west wall of the chapter house.

Trench 1, Layer 369. Skull: very small fragment of left superior orbital border and part of temporal bone.

Trench 1, Layer 371. Skull: two small unidentified fragments. Pelvis: part of left acetabulum; moderate arthritic change.

Group E. Bones from chapter house and later layers likely to be from pre-chapter house burials

At least three individuals are represented: one juvenile 15–20 years of age and two adult males, of late-middle and old age. It seems likely that the two adult male skulls in charnel F. 362 derive from G. 3 (Final phase 9) and G. 10 (Final phase 6). It is feasible that the immature heel bone of Trench 3, Layer 628 and the immature femur of charnel F. 471 were associated in life. Immature remains are unusual in the whole assemblage and are therefore noteworthy but can probably be assumed to come from burials earlier than the pre-chapter house cemetery.

Charnel F. 471 (Final phase 16, 1151–54/9 (P.ph. 485), Trench 3, Layer 580)

Well-preserved bones in a small charnel as follows:

Upper limbs: parts of a left and right humerus and right ulna. The left humerus from a gracile adult male or female. The right humerus, head and part of the shaft, larger in construction. The right ulna shows slight exostosis in the trochlea notch. Pelvis: well-preserved left ilium with sacroiliac joint and greater sciatic notch, suggesting male sex.

Lower limbs: parts of three left femora and one right femur. Two of these form a pair, probably from a large adult male. The left femur of this pair shows thickening of the cortex proximally and of the medulla distally, of unknown pathology. No particular pathology is suggested, although it is possible that such thickening is caused by periosteal new bone formation following infection. Of the other two left femora, one is a large left (shaft only), while the other is immature, the epiphyseal head is fused with the line still present, the lesser trochanter is only just beginning to fuse, and the greater trochanter is missing altogether. In a normal individual from a modern population, this would suggest a developmental age of approximately 15–20 years, male or female. Parts also of a femoral head, two left and one right tibiae (including one probable pair), articulations generally missing or partial.

Other remains: the following attributions are possible on anatomical grounds, including age and extent of arthropathy. In addition to the possible attributions below, almost any of the remains could be from G. 10 or G. 32 (see further below).

L. humerus (G. 3 and G. 29)

R. humerus (G. 3 and G. 30)

R. ulna (G. 3 and G. 30)

L. ilium (Graves 3, 29, 30, 31, and 36)

Pair femora (G. 30 and G. 31)

L. mature femur (G. 30, G. 31, and G. 36)

L. immature femur (none)

Pair tibiae (Graves 21, 28, 29, 30, 31, and 36)

L. tibia (Graves 21, 28, 29, 30, 31, and 36)

[22] See above, pp. 330. There were clearly other graves of Final phases 6, 8, and 9 in the area, outside the limits of the excavation, or totally removed by the construction of the successive chapter houses.

Charnel F. 362 (Final phase 41, 1920–37 (P.ph. 91), Trench 1, Layer 271)

The remains of at least two individuals in a small charnel redeposited in 1920:

Skull 1: most of a large calvarium in many associating fragments. Totally fused and partly obliterated sutures, and somewhat resorbed bone suggests advanced age, 70+ years.

Skull 2: reconstructed calvarium, including supra-orbital ridges, part of right parietal with mastoid, auditory meatus and zygoma, also left zygoma. Age based on sutures alone, approximately 50–60 years. Left maxillary fragment with three teeth – canine and both premolars. Part of mandible, with four incisor sockets. No caries, considerable calculus, not heavily worn, therefore age maybe younger than sutures suggest i.e., 40–50 years.

Other remains: most of a right humerus with distal joint surface. Quite robust with little arthritic change. Part of left iliac crest of pelvis; no arthritic change. Left shaft of femur with knee joint. Very strong linea aspersa and quite marked arthritic change to the epicondyle. Remains of three tibiae: one a pair, of quite small proportions, with no evidence of disease; the other, a fragmentary left tibia, large in size, with a much drawn-out tubercle and with some arthritic change to the lateral condyle. Of similar proportions and degree of preservation to the femur. Also, fragments of two fibulae, again with strong muscular attachments.

On the basis of the skulls, very approximate estimates are that one individual was aged about 70+, and the other was aged about 40–50 years; other bones do not conflict with this picture.

The bones can only be derived from graves disturbed by the 1920 excavation that is, G. 21 and, possibly, G. 3 and G. 10. Taking this into account, the following attributions are possible on anatomical grounds, including estimated age and extent of arthropathy.

It appears highly likely that the skull remains of both G. 3 and G. 10 are present here, as the skull in G. 21 was found *in situ*. Of the remaining bones, the following attributions are possible:

Almost any of the remains: G. 10.

R humerus, L ilium: G. 3.

Pair of tibiae, L tibia, two fibulae: G. 21.

Unattributed bones

No attribution is possible on the remaining bones in this section, which are as follows:

Trench 2, Layer 905. From Final phase 13, 1093–*c.*1110 (P.ph. 152). Hand: left metacarpal II.

Trench 3, Layer 642. From Final phase 13, 1093–*c.*1110 (P.ph. 479). Humerus: poorly preserved very small fragment of shaft.

Trench, Layer 189. From Final phase 16, 1151–4/9 (P.ph. 154), F. 130. Ulna: part of left, gracile. Clavicle: most of left.

Trench 2, Layer 862. From Final phase 16, 1151–4/9 (P.ph. 154), F. 450. Vertebra, thoracic, extensive arthropathy.

Trench 2, Layer 771. From Final phase 17 (P.ph. 156). Vertebra: a large cervical with some exostosis.

Trench 3, Layer 628. From Final phase 17, 1154/9–66 (P.ph. 488). Foot: an immature left calcaneum; quite large, but from an individual probably less than 20 years of age, since the heel epiphysis is not fused.

Trench 2, Layer 865. From Final phase 25–7, *c.*1300–1402 (P.ph. 177). Foot: small left metatarsal IV.

Table 4.1.8. Intact pre-chapter house graves: measurements of bones

Grave		1	3	8	21	22	24	25	26	27	28	29	30	31	36
Maximum Length	L	-	-	18.4	18	19.2	-	-	-	-	-	18.8	-	19.0*	-
Maximum Parietal Breadth	B	-	-	14.8*	15.0*	14	-	-	-	-	-	13.8	-	14.6	-
Cephalic Index	CI	-	-	80.4	83.3	72.9	-	-	-	-	-	73.4	-	76.8	-
Basio-Bregmatic Height	H’	-	-	-	-	-	-	-	-	-	-	12.6	-	-	-
Basion-Nasion	LB	-	-	-	-	-	-	-	-	-	-	9.9	-	-	-
Frontal Arc	S_1	-	-	13.4	13.3	13.6	-	-	13.4	12.2*	11.9	12.7	-	-	-
Parietal Arc	S_2	-	-	12.6	12.2	13.9	-	-	-	-	12.2	12.7	-	12.7	-
Occipital Arc	S_3	-	-	12.7	12	-	-	-	-	-	-	11.5	-	-	-
Nasion-Alveolar Point	G’H	-	-	-	7.6*	-	-	-	-	-	-	6.7*	-	-	-
Basion-Alveolar Point	GL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Facial Breadth	GB	-	-	-	9.7	-	-	-	-	-	-	-	-	-	-
Palate Length	G’1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Palate Breadth	G2	-	-	4.5	-	-	-	-	-	-	-	-	-	-	-
Zygomatic Breadth	J	-	-	-	12	-	-	-	-	-	-	-	-	-	-
Nasal Breadth	NB	-	-	-	2.8*	-	-	-	-	-	-	-	-	-	-
Nasal Height	NH’	-	-	-	5.4*	-	-	-	-	-	-	-	-	-	-
Bi-Gonial Breadth	GoGo	-	-	10.9*	-	-	-	-	-	-		-	-	-	-
Foramen Mentalia Breadth	ZZ	4.9	-	4.9	-	4.5	-	4.9	4.3	4.6	-	4.9	-	-	-
Least Ramus Breadth	RB’	3.0	-	3.9	-	3.6	3.8	3.9*	-	-	-	3.6	3.3	-	3.7
Sagittal Height Mandible	H_1	3.1	-	3.7	3.9	2.8	-	3.7	3.3	3.6	-	3.7	-	-	3.9
Right Orbital Breadth	01’	-	-	-	4.3	-	-	-	-	-	-	4.9	-	-	-
Right Orbital Height	2	-	-	-	4.1	-	-	-	-	-	-	3.5*	-	-	-
<u>Femur</u>															
Maximum Length	FeL_1	-	-	49.9	-	-	-	44	-	44.9	-	-	-	-	46.7
Oblique Length	FeL_2	-	-	49.0	-	-	-	43.9	-	-	-	-	-	-	-
Trochanteric Length	FeL_3	-	-	47.2	-	-	-	40.9	-	-	-	-	-	-	-
<u>Tibia</u>															

TABLE 4.1.8. Intact pre-chapter house graves: measurements of bones *cont.*

Grave		1	3	8	21	22	24	25	26	27	28	29	30	31	36
Maximum Length	TiL_1	-	37.3	-	-	37.3*	43.7	35.2†	-	-	-	-	-	-	-
Oblique Length	TiL_2	-	37.2	-	-	-	43.5	35.0†	-	-	-	-	-	-	-
Humerus															
Maximum Length	HuL_1	-	-	35.5	-	34.1	-	32.4†*	-	32.1†*	-	31.5†	31.2	32.0†	33.7†
Radius															
Maximum Length	RaL_1	-	-	26.5†	-	24.4*	-	24.1†	-	-	-	-	-	23.8†*	25.4
Ulna															
Maximum Length	UlL_1	-	-	28.2†	-	-	-	26.1	-	-	-	-	-	-	27.4
Fibula															
Maximum Length	FiL_1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* = reconstructed bone † = right side measurement

Table 4.1.9. Pre-chapter house remains: summary table of remains other than those found in intact pre-chapter house graves (+ indicates present)

Group	B	C	E	E	E	E
Trench, layer	2, 982	2, 957	1, 271	1, 271	3, 580	3, 628
Sex	-	-	M	M	-	-
Age	8–10	25–35	>70	40–50	15–20	<20
Height	-	-	-	-	-	-
Caries	0/4	0/3	-	0/3	-	-
Abscesses	0/4	0/5	-	0/7	-	-
Ante-mortem tooth	0/4	0/6	-	0/7	-	-
Enamel Hypoplasia	-	-	-	-	-	-
Periodontal disease	-	-	-	-	-	-
Calculus	-	-	+[1]	-	-	-
M3 Agenesis	-	-	-	-	-	-
Wormians	-	-	-	-	-	-
Epipteric Bone	-	-	-	-	-	-
Parietal Notch Bones	-	-	-	-	-	-
Tori Mandibulares	-	-	-	-	-	-
Tori Maxillares	-	-	-	-	-	-
Tori Palatines	-	-	-	-	-	-
Coronal Ossicle	-	-	-	-	-	-
Ossicle at Lambda	-	-	-	-	-	-
Ossicle at Asterion	-	-	-	-	-	-
Metopism	-	-	-	-	-	-
Cephalic Index	-	-	-	-	-	-
Severe Arthritic Condition	-	-	-	-	-	-
Moderate to severe arthritic change	-	+[2]	+/-3	+/-[3]	-	-
Eburnation	-	-	-	-	-	-
Fractures	-	-	-	-	-	-
Other features	+[4]	-	-	-	-	-

[1] Considerable. [2] Spinal lipping/exostosis. [3] A left knee joint with marked arthritic change to the epicondyle was found in I, 271. [4] Milk dentition. Taurodontism. Carabelli cusp on upper M1. Three teeth erupting.

PART 4

2. BURIALS IN THE CHAPTER HOUSE: IDENTIFICATION, WRITTEN EVIDENCE, AND DISCUSSION

by MEGAN KIRKPATRICK

Introduction

There were 16 burials in or close to the chapter house: 14 in the chapter house itself, one below the door, and another outside in the cloister (see Illus. 2.3.4). The entries which follow are not exhaustive accounts of the lives and actions of these 16 people, except in so far as to explain why they received the honour of burial in the chapter house, or close to it.[1] The ten abbots whose abbacies spanned 1077–1263 were buried in the chapter house, and John de la Moot, abbot from 1396–1401, was buried in the entrance. All the other abbots were buried in the eastern part of the abbey church, where the 11 abbots excavated in 1978 were reburied in 1979. Four other persons were granted burial in the chapter house and one immediately outside the door in the cloister walk. From these five, only one of whom, Robert of the Chamber, father of Nicholas Breakspear, Pope Adrian IV, is really known today. All are discussed here.

The location of their graves is recorded in an early fifteenth-century written source, given in full in both Latin and English in Appendix I.[2] The compiler must have taken information from the inscribed marble slabs and brasses in the floor. One burial is omitted from this account, that of Robert of the Chamber, presumably because his grave was no longer visible in the fifteenth century. The abbots buried in the chapter house were all placed on the centre-line, or (in four cases) beside abbots already buried there (see Illus. 2.3.4). Those who were not abbots lay to one side or the other, or a little off-axis in the cloister walk.

It might seem that the graves of the abbots would have disrupted the daily processions through the chapter house, but it is more likely that processing to one side or the other over their graves would have served to recall their presence. Generally, the earlier abbots lay to the east, in the main part of the chapter house, set off from the western part (or vestibule) by a screen. Two of the earlier abbots choose burial on the central axis within the vestibule, and one of them was even in the central doorway of the screen, perhaps as an act of humility. This is suggested even more clearly in the case of the burial of John de la Moot in the main doorway of the chapter house, where his grave would have been walked upon by the community at least twice a day.

Only abbots were buried in the chapter house until about 1160 when Robert of the Chamber was buried in the north part of the vestibule. Adam the Cellarer was buried above and immediately adjacent to Robert some 20 years later. No more burials of people other than abbots then took place for two centuries, and when they did in the later fourteenth century, the chapter house had ceased to be for a century the burial-place of the abbots. Two later burials, Prior Wittenham and Master Adam Rous, were placed in the now undivided chapter house at about the mid-point, close to the south and north walls respectively. Bartholomew Wendover, monk at St Albans, was buried outside the door in the cloister walk in 1384 or later and Abbot John de la Moot in the entrance itself in 1401, both perhaps because of their association with the rebuilding of the cloister.[3] No more burials took place in the chapter house during the century and a half before it was demolished.

Abbots buried in the chapter house (see Illus. 2.3.4)

The six abbots whose graves were robbed by F. 250, F. 321, and F. 406 are marked with an *.

Intact burials are marked thus **.

Paul of Caen, abbot 1077–93*
(d. 1093: G. 9 translated to G. 16. cf. Illus 2.3.1 and 2.3.2)

Paul was a monk of the church at Caen, before being appointed abbot at St Albans in 1077. His parentage was at least half-Norman, and rumours circulated that he was the son of Lanfranc, Archbishop of Canterbury, though this was likely a response to the latter's generosity at St Albans, financing much of the

[1] For a detailed account of the lives of the abbots and monks at St Albans, see Preest and Clark 2019, where the unbroken narrative of *The Deeds of the Abbots of St Albans* is translated in a single volume, with notes.

[2] See Appendix I below, pp. 494–5.

[3] *Gesta Abbat.*, III. 424–535.

rebuilding.[4] Thomas Walsingham's book of benefactors records that Lanfranc made the remarkable lifetime donation of 1,000 marks and a legacy of 100 pounds (approximately 150 marks).[5]

Roger Wendover and Matthew Paris both record how Paul reformed the monastery, as its customs had 'for a long time now...been driven out over the threshold by the enticing pleasures of a slacker life', indeed Wendover described it as *pene collapsus est* 'virtually collapsed'.[6] In his *Granarium*, Abbot John Whethamstede wrote that Paul, with the help of Lanfranc, returned the abbey to the 'top flight of religion' *in summum auspicium religionis evasit*.[7]

By the eleventh year of Paul's abbacy, he had rebuilt the whole church together with the monastic buildings, using Roman bricks from the remains of Verulamium, rendered with lime plaster.[8]

Following his death in 1093, Paul was buried in the apse of his new chapter house (G. 9), the first of 11 abbots to be buried in this important monastic building.

Richard d'Albini, abbot 1097–1119*
(d.1119: G. 14 or 17. Illus. 2.3.2)
Oolite coffin, Illus. 4.4.1

Richard d'Albini was appointed abbot four years after Paul's death. The four-year vacancy at St Albans was the result of William II keeping the monastery under his own rule, where according to The *Miracles of St Alban*, he impoverished it for his own gain, extorting money and goods.[9] Abbot Richard was from a noble Norman family and enjoyed the favour of a close relationship with William II and Henry I, and Pope Urban. From them he received offices and possessions which he protected during his time as abbot and which benefited the abbey.[10]

Richard is also associated with a miracle, that of the healing of his arm during the translation of St Cuthbert, the shrine of which may have offered a template for the twelfth-century shrine of St Alban.[11] Richard's good standing in the abbey's collective memory was enhanced further when in 1115 the church was dedicated in the presence of bishops and abbots, Henry I and Queen Matilda, earls, barons, and other important magnates.[12]

Richard was probably responsible for extending Paul of Caen's chapter house east to a second apse. When he died in 1119, he was buried in G. 14 or 17, to the north or south of the central axis and Paul of Caen's new grave, at the eastern end of the extended chapter house.

Geoffrey de Gorron, abbot 1119–46*[13]
(d. 1146: G. 14 or 17. cf. Illus. 2.3.2 and 2.3.4)

Born in *c.*1100 in Maine, France, either at Le Mans, or as his name suggests at Gorron, Geoffrey was appointed abbot in 1119. Geoffrey may have studied at Le Mans under its bishop, Hildebert de Lavardin (1096–97); indeed Geoffrey's status as a secular clerk and his credentials as a theologian would indicate that he passed through the expanding network of schools in northern France.[14] Geoffrey was asked by Abbot Richard d'Albini at St Albans to take up the position of master of the school, but circumstances changed, and Geoffrey became master at Dunstable instead. During his time there he composed a miracle play of St Katherine, possibly in the vernacular. Vestments he borrowed for the performance from St Albans Abbey were destroyed in his care.[15] The story may explain why Geoffrey then entered St Albans as a monk and not into the specific position of master that he had been promised before taking up that role at Dunstable.

By the time Geoffrey was appointed abbot, he already had a reputation as a distinguished senior prelate, and was called upon, at least once, to resolve a dispute in another house. Geoffrey spent the early years of his abbacy acquiring further property and generally improving the abbey's finances, alongside establishing a leper hospital at St Albans.[16]

It is also important to note the relationship between Geoffrey and the abbey with Christina of Markyate, and it seems clear that *The Life of Christine of Markyate* was produced at St Albans, intending, at least in part, to commemorate this unique relationship.[17] It is recorded that whenever he was in doubt, Geoffrey would consult Christina for advice, taking her word as 'divine oracle'.[18] In turn, Geoffrey provided Christina with support to establish a community near Markyate and another

[4] Preest and Clark 2019, 122.
[5] *ND* 7, f. 86r; Preest and Clark 2019, 123.
[6] Preest and Clark 2019, 123.
[7] Oxford, Bodleian Library, MS Bodley 585, f. 17r.
[8] Allen 2011, 92.
[9] Preest and Clark 2019, 144.
[10] The fourteenth-century book of benefactors remembered Pope Urban II as a devoted follower of St Alban and a particular friend to the monastery. See Preest and Clark 2019, 146–8.
[11] *GR*, v. 445 (796–7); Preest and Clark 2019, 152.
[12] Preest and Clark 2019, 153.
[13] *Gesta Abbat.*, I, pp. 72–106; Thomson 1982; *ND* 7.
[14] The tangible testimony to Geoffrey's scholarly identity are the books produced at St Albans during his abbacy: Thomson 1982, 20–5; Sharpe 1997, 448.
[15] *Gesta Abbat.*, I, p. 73.
[16] *Deeds*: N, f. 193r–v.: Preest and Clark 2019, 163; Cownie 1998, 94.
[17] Blurton 2021, 46; Bugyis suggests that the likeliest candidate for authorship of the Life is Robert of Gorham, Geoffrey's nephew, see Bugyis 2017.
[18] Preest and Clark 2019, 190.

priory for women soon after 1140 at Sopwell, near St Albans.[19]

Geoffrey continued the work of his predecessor, Richard d'Albini, in the production of books in the abbey scriptorium. Those manuscripts produced during Geoffrey's abbacy are now amongst the best examples of early script and decoration and include the work of the 'Alexis' master illuminator. Osbert of Clare, monk of Westminster, refers to Geoffrey as 'a famous father, dule of souls'[20] and it is under Geoffrey's abbacy that the abbey gained real pre-eminence in the Church.

Geoffrey is also remembered for his completion of the shrine of St Alban and the translation of Albans's remains on 4 August 1129. Works on the shrine cost over £60.[21] Geoffrey died in 1146 and was buried in the eastern end of the chapter house on the central axis.

Ralph Gubion, abbot 1146–51
(d. 1151: G. 2. Illus. 2.3.2)
Oolite coffin, Illus. 4.4.1

Ralph was first appointed by the bishop of Lincoln as a monk at St Albans and overseer of the archives, to which he contributed many volumes.[22] Following this he joined the community at Lincoln where he held the office of bailiff. He was an enthusiastic collector of books and kept an extensive library. Shortly after this, Abbot Geoffrey died and Ralph was elected abbot at St Albans. He is credited with protecting the church from the intense violence that ensued during the conflict between Matilda and Stephen of Blois, and for overseeing the production of high-quality manuscripts on Latin literature and scriptural commentary, some of which were decorated by the 'Alexis Master'.[23] Ralph secured papal privileges from Pope Eugenius III which confirmed those granted to the convent *Officii nostri nos* by Pope Celestine II (1143–44). These offered protection from the Holy See and also conferred episcopal dignity on the abbot.[24]

Ralph became seriously ill in the fifth year of his abbacy and appointed Robert of Gorham in his place. He died after a long illness in 1151 and was buried in G. 2, on the central axis towards the western end of the chapter house.

Robert of Gorham, abbot 1151–66*
(d. 1166: G. 19. Illus. 2.3.3)

Robert was nephew of Geoffrey de Gorron and was elected abbot in 1151. A monk in Normandy or Maine, Robert visited Geoffrey at St Albans and requested to be accepted as a monk in the community. Following this he took up the post of sacristan and succeeded in getting the larger part of the church covered with lead, and completed repairs to the plasterwork throughout. Abbot Ralph appointed Robert as prior, a role in which he served for two years before becoming abbot. Robert had a scholarly reputation and the manuscripts produced during his abbacy attest to continuities in style and activity to that of his predecessors.[25]

It was during Robert's abbacy that Nicholas Breakspear was elected pope. Robert of the Chamber, a monk at St Albans for more than 50 years, was Breakspear's father. Abbot Robert went to meet Breakspear, now Pope Adrian IV, with prelates from Lyons and York, to secure papal privileges for the king, and for the abbey. Robert was honoured by the pope's favour and Adrian's bull *Incomprehensibilis et ineffabilis diuine miseratio* dated 5 February 1156 placed the abbey under direct protection of the papal see and confirmed the abbey's claim on its property, freeing the abbey from any royal demand for tax.[26] It is for this reason that Breakspear's father, Robert of the Chamber, was accorded the honour of burial in the chapter house (G. 23, slightly to the north of the central axis at the western end of the chapter house).

Pope Alexander III succeeded Adrian and through Abbot Robert's efforts confirmed Adrian's grants and extended them to include papal protection from sentences of excommunication and interdict.[27] Robert was successful too in securing the abbey's independence from the bishopric of Lincoln, a relationship which had long been contentious and difficult. In 1164, Robert was mitred, meaning he could perform duties normally only a bishop could perform and at a general synod called by Pope Alexander III, Robert was acknowledged as first among the abbots of England in the order of importance.[28]

When Robert died in 1166 he was buried before the feet of Abbot Paul in the chapter house (G. 19), which he had rebuilt.

[19] For detail on the cult of Christina and how it may have been used by the abbey to enhance their position, see Blurton 2021, 48.
[20] Williamson 1929, 114–16.
[21] Preest and Clark 2019, 167.
[22] Ralph was credited as supervisor of the archive room, which recent historians have presumed to mean the scriptorium, see Preest and Clark 2019.
[23] *CM*, II, 178; Thomson 1982 I, 22–3, 28–36; Sharpe 1997, 448.
[24] *PUE*, III, 43; Sayers 1971, 59.
[25] MLGB, 1, 164–6; Thomson 1982, I, 45–50.
[26] *HA*, I, 299; *PUE*, III, 234–8 (no. 100).
[27] Robert sent Master Ambrosius, one of his monks, to Rome to confirm the privileges bestowed on the abbey by Pope Adrian. See Preest and Clark 2019, 237.
[28] This was the claim of Adrian IV's *Religiosam vitam*, issued to the abbot and convent on 4 May 1157. See *PUE*, III, 258–61 at 260, no. 118.

Simon, abbot 1167–83*
(d. 1183: G. 18. Illus. 2.3.3)

Simon was supposedly from an English family, which if accurate makes him the first of the abbots for almost a century to have pre-conquest roots, and the last. He was elected abbot of St Albans following a four-month vacancy after Robert's death.[29] Simon is remembered as taking all possible steps to maintain and increase the monastic order and to attract more educated men to the abbey. He was known for his writing and love of the Scriptures; a manuscript of the New Testament is one of the four surviving which was made at the abbey under Simon's direction.[30] The expert copyists that Simon retained produced a number of books, of the highest quality, during his abbacy, and Simon was also responsible for carrying out repair works on the scriptorium.[31]

Simon enjoyed a close relationship with Thomas Becket, Archbishop of Canterbury. News of Thomas' martyrdom clearly upset the abbot and in the period immediately following it, he began to assemble an impressive store of jewels and other treasures to adorn the tomb, or shrine, of St Alban. It was described as 'more splendid than any other that could be seen at that time'.[32] In 1177/8, Simon is credited with the discovery of St Amphibalus, a detailed account of which was first compiled by Roger Wendover in his *Flores historiarum* and reproduced by Matthew Paris in his *Historia Anglorum*. Amphibalus' bones and that of six others with him were translated to a shrine in the church.[33]

Simon died in 1183 and was buried in G. 18, next to Robert of Gorham, who was at the feet of Abbot Paul of Caen.

Warin of Cambridge, abbot 1183–95
(d.1195: G. 12. Illus. 2.3.3)
Purbeck marble coffin, Illus. 4.4.2
Ivory crozier *RF 103–4* (Illus 5.5.1 and 5.5.2), iron ferrule *RF 633* (Illus. 5.10.2), and gold thread *RF 620–1*.[34]

Warin was educated in natural sciences at Salerno before taking vows at St Albans. Owing to his knowledge of literature and devotion to worship, he was made prior shortly afterwards. As prior it seems that Warin corresponded with Richard St Victor, a renowned scholar at the Augustinian canon house near Paris, whose activity encouraged the emergence of the university.

Warin is remembered for successfully battling the bishop of Lincoln, who sought to overturn the ruling secured against his predecessor, which granted St Albans independence from the bishopric. However, Warin's tendency to give patronage to friends and 'flatterers' is largely attributed to his success against the bishop of Lincoln.[35] In spite of this, Abbot Warin is well remembered for securing confirmation from Pope Celestine III in 1193 of the papal privileges originally secured by Robert of Gorham 20 years prior.

In 1186, Warin ordered the translation of the relics of St Amphibulas to a new shrine, which is described as ornate, made from gold and silver.[36] Warin was responsible for a number of charters and statutes, many of which benefited the poor and the sick and revolved around saints' days, or the memorial of previous abbots and wider community at St Albans.[37]

Abbot Warin died in 1195 and was buried in G. 12, on the central axis in the western end of the chapter house.

John de Cella, abbot 1195–1214*
(d. 1214: G. 15. Illus. 2.3.4)

John de Cella, described as an exceptionally pious man, an advocate of order and strict monastic discipline, was prior of Wallingford before his election as abbot of St Albans in 1195.[38] He had studied and taught in Paris, where he gained a reputation for excelling in the arts and science.[39] John is remembered for having little time for temporal matters, which he largely left to the attention of others, instead devoting himself to pious contemplation, which included commissioning beautiful paintings and engravings for the church.[40]

Abbot Warin had left 100 marks[41] to renew the front of the church, but bad luck hampered John's efforts. It transpired that the first master builder was untrustworthy, and the rate of progress thereafter was slow.[42] During John's abbacy, money was raised for the completion of the refectory, and a new dormitory was also begun, but not finished, before his death in 1214.[43]

[29] See Preest and Clark 2019, 289.
[30] Thomson 1982; the account given here might suggest that he oversaw the manufacture of a shelf-group of glossed books of the Bible: MLGB, 1, 166, 302 and Thomson 1982, I, 53–4.
[31] BL, MS Cotton Julius D III, ff. 79v–80r.
[32] There is a description of the shrine in the *Life of the Two Offas*, which may have originated at the abbey in the same period.
[33] *HA*, I, 401–9; *RW* (1), II, 389–96; *RW* (2), I, 109–16.
[34] See pp. 423–4.
[35] Preest and Clark 2019, 309.
[36] It is possible Abbot Simon's shrine was not finished and that Warin carried forward the work he had started. See Preest and Clark 2019, 317.
[37] See Preest and Clark 2019, 318–24.
[38] Wallingford was a cell of St Albans.
[39] Preest and Clark 2019, 334.
[40] *Gesta Abbat.*, I, 218; Preest and Clark 2019, 349.
[41] Preest and Clark 2019, 215.
[42] *VCH Herts* 2, 484–5. See also Preest and Clark 2019, 336.
[43] *Gesta Abbat.*, I, 220.

John is begrudged for relying too heavily on ill-chosen advisers during his abbacy. Roger de Hertford, John de Seldford, and Alexander Langley are singled out in the sources. They are accused of removing monks from the abbey, without John's knowledge, accusing them of crimes that they were innocent of.[44]

Like all religious foundations in England, the monks of St Albans suffered during the Interdict of King John's reign, which lasted for more than six years between 1208–14. It prohibited the administration of the sacraments and the use of churchyards for burials, amongst other important services. Although King John wrote to the abbot that he should ignore the Interdict, Abbot John obeyed the pope, invoking King John's wrath to the point that the abbey was taken into royal custody, and guardians loyal to the king were installed.[45]

Three days before his death in 1214, Abbot John took up position in the chapter house at St Albans to beg the monks' pardon for any offences and receive appropriate discipline.[46] John was buried next to (to the north of) Robert of Gorham, in G. 15.

William of Trumpington, abbot 1214–35
(d.1235: G. 5. Illus. 2.3.4)
Oolite coffin, Illus. 4.4.2.

William was elected abbot in 1214 and in contrast to his predecessor, he thrived when dealing with temporal affairs. His election was secured with the significant help of the steward of Saer de Quency, William's kinsman, who was such a proponent of William at court it was claimed that the king would accept no other as abbot.[47] William's behaviour dismayed his monks and those who elected him, as he proved himself more interested in secular affairs and 'banqueting and bantering'; it was apparent he was a choice of the king, and not the community at St Albans.[48]

William was twice reprimanded by his community in the chapter house. To defend himself against these complaints, William called on the papal legate in England, who came to the abbey and tore up the list of grievances against William, quelling the opposition, but earning William a poor reputation.[49] Now with little to hold against the abbot, William was able to dismiss his key opponents, banishing the prior to Tynemouth, and exiling Almaric, Walter de Standine, John de Seldford, and Alexander de Langley.[50]

William did, however, receive praise from his contemporaries for his contribution to the Fourth Lateran council, convened in April 1215; the pope praised his conduct and 'good sense'.[51] The opening years of William's abbacy were dominated by the First Barons' War of 1215–17, a period of intense conflict; the abbey was threatened three times, but survived, thanks to William's careful negotiation which included money payments.[52]

In 1218 William obtained from Pope Honorius III papal protection for the monastery, its property and cells, and confirmation of all its privileges. He also settled long-standing disputes with the bishops of Lincoln and Norwich and visited the abbey's cells, implementing all the necessary reforms.[53] Following this, William turned to improving the fabric of the abbey, completing the dormitory, and part of the church roof, including the repair of the church tower, raising its height. The west front was finished, altars were made for St Mary and St Wulfstan, and the chapel of St Cuthbert was rebuilt. His work on the cloisters should also be noted.[54]

By his death in 1235, William had succeeded in gaining the affection of his monks; his death was 'lamented'.[55] William was buried in G. 5 on the central axis of the chapter house, relatively close to the feet of Ralph Gubion in G. 2.

John de Hertford, abbot 1235–63
(d.1265: G. 4. Illus. 2.3.4)
Oolite coffin, Illus. 4.4.2

John was prior of Hertford from 1233 and was elected abbot at St Albans in 1235. John did not anticipate his election, evidenced by the present he had brought to give to the abbot he believed to be elected.[56]

During his abbacy, John faced varied encroachments on the abbey's rights, from the pope and the king. Papal provisions intensified; when John made his profession of obedience to the pope, he discovered that unbeknown to him he had committed to going to Rome either in person, or by proxy, every three years, to make 'offerings'.[57] The bishop of Hereford, King Henry's agent in Rome, pledged the monastery's credit for 500 marks on the pope's behalf and in 1256 papal letters arrived at the abbey, obliging them to pay certain merchants within a month.[58] Failing to meet this demand, the

[44] ibid., 251.
[45] *RW* (1), Appendix, 171; *CM*, II, 559–65 at 564.
[46] *Gesta Abbat*., I, 241–2.
[47] ibid., 447–8.
[48] Preest and Clark 2019, 375.
[49] Preest and Clark 2019, 376–8.
[50] *Gesta Abbat*., I, 260. Owing to 'madness' Alexander was recalled back to St Albans, where, he was whipped in the chapter house, and sent to Binham Priory, to be kept in chains until he died, *Gesta Abbat*., II, 63–6.
[51] Preest and Clark 2019, 384.
[52] *RW* (2), II, 209; *CM*, III, 9.
[53] *Gesta Abbat*., I, 278–9; Preest and Clark 2019, 392.
[54] *VCH Herts* 2, 485; *Gesta Abbat*., I, 280–8; *ND* 7, ff. 19r.
[55] *Gesta Abbat*., I, 303; Preest and Clark 2019, 422.
[56] *Gesta Abbat*., I, 312; *ND* 7, ff. 18r.
[57] Preest and Clark 2019, 447.
[58] *CM*, V, 511; Preest and Clark 2019, 485.

abbey was placed under interdict for 15 days until they paid.[59]

Despite the demands placed upon the abbey, artistic, literary, and building works flourished during John's abbacy. John's principal building work was a beautiful guest-hall, with two-storeys and an undercroft, and it became known as the King's Palace.[60] Matthew Paris was active during this period; St Albans was the perfect place for him to write, visited by kings, queens, and princes, bishops, and archbishops. Matthew died during John's abbacy in or around 1259.

John died in 1263 and was buried along the central axis of the chapter house (G. 4), near the grave of his predecessor, William of Trumpington (G. 5).

John de la Moot, abbot 1396–1401
(d.1401: G. 13. Illus. 2.3.4, grave plan Illus. 4.2.1)

John de la Moot was prior of St Albans before his election as abbot. As prior he had experience in administration and financial management, and was regarded as best placed to deal with the abbey's financial situation (bouts of the plague had badly impacted the abbey).

John appeared not to have enjoyed an easy relationship with King Richard and had to resort to money payments to secure the pre-eminence of the abbots of St Albans at court (the previous abbot of St Albans, Thomas, had not been to Parliament for some years before his death and as such, the abbot of Westminster was highly regarded by the king).[61]

Whilst it is unlikely that John played any prominent role in the deposition of King Richard in 1399, he was appointed to guard the bishop of Carlisle, Richard's ally. This, however, did not reap any immediate reward for the abbey, as on the accession of Henry IV, the power of his half-brother the bishop of Lincoln increased, putting St Albans at a disadvantage. Henry IV did visit the abbey on Ascension Day in 1400, but when compared with the favour shown by King Richard to the abbey during Thomas' abbacy, this does not seem particularly extraordinary.

It seems that Abbot John was better regarded for his administration of the abbey's affairs when he was prior, rather than as abbot.[62] As prior, he reconciled parties at conflict, maintained the abbey's buildings, and obtained papal bulls.[63] As abbot, he is remembered as having sometimes aggrandized his office at the expense of others and undertaking building work that only benefited his own position, so much so that revenue from rents decreased, hospitality and alms reduced, the cells were not visited, and 'religion perished'.[64] In an attempt to redeem himself, John distributed pigeons amongst the monks from his dovecot, and doubled their supply of spices, also relaxing some of the rules in Lent and Advent.[65] John died in 1401 and was buried on the central axis, at the far western end of the chapter house (G. 13).

Other officers buried in the chapter house (see Illus. 2.3.4)

Adam the Cellarer**
(d.1167/76: G. 11. Illus. 2.3.3, grave plan Illus. 4.2.1)
Clunch coffin, Illus. 4.4.1.

Adam was sent to reform Ramsey Abbey but was recalled by Abbot Robert of Gorham (1151–66) to take up the office of cellarer, a role suited to an active and worldly disposition, which Adam was well remembered for.[66]

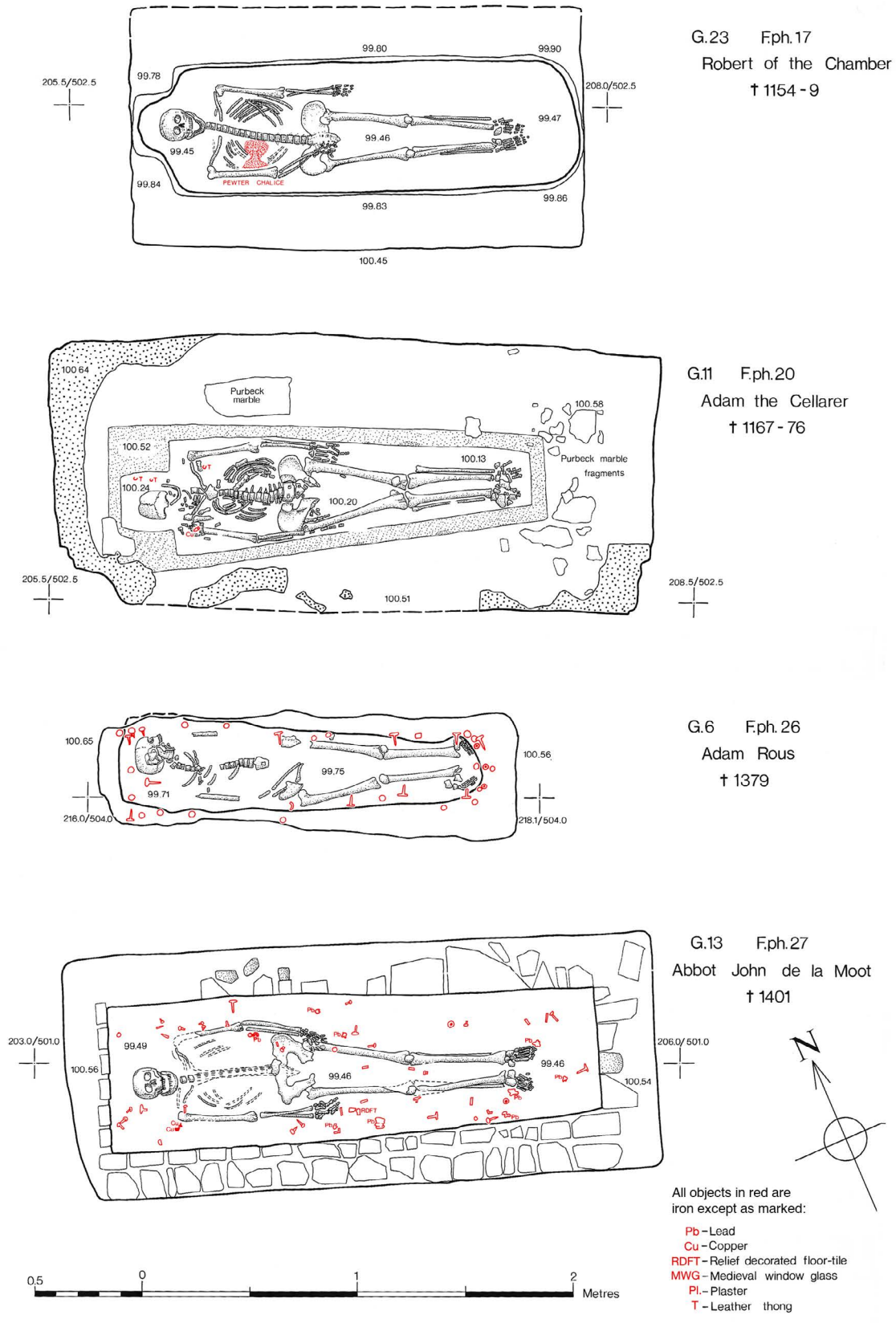
As cellarer, it would make sense that Adam would hold some responsibility for the custody of records at the abbey, but he was clearly not the author of the account of the abbey's history produced in the second half of the twelfth century, used by Matthew Paris in his *Gesta abbatum*. Most Benedictine communities at this time were split evenly between men who were schooled and those who were unlettered. Adam's monastic virtues, 'a Martha in worldly affairs and a Mary in contemplation', were not incompatible with having no Latin learning and he is remembered in Matthew Paris' *Gesta abbatum* as being illiterate (that is not schooled in Latin).[67]

Adam's skill in practical matters and his efficiency secured his good reputation,[68] and he was honoured with burial in the chapter house under a marble slab inscribed with keys. Excavation of his grave in 1978 uncovered a book clasp (*RF 250*) and leather straps (*RF 257*, *RF 259*, *RF 262*, and *RF 275–6*).[69]

Adam Wittenham, prior**
(d.1349: G. 7, Illus. 2.3.4)

Very little is known of Adam, other than he was cellarer, forester, and prior at St Albans in the fourteenth

[59] Preest and Clark 2019, 488.
[60] *CM*, V, 489; VI, 389–90; *HA*, III, 114.
[61] BL, MS Harley 3775. Printed in RS 1870, I, 414–17. App. B; *Gesta Abbat.*, III, 454.
[62] Given his length of service under de la Mare we must conclude he was an elderly abbot, which may in part explain this view.
[63] *Gesta Abbat.*, III, 435.
[64] ibid., 416, 441–8; ND7, f. 24; *Gesta Abbat.*, III, 448–50.
[65] Gesta Abbat., III, 444, 447, 470–2.
[66] Preest and Clark 2019, 8.
[67] *Annales...Amundesham*, II, 304.
[68] Preest and Clark 2019, 219.
[69] See p. 432.



Illus. 4.2.1. Burials in the chapter house, some examples.

century. It is likely that, along with the abbot, sub-prior, and many of the other monks, he was a victim of the Black Death and died soon after 1349. Following his death Thomas de Risborough was elected prior and John Woderove sub-prior.[70] Abbot Thomas de la Mare paid six and a half marks for stone for the tombs of Adam Wittenham and Adam the Cellarer.[71] With little surviving evidence for Adam's life it is not clear exactly why he was honoured with burial in the chapter house; we can only assume he performed his duties (during a difficult period) skilfully.

Others buried in the chapter house

Robert of the Chamber**
(d.1154/9: G. 23. Illus 2.3.2. cf. 2.3.4; Illus. 4.2.1)

Very little is of known of Robert of the Chamber. He was presumably a member of the abbot's chamber (*camera*) and his family name was presumably Breakspear, since that was the name his son Nicholas used before he chose to be known as Adrian on election to the papacy.[72] William of Newburgh, writing in the 1190s, added that Adrian 'was English by race, his father a cleric of modest resources who became a monk of St Albans, abandoning simultaneously his youthful son and the world'.[73]

Clerical marriage was still permitted in the late eleventh century and a detailed entry in the abbey's book of benefactors, compiled in 1380 from earlier sources, confirms (if it is the same Robert) his marriage, names his wife Agnes, and perhaps marks the moment of their separation so that he, and presumably she, might enter religion.[74]

Only William of Newburgh says that Robert was a cleric, but the presence of a chalice in his grave suggests that he was a priest at the time of his death. Robert was buried in the chapter house 'on account of his merits and those of his son'. His grave was not recorded among the burials in the chapter house in the early fifteenth-century list of graves,[75] presumably because it was not then marked and no trace of it was visible in the floor.[76] All 15 of the burials listed were found during excavation and a sixteenth (G. 23) was found below and just to the south of the grave of Adam the Cellarer (G. 11). Grave 23 was the grave of an apparently 40- to 60- year old man with a pewter chalice (*RF 281*) lying on his right breast.[77]

The stratigraphy is complex; Grave 23 had been cut through an earlier floor and another floor had been laid over it before the grave of Adam the Cellarer (G.11) was dug. The filling of G. 23 seems to have subsided after the insertion of G. 11. The depression left by the subsidence was then filled in and the floor restored to the level it maintained for the rest of the Middle Ages.[78] No fragments of tiles of the kind (RDFT) used for paving the floor of the third chapter house were found in the original fill of G. 23.[79] They did occur, by contrast, in the filling of the depression over G. 23 (F. 527) and in layers associated with the construction and filling of G. 11, the grave of Adam the Cellarer (Trench 1, Layer 424; F. 504). Since the main body of the second chapter house was not tiled, the tiles which later covered G. 23 can only have been those of the RDFT pavement of the third chapter house, laid in the later 1150s or 1160s. By the time of Robert's burial, the first chapter house had been extended east to create the second chapter house and the floor re-laid (cf. Illus 2.3.1 and 2.3.2). The four abbots already buried in the chapter house lay on or adjacent to the axis and further to the east.

Master Adam Rous**
(d.1379: G. 6. Illus. 2.3.4, grave plan, Illus. 4.2.1)

The Rous's were well established in London and Adam Rous was surgeon to Edward III between 1359 until Edward's death in 1377, just three years before his own in 1379.

In 1374 Rous gained property in Essex through a grant from the king. This is the last time Rous is referred to as the king's surgeon.[80] Adam Rous died in 1379 and in his will, he made a bequest to the Abbey of St Albans and asked to be buried there.[81]

[70] *Gesta Abbat.*, II, 370 and 381.
[71] *Gesta Abbat.*, III, 389–90.
[72] *Gesta Abbat.*, I, 112–13.
[73] Walsh and Kennedy 2007, 26–7; Bolton and Duggan 2003.
[74] Cambridge, Corpus Christi College, MS 7, f. 111^{r} (printed RS 1866, 459).
[75] See below, Appendix I.
[76] The abbot's grave nearest to Robert's was that of Ralph Gubion (d.1151; G. 2; see Illus. 2.3.2). The statement that Robert's grave was not far from Richard d'Albini's is therefore incorrect and may suggest that the exact location of Robert's grave was already forgotten, covered by the tiles of the floor, when the passage in question was written. The position of the grave of Adam the Cellarer (G. 11) relative to that of Robert (G. 23) is discussed further below.
[77] See below, p. 428.
[78] For the archaeological evidence, see above, pp. 47–49.
[79] Trench 1, Layer 420A. During excavation two fragments of worn RDFT were recorded from Trench 1, Layer 420. In the post-excavation phasing, Birthe Kjølbye-Biddle divided Trench 1, Layer 420a, the original fill, from Trench 1, Layer 420, the upper fill, since it is unlikely that fragments of RDFT showing signs of wear could be associated with the grave of either Robert of the Chamber (d.1154/9, G. 23) or Adam the Cellarer (d. 1167/76, G. 11). The complexity of the stratification was only fully realized when the grave had been half excavated to allow the drawing of Section 6. During this first stage the distinction between the fill of G. 23 and the overlying layers relating to the insertion of G. 11 and the subsequent subsidence is unlikely to have been correctly followed, with the consequence that the allocation of the RDFT fragments to the original fill of the grave (Trench 1, Layer 420) is not secure.
[80] *Calendar of Patent Rolls*, 48 Edward III, 26 February 1374, Westminster.
[81] Copies of Adam's will appear in one volume of the surviving two volume fourteenth-century cartulary now at Chatsworth. This compilation documents at length Adam Rous's property holdings at St Albans and his transactions with the abbey, cf. Preest and Clark 2019.

Burial in the cloister walk near the door of the chapter house (see Illus. 2.3.4)

Bartholomew Wendover **
(d.1380 x *c.*1393: G. 20)

According to the list of burials, Bartholomew Wendover, formerly rector of Shackerstone (Leics.), was buried in the middle of the east cloister walk, 'nearly opposite the door of the chapter house', under a marble stone carrying a four-line Latin epitaph.[82] The list noted his generosity to the monastery and 'to the work of the cloister' (*operis claustri*) and his epitaph records more precisely that he decorated 'this cloister with a pavement' (*hoc claustrum decoravit ... pavimento*).[83]

In 1384 Bartholomew exchanged the rectory at Shackerstone with John Mote for the vicarage of Besthorp in Norfolk, of which Wymondham Abbey, a cell of St Albans, was patron. And later the same year Bartholomew swapped Besthorp with Thomas Killingworth. Bartholomew's short term as vicar of Besthorp may suggest that he died in office in 1384 or retired either to Wymondham or more probably to St Albans, with which he had a close connection, and where he was buried.

'The Book of Benefactors' (*Liber benefactorum*), complied in 1380 by Thomas Walsingham (*c.*1340–*c.*1422), 'was one of the most ambitious and important books to be produced at St Albans in the later Middle Ages'.[84] The entry for Bartholomew Wendover is accompanied by a painting, showing him seated and bald. The accompanying text reads:

> Dominus Bartholomeus de Wendoue' Rector ecclesie de Schakreston' pro mercando utriusque uite stipendio dedit nobis ducentas et quadraginta marcas, ut haberet uidelicet inter nos corrodium non multum onerosum, sed perexile. Et cum illud corrodium non equipolleret tante summe pecunie, fatebatur se ideo maxime dedisse tantam summam, ut opus noui claustri feliciori per ipsum consurgeret incremento. Et quoniam tam pium uotum condigna remuneratione fraudari non debuit, totius consensu conuentus, impensum est ei nostre fraternitatis beneficium, ipso illud cum summa deuotione petente. Moriens tandem legauat Abbati xx. li. et Priori xx.ti marcas, et sacerdoti cuilibet de Conuentu i marca et nonsacerdotibus dimidiam marcam.[85]
>
> Dom Bartholomew Wendover, rector of the church of Shackerstone, gave us 240 marks to purchase a stipend of one life or the other, clearly so that he might have a modest corrody among us and one not greatly burdensome. Since that corrody would not amount to so large a sum of money, he acknowledged that he had given so a large a sum precisely so that the work of the new cloister should rise through his gift with a happier outcome. And because such a pious gift ought not to be deprived of an equivalent remuneration, the benefice of our fraternity was granted to him with the agreement of the whole convent, himself entreating that with the greatest devotion. When at length he died, he bequeathed to the abbot 20 pounds, and to the prior 20 marks, and to each priest of the convent one mark, and to each of those not a priest half a mark.

Without knowing how much his corrody cost, we cannot know how much was left for work on the cloister. The four walks had a total length of 154.2 m (506 ft) and an area of 758 m^2 (8159 square ft). To pave the entire circuit would require some 14,500 tiles, each nine inches square. In the 1390s nine-inch Flanders tiles to cover that area could have cost £9 10s. 4d.[86] Adding a maximum of £5 for unloading the ship and carriage to St Albans and £5 for labour, the total cost cannot at the most have been more than £20.[87] Even after deduction of the cost of Bartholomew's corrody,[88] his gift of 240 marks (£160) would have paved the whole cloister, probably for the first time, and paid for a great deal more besides.

The north walk was repaired in the 1330s and 1340s following the fall of five bays of the south aisle of the nave in 1323. Excavation has shown that the east walk was reconstructed in the second half of the fourteenth century (W. 7; Final phase 26 (*c.*1350–96))[89] and the west walk at about the same time.[90] These works, which included the vaulting of the cloister, go far to explain the importance attached to Bartholomew's burial and commemoration.

[82] For the list, to which Bartholomew's epitaph was added, see below, Appendix I, pp. 494–5.
[83] The epitaph may have been written by Thomas Walsingham or John Whethampstede; Clark 2002, 836 and n. 27.
[84] Clark 2006; Clark 2002, 847; see also Parkes 2008, 25 and Gransden 1982, 123.
[85] *ND* 7, ff. 106v–7r.
[86] Norton 1974, Type B, 25, 30, 32, 34, 39.
[87] Costs estimated from the figures for unloading, carriage, and laying given by Norton 1974, 39, 41.
[88] Bell and Sutcliffe 2010, Table 1, which gives the price of twenty-seven corrodies over the course of the 14th and 15th cent.
[89] For the east walk, see above, pp. 60–64.
[90] Biddle and Kjølbye-Biddle 1990b, Fig. 2, F.

PART 4

3. BURIALS IN THE CHAPTER HOUSE: THE SKELETAL REMAINS

by MICHAEL DONMALL[1]

OVERVIEW OF THE CHAPTER HOUSE REMAINS

The chapter house burials are a select group of known individuals who lived and died over a period of almost 200 years, and they were buried here by virtue of their particular office or status in the monastery. Fifteen burials are represented within the chapter house, but only seven of these contained skeletal remains which could in any way be considered complete (Group A); three of these were abbots and four were monks. In addition, one intact grave lay just outside the chapter house (also Group A). Remains of two individuals were found in the layers associated with the robbing of G. 4 and G. 5 (Group B). The post-Dissolution robbing (F. 321 and associated features) of Graves 14, 15, 16, 17, 18, and 19 left remarkably few human bones (Group C); there was evidene for a minimum of only two individuals from these six abbot graves. In addition, a number of bones found in various other medieval and later layers are considered to have very probably derived from abbot graves (Group D). A minimum of two individuals are represented in Group D. On anatomical grounds, given the fragmentary nature of the skeletons in Groups B and C, it is possible that the remains from Group D came from some of the skeletons represented in Groups B and C, so the overall minimum number of individuals represented by the chapter house skeletal remains is 12. In the following interpretation, the remains from Groups A–D are considered together.

Table 4.3.1. Burials in the chapter house: minimum number of individuals

Group	Number of individuals
A. Identified graves	8
B. Robbing of G. 4 and G. 5	2 minimum[1]
C. Robbed abbot graves of F. 321	2 minimum[2]
D. Other chapter house layers	2 minimum[3]
Minimum number all sources	12

[1] Duplicate right metatarsals IV and V in Trench 2, Layers 502, 639, 282.
[2] Duplicate fragments of scapula in Trench 3, Layers 426 and 445.
[3] Two left metatarsals IV in Trench 1, Layer 288 and Trench 2, Layer 896. Two right metatarsals III in Trench 2, Layers 429 and 381.

Age and sex

Where it was possible to determine age and sex, each skeleton was found, as expected, to belong to an adult male. All, except that of Adam Rous (G. 6), were robust in size and shape. The sex discriminant function of Giles and Eliot was applied to the skulls of Prior Adam Wittenham (G. 7) and Abbot Warin of Cambridge (G. 12), the only skulls sufficiently preserved for the method; both fell confidently within male limits.[2]

The usual spread of ages from skeletal assemblages was not present; most individuals living to late middle age or older, the youngest was probably around 30–40 years and the oldest around 70 years old (see Table 4.3.2). The average age can be thought of as about 45–50 years. The pelvic fragment in Trench 3, Layer 324 (Group C) is a possible outlier, being aged at around 20–30 years on rather sparse evidence.

These Benedictine monks were amongst the most privileged in the land and would have enjoyed good nutrition and a comfortable life within a supportive and self-sufficient community. Many of the abbots were of noble birth; some were landowners who wielded considerable wealth and political power quite apart from that which resulted from their exalted position as abbot. Longevity might therefore be expected. In old age they would have been afforded reverence and care within this religious community. In illness they could expect some of the best treatment then available in a house famous for its medical care.

Non-metrical features

Only a small number of non-metrical features were observed and these are summarized in Tables 4.3.7–4.3.9. No such feature showed a particularly high frequency. Of interest, however, is the mastoid suture noted on the skull of Abbot Warin of Cambridge (G. 12), and the asymmetric skull shape of Robert of the Chamber (G. 23), which will be discussed later.

[1] Of necessity, the examination of these skeletal remains had to take place in 1979 before their reburial in the presbytery that autumn (see below, pp. 398–401). The methods used and the references given are of their time and no revision has been undertaken as access to the bones is no longer possible.
[2] Giles and Eliot 1962.

Table 4.3.2. Burials in the chapter house: age/sex structure

Group*	Grave or Trench, Layer	Estimation of age at death	Sex
A	G. 2	35–45	M
A	G. 6	40–50	M
A	G. 7	50–60	M
A	G. 11	30–40	M
A	G. 12	50–60	M
A	G. 13	50–70	M
A	G. 20	35–45	-
A	G. 23	40–60	M
B	G. 4/5	-	M
B	G. 4/5	50–70+	M
C	2, 677	60–70	M
C	2, 682B	50–60	-
C	3, 321	35–45	M
C	3, 324	20–30	M
C	3, 516	*c.*40	M
D	2, 257	35–45	-
D	2, 429	40+	-
D	4, 108	35–55	-

* See Table 4.3.1

Table 4.3.3. Burials in the chapter house: stature estimations from intact long bones

Grave	Long bones used	Estimation of stature
6	Femur	156.72 ±3.27 cm; 5 ft 2 in. ±1.3 in.
7	Tibia+femur	178.92 ±2.99 cm; 5 ft 10 in. ±1.2 in.
11	Tibia+femur	176.31 ±2.99 cm; 5 ft 9 in. ±1.2 in.
12	Humerus	168.12 ±4.05 cm; 5 ft 6 in. ±1.6 in.
13	Ulna	177.33 ±4.32 cm; 5 ft 10 in. ±1.7 in.
13	Femur (recon.)	184.80 ±3.27 cm; 6 ft 1 in. ±1.3 in.
23	Tibia+femur	170.41 ±2.99 cm; 5 ft 7 in. ±1.2 in.
4/5	Humerus	175.50 ±4.05 cm; 5 ft 9 in. ±1.6 in.

Stature

The statures of seven of these men, estimated using the Trotter[3] regressions, are summarized in Table 4.3.3. As already stated, because of the nature of this sample, comparisons with other populations are not very useful and detailed statistical analyses are not possible; any comments should therefore be treated with great caution.

The average height of these seven was 171.9 ±3.15 cm or approximately 5 ft 8 in., and that of the modern British male is 174.7 cm or 5 ft 9 in.[4] Existing estimates of stature from medieval and Anglo-Saxon skeletons are based on femoral length and use Trotter and Gleser's regressions,[5] whereas those here are based on the best available long bone with the smallest standard error of measurement, and Trotter's regressions.[6] The two series are therefore not strictly comparable, but in the absence of other data, the comparison is made (Table 4.3.4). The St Albans medieval individuals are seen to be closely similar in stature to the Rothwell medieval individuals; both are slightly smaller than the modern population.

[3] Trotter 1970.

[4] Tanner *et al.* 1966.
[5] Trotter and Gleser 1958.
[6] Trotter 1970.

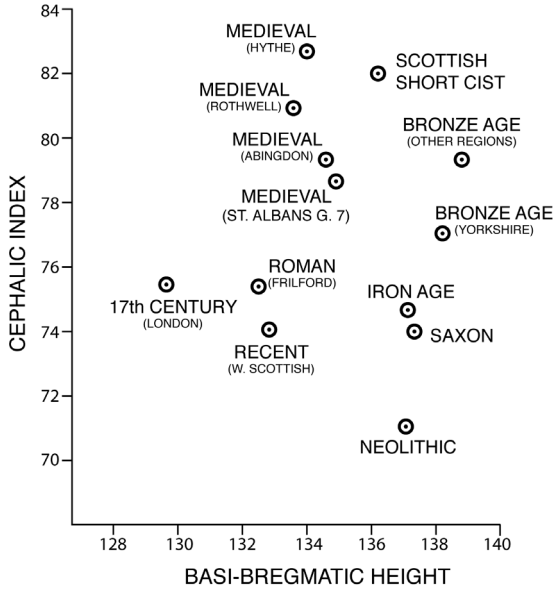
Table 4.3.4. Stature of Anglo-Saxon, medieval, and modern individuals (modified from Wells 1963)

Series	Number	Trotter and Gleser 1958	Trotter 1970	Tanner *et al.* 1966
Anglo-Saxon (Munter)	161	173.2	-	-
Anglo-Saxon (St Albans)	10	-	172.3	-
Medieval (Rothwell)	76	171.3	-	-
Medieval (St Albans)	7	-	171.9	-
Modern British males	1,360	-	-	174.7

Skeletal indices

The available measurements are given in full below;[7] only the cephalic index will be discussed in this context. It was possible to arrive at a cephalic index for only three skulls. The skulls of Prior Adam Wittenham (G. 7) and Abbot John de la Moot (G. 13) were mesocephalic (indices of 78.4 and 75.4 respectively), while the skull of Robert of the Chamber (G. 23) was unusual, being hyperbrachycephalic with an index of 89.0. Such an extremely broad skull is atypical and may suggest a different population, or ethnic, group. This skull is discussed further later in this section.

Brothwell plots cephalic index against basi-bregmatic height (H') for various population groups.[8] Unfortunately, due to the lack of complete data, it has only been possible to enter one individual on this plot. Nevertheless, Illus. 4.3.1 clearly shows that the skull of Prior Adam Wittenham (G. 7) is close to the other medieval series (especially Abingdon) when compared in this way.



Illus. 4.3.1. Comparison of various British (male) groups: cephalic index and vault height (after Brothwell 1972).

Health and disease

General health in this group, as evidenced by skeletal indicators, was good. No bony tumours, nutritional disorders (excepting enamel hypoplasia), or congenital defects were apparent. Instead the evident pathology is restricted to dental problems and degenerative joint conditions. Many illnesses, including soft tissue lesions, would of course leave no skeletal reflection. The cause of death can in no case be determined, but it is likely that infectious diseases, pneumonia, heart disease, and stroke would have been common causes.

Very little injury was found. Of possible occupational pathology, no squatting facets were seen,[9] although the marked arthritic changes noted in five of the skeletons may be evidence of 'monk's knees'; it is noteworthy that in six cases there is evidence of marked arthritic changes to the elbow joints. It is tempting, albeit entirely speculative, to suppose that, taken together, this might be suggestive of 'prayer posture pathology'.

The picture is of generalized degenerative disease or injury[10] within the context of a safe, supportive community.

Dental health

Evidence of caries, abscesses, ante-mortem tooth loss, enamel hypoplasia, periodontal disease, and dental attrition. These findings are summarized in Table 4.3.5.

As usual in archaeological remains not all skulls were well enough preserved to give a total picture of dental health, and there were some in which, although the alveolar bone remained, the teeth themselves had disappeared. It is best in these circumstances to give

[7] See below, pp. 349–53.
[8] Brothwell 1972.
[9] See Brothwell 1972.
[10] See below, p. 349–50.

Table 4.3.5. Burials in the chapter house: dental health

Source	Grave or Trench/Layer	Ante mortem loss	Caries	Abscesses	Periodontal disease	Enamel hypoplasia	Calculus
A	G. 2	4/14	0/5	1/14	Medium	-	-
A	G. 6[1 2]	2/32	9/30	3/32	Considerable	-	-
A	G. 7	2/32	2/30	0/32	Slight	-	Considerable in parts
A	G. 11[3]	12/26	0/19	1/26	Medium	-	Generally mild
A	G. 12[4]	6/16	1/5	2/16	Considerable	-	-
A	G. 13	10/32	4/17	3/32	Slight-medium	Medium	Medium-considerable
A	G. 23[5]	0/32	2/31	0/32	Medium	Slight	Slight-medium
B	G. 4/5[1]	9/11	0/1	1/11	Considerable	-	-
C	3, 321[6]	1/14	0/7	0/14	Considerable	-	Slight
D	2, 257	0/2	0/2	0/2	Considerable	-	-
D	3, 239[6]	1/8	-	0/8	-	-	-

[1] Severe alveolar recession. [2] Reduced upper M3s. [3] Malocclusion, overbite and abnormality. [4] Misplaced premolars. [5] Webbed root on upper right M2, extensive wear. [6] M3 agenesis.

a series of frequencies as percentages of the available sockets or teeth.

Caries: About three-quarters of the skulls with teeth *in situ* showed the presence of caries. This varied from single pinhole cavities to extensive carious decay. Some twelve per cent (18/147) of the chapter house teeth had caries. This compares rather favourably with the frequency given by Brothwell for this period, a time when in post-conquest Britain a sharp increase in caries incidence has been noted and is thought to be due to the increased use of refined sugars and grains.[11] In this sample it is mainly the molars and premolars that are affected with occlusal, buccal, lingual, and neck caries but very little interstitial decay.

Ante-mortem tooth loss: Of the available sockets, twenty-two per cent (47/219) showed evidence, by partial or complete healing, of tooth loss before death. This figure is considerably greater than that recorded by Brothwell (approx. fourteen per cent).[12] This may be due to the fact that these individuals actually lived rather longer than the general population and that they consequently lost more teeth before death. Senile changes were noted to several jaws. Alternatively, it may be an artefact of the small sample size. Several teeth remained only as roots and it is unclear whether these teeth had worn down this far or whether carious destruction of the crown had taken place before subsequent attrition of the stumps. Such teeth have not been scored as carious.

Chronic dental abscesses: About half the skulls available (6/11) showed at least one chronic abscess and 11/219 or five per cent of the tooth sockets were affected. Once again this is consistent with other published figures.[13] Acute abscesses which do not perforate the bone cannot, of course, be identified.

Periodontal disease: Some degree of this condition was seen in all the available dentitions, mostly to a medium or considerable extent. This infection of the soft tissues of the mouth, and of the alveolar bone, causes recession of the bone and may eventually lead to tooth loss. The high incidence of this disease in the chapter house skeletons may be associated with the similarly high incidence of ante-mortem tooth loss.

Enamel hypoplasia

This was noted in two mouths, those of Abbot John de la Moot (G. 13) and Robert of the Chamber (G. 23). It was seen to a slight extent on Abbot John de la Moot's upper incisors especially the central ones, but it was seen on all of Robert of the Chamber's teeth including the M3s. Enamel hypoplasia reflects an upset during the formation of the teeth, such as could be caused by a period of acute illness or nutritional deficiency during childhood.

Calculus: Five dentitions were affected by calculus, usually on the lingual surface of the lower incisor. The dentition of Adam the Cellarer (G. 11), however, shows

[11] Brothwell 1972.
[12] ibid.
[13] ibid.

a different picture. Here calculus is found throughout the mouth, is seen on the occlusal surface of three of the 'solitary' molars and is considerable on the aslant canine. In fact, this does not add any information to this dentition but rather confirms the malocclusion, aslant eruption, irregular arcade, and differential wear already noted. Calculus often forms on surfaces which have passed out of use.

Other anomalies: M3 agenesis was confirmed radiographically in the lower jaws of G. 4/5 (Trench 3, Layer 321) and in Trench 3, Layer 239 (Group D). In Adam Rous's skull (G. 6) the upper M3s were notably reduced in size. The upper right premolars in Abbot Warin of Cambridge's skull (G. 12) were misplaced and somewhat atrophied. Overbite was noted in two skulls, those of Adam the Cellarer (G. 11) and Abbot John de la Moot (G. 13). In every other case where both upper and lower dentitions were preserved an exact edge-to-edge bite was seen, characteristic of population groups whose diet has long been high in fibre.

General comments: A feature of these teeth was the generally high extent of wear associated with rather little caries when compared to modern-day standards. It seems that a diet of unrefined sugars and grains wore the teeth down rather than encouraging decay, maintaining well-developed musculature, robust lower jaws, and edge-to-edge bite.

Degenerative disease

Osteoarthritis: Most of the arthritic change is degenerative in nature, the normal result of wear and tear to the joints with age. Almost all individuals begin to show some arthritic change by the age of 35–40 years and as we have seen, this is sometimes used as a tool in age estimation. By the age of 60 or 70, these changes are often extensive even in otherwise healthy individuals. It is no surprise therefore that this collection of skeletons shows considerable arthritic change.

The chapter house bones most affected by arthritic change are those of Abbot William of Trumpington or, more probably, Abbot John de Hertford (G. 4/5),[14] Prior Adam Wittenham (G. 7), Abbot Warin of Cambridge (G. 12), Abbot John de la Moot (G. 13), and Robert of the Chamber (G. 23), and also the bones in Trench 2, Layer 429 (Group D). Most regions of the body are affected to some extent although by far the most commonly involved is the vertebral column, especially the thoracic and lumbar regions, the major load-bearing joints. In the main, the large joints are not severely affected, only one individual, Robert of the Chamber (G. 23), showed changes to the femoral head and acetabulum. However, in five cases, the knee joint is quite badly affected and in six cases the elbow joint is involved. Other regions of the body commonly affected are the pectoral girdle (shoulder), lower leg, hands, feet, and iliac crests, in order of frequency. The mandibular articulation is only affected in one case, Robert of the Chamber (G. 23). The presence of extensive changes to the hands and feet of Prior Adam Wittenham (G. 7) have already been noted.

There are five examples of eburnation in this assemblage. This arises when the interarticular cartilage degenerates and bone is left to rub on bone with no cushion, resulting in an ivory-like polished facet. It is usually due to a somewhat severe stage of osteoarthritis.

It should be remembered that most of these skeletons were by no means complete. The regions of the body seen to be affected are directly related to the parts of the skeleton available for examination. Nevertheless, for the 'complete' skeletons of Prior Adam Wittenham (G. 7), Adam the Cellarer (G. 11), Abbot John de la Moot (G. 13), and Robert of the Chamber (G. 23), the picture is thought to be reasonable.

Ankylosing spondylitis: The most severe arthritic changes were seen on the remains from the robbing layers of G. 4 and G. 5, that is, Abbot William of Trumpington (G. 5) or, more probably, Abbot John de Hertford (G. 4).[15] This pathology is characteristic of a condition called ankylosing spondylitis. Of unknown aetiology, this condition causes the ligaments of the spine to ossify and the lateral joints to ankylose together in a bony union that allows no articular movement. Classically, the condition results in a so-called 'bamboo' or 'poker' spine, of which G. 4/5 provides an excellent example (see Illus. 4.3.27).

It seems more than likely that the arthritic remains are, indeed, those of Abbot John de Hertford. A reference to these remains was made in an address at the reburial of the abbots by Archbishop Robert Runcie (then Bishop of St Albans) 'I shall particularly remember John Hertford who has left behind a reputation for long hours of silent prayer, punctuated by sometimes savage bouts of temper. I found this only too understandable when I was shown his remains, with the terrible evidence of spinal arthritis. It took little imagination to realize how much pain he must have suffered towards the end of his life.[16]

Infective disease: On X-ray images several bones showed a very thin shadow on the outer surface of the cortical layer. This was seen only on long-bone shafts and is suggestive of what is often referred to in the literature as periostitis. Whilst there is some controversy about

[14] See below, p. 375–8.

[15] For Abbot John's recorded infirmities, see below, pp. 375–8.

[16] See Priest and Clark 2019.

Table 4.3.6. Burials in the chapter house: pathology
(+ indicates present)

Group*	A	A	A	A	A	A	B	D	D
Grave, Trench or Layer	G. 2	G. 7	G. 12	G. 13	G. 20	G. 23	G. 4/5	2, 429	3, 478
Severe arthritic condition:									
Ankylosing spondylitis (bamboo spine)	-	-	-	-	-	-	+	-	-
Moderate to severe arthritic change:	-	-	-	-	-	-	-	-	-
Generalized, including vertebral	-	+	+	+	-	+	+	+	-
Extensive, including hip + mandible	-	-	-	-	-	+	-	-	-
Especially hands and feet	-	+	-	+	-	-	-	-	-
Eburnation	-	+	+	+	-	-	+	-	+
Fractures:									
Fibula	+	-	-	-	-	-	-	-	-
Rib	-	+	-	-	-	-	-	-	-
Unidentified early trauma; femur shaft	-	-	-	-	-	+	-	-	-
Possible infective disease	-	-	-	-	+	-	-	-	-
Mastoiditis	-	-	-	-	-	+	+	-	-
Mucocele	-	-	-	+	-	-	-	-	-
Gout	-	+	-	-	-	-	-	-	-

* See Table 4.3.1

the terminology applied to such shadows, in one case in this series, the tibial shaft of Bartholomew Wendover (G. 20), such a thickening has been described by radiologists as periosteal new bone formation, the aetiology of which is obscure (see Illus. 4.3.21).

Mastoiditi: Two cases of possible mastoiditis were seen radiographically. In G. 4/5 the right mastoid showed a distinct lack of pneumatization and Robert of the Chamber's (G. 23) left mastoid was similarly less well aerated than the right. Both are suggestive of a chronic mastoiditis infection.[17]

Sinusiti: The lack of aeration of the sphenoid sinus, seen on an X-ray of Abbot Warin of Cambridge's skull (G. 12), is thought to be the result of normal variation rather than of a sinusitis.

Mucocel: The possible presence of a mucocele or pus-filled cavity in the left maxillary antrum of Abbot John de la Moot's skull (G. 13) is noted from the radiograph.

Injury

The only clear injuries seen consist of two healed fractures: one, a healed fracture to Abbot Ralph Gubion's fibula (lower leg bone) (G. 2), and the other a healed rib fracture to Abbot Warin of Cambridge (G. 12). A small femoral bump or swelling above the left knee of Robert of the Chamber (G. 23) suggests an early injury but the nature of this is not clear.

Other pathology/anomalies (see Table 4.3.6)

Gout: There is one example of this disease, in the case of Prior Adam Wittenham (G. 7). Juxtarticular erosion is especially seen on Metatarsal I and radiographs confirm the presence of this disease. Gout is a disorder of purine metabolism, characterized by attacks of arthritis at first to the big toe and then elsewhere, often on the feet. It is often hereditary and is associated with a high level of uric acid in the blood, possibly exacerbated by over-indulgence of food and drink.

Frontal sinuses: The almost complete absence of frontal sinuses was noted on Abbot Warin of Cambridge's skull (G. 12). Contrastingly, very large sinuses are seen on Robert of the Chamber's skull (G. 23) and very asymmetrical ones on Abbot John de la Moote's skull (G. 13), the right side being one-third larger than the left (see Illus 4.3.17, 4.3.20, and 4.3.24).

Hyperbrachycephaly: Robert of the Chamber's skull (G. 23) was notably heavy and thick and was hyperbrachycephalic. In addition, it was somewhat asymmetrical with the face not square to the cranium and with some bossing on the right side. The cranium

[17] For G. 23 this is seen in Illus. 4.3.24. For G. 4/5 this is seen in Illus. 4.3.29.

Table 4.3.7. Burials in the chapter house: the eight identified graves (Group A)
(+ one, ++ two, or +++ three present)

Grave	2	6	7	11	12	13	20	23
Sex	M	M	M	M	M	M	-	M
Estimated Age in yrs	35–45	40–50	50–60	30–40	50–60	50–70	35–45	40–60
Estimated Height in cm	-	156.72	178.92	176.31	168.12	184.80	-	170.41
Caries	0/5	9/30	2/30	0/19	1/5	4/17	-	2/31
Abscesses	1/14	3/32	0/32	1/26	2/16	3/32	-	0/32
Ante-mortem tooth	4/14	2/32	2/32	12/26	6/16	10/32	-	0/32
Enamel Hypoplasia	-	-	-	-	-	+	-	+
M3 Agenesis	-	-	-	-	-	-	-	-
Lambdoid Wormians	-	+++	-	-	+++	-	-	-
Parietal Notch Bones	-	-	+	-	-	-	-	-
Tori Mandibulares	-	-	++	-	-	-	-	-
Tori Maxillares	++	-	-	-	++	-	-	-
Tori Palatines	-	-	-	-	+	++	-	-
Coronal Ossicle	-	-	-	-	-	+	-	-
Ossicle at Lambda	-	+	-	-	-	-	-	-
Ossicle at Asterion	-	-	-	-	-	-	-	+
Cephalic Index	-	-	78.4	-	-	75.4	-	89
Severe Arthritic Condition	-	-	-	-	-	-	-	-
Moderate to severe arthritic change	-	-	+	-	+	+	-	+
Eburnation	-	-	+	-	+	+	-	-
Fractures	+[1]	-	-	-	+[2]	-	-	-
Mastoiditis	-	-	-	-	-	-	+	-
Mucocele	-	-	-	-	-	+	-	-
Auditory ossicles	-	++	-	-	-	-	-	-
Hyoid	-	+	-	+	+	-	-	-
Styloid process	-	-	+	-	-	-	-	-
Other features	-	-	[3]	-	[4]	[5]	-	[6]

[1] Healed fractured fibula. [2] Healed fractured rib. [3] Gout, striking maxillary depressions above canines. [4] Bilateral mastoid sutures; virtual absence of frontal sinus; well defined pituitary fossa; ossified throat cartilage. [5] Bifurcating jaw symphysis; asymmetric frontal sinuses. [6] Asymmetric, hyperbrachycephalic skull; unidentified early trauma to femoral shaft.

had a very rounded appearance from above, from the side and front. This is reflected in the whole skull and in the rounded dental arcade. A very broad maxilla and vault but rather narrow zygoma was also noted. After X-ray, however, no particular pathology was recognizable, and the features seen may therefore simply be the result of natural variation.

In general, it seems from the archaeological evidence that these abbots and monastics were of rather tall stature, of good general health, and lived to a ripe old age. One might envisage a life of comparative ease, non-violence, and well-being within the Benedictine community of St Albans, rather at odds with the views expressed in the documentary sources that they lived in dangerous times under constant threat during the Baronial revolt at the end of King John's reign and Prince Louis' invasion.[18]

[18] *Gesta Abbatt.*.

Remains in context: a comparison of the pre-chapter house and chapter house skeletal remains

16 intact Anglo-Saxon graves and 15 medieval graves were excavated, as well as one grave (G. 20) found in the cloister walk outside the western door of the chapter house. In addition, numerous fragments of bone were found outside the distinct graves. The bones on this site were generally characterized by disturbance and this was particularly true of the abbots' graves, all but one of which had been robbed. Very few grave objects were found, and no clothing could be determined. The bones were generally in poor condition except for the medieval skulls which, when present at all, were usually intact. Only two cases of gross pathology were discovered namely, the case of ankylosing spondylitis in (either) Abbot John of Hertford (G.4) or Abbot William of Trumpington (G. 5), and the healed skull fracture in G. 22. Other minor fractures, pathology, anomalous dentition, etc., have been fully described in

Table 4.3.8. Burials in the chapter house: bones from the robbing of Graves 4 and 5 (Group B), and from F. 321 and associated features (Group C, the robbing of Graves 14, 15, 16, 17, 18, 19)
(+ one, or ++ two present)

Group*	B	C	C	C	C	C	C
Trench or Layer	2, 502	2, 677	2, 682B	3, 321	3, 324	3, 450	3, 516
Sex	M	M	-	M	M	-	-
Estimated Age in yrs	50–>70	60–70	50–60	35–45	20–30	-	*c.*40
Estimated Height in cm	175.50	-	-	-	-	-	-
Caries	0/1	-	-	0/7	-	-	-
Abscesses	1/11	-	-	0/14	-	-	-
Ante-mortem tooth	9/11	-	-	1/14	-	-	-
Enamel Hypoplasia	-	-	-	-	-	-	-
M3 Agenesis	-	-	-	2/2	-	-	-
Lambdoid Wormians	++	-	-	-	-	-	-
Parietal Notch Bones	-	-	-	-	-	-	-
Tori Mandibulares	-	-	-	++	-	-	-
Tori Maxillares	-	-	-	-	-	-	-
Tori Palatines	-	-	-	-	-	-	-
Coronal Ossicle	-	-	-	-	-	-	-
Ossicle at Lambda	-	-	-	-	-	-	-
Ossicle at Asterion	-	-	-	-	-	-	-
Cephalic Index	-	-	-	-	-	-	-
Severe Arthritic Condition	+	-	-	-	-	-	-
Moderate to severe arthritic change	-	-	-	-	-	+	-
Eburnation	+	-	-	-	-	-	-
Fractures	-	-	-	-	-	-	-
Mastoiditis	+	-	-	-	-	-	-
Mucocele	-	-	-	-	-	-	-
Other features	+[1]	-	-	-	-	-	-

* See Table 4.3.1. [1] Ankylosing spondylitis; chronic mastoiditis.

the chapters on the pre-chapter house burials[19] and the chapter house graves.[20]

It is noteworthy that the two series, the Anglo-Saxon and the medieval, showed certain distinctive characteristics. They differed somewhat in age, most of the medieval individuals being over 45 years of age (with the possible exception of Trench 3, Layer 324 (Group C) who may have been under 30), whereas the remains from the intact Anglo-Saxon graves were typically younger, with a skewed distribution towards the middle-aged groups as follows: two individuals between 17–25 years, ten between 25–45, and two between 45–55. This, and the fact that all the burials were apparently of male individuals, might support the notion that the pre-chapter house graves represented a cemetery that once served the Anglo-Saxon monastery.

The average stature of the pre-chapter house assemblage was 172.3 ±2.31 cm (5 ft 8 in), comparing closely (about 1 cm shorter) with the Anglo-Saxon height quoted in Brothwell and Higgs.[21] The average stature of the chapter house population was 171.9 ±3.15 cm (5ft 9 in), a little taller than the medieval height quoted by Brothwell and Higgs.[22] By comparison, the average height of the modern British male is 174.7 cm (5 ft 9 in).[23]

These two St Albans series therefore reflect the somewhat taller height of Saxons over medieval populations referred to in the literature (see Table 4.3.4) and both were rather shorter than modern-day Britons, an observation consistent with that in Brothwell.[24] As far as non-metrical features are concerned, the small sample size does not allow true frequency counts. It should be noted that the Anglo-Saxon sample contained three examples of M3 agenesis (only one in the medieval series) and two examples of metopism (none in the medieval series). Nevertheless, in general, there

[19] See above, pp. 318–35.
[20] See pp. 336–83.
[21] Brothwell and Higgs (eds) 1969.
[22] ibid.
[23] Tanner *et al.* 1966.
[24] Brothwell 1972.

Table 4.3.9. Bones from other chapter house layers (Group D*)
(+ indicates present)

Trench or Layer	2, 257	2, 429	3, 478	4, 108	3, 239
Sex	-	-	-	-	-
Age	35–45	>40	-	35–55	-
Height	-	-	-	-	-
Caries	0/2	-	-	-	-
Abscesses	0/2	-	-	-	0/8
Ante-mortem tooth	0/2	-	-	-	1/8
Enamel Hypoplasia	-	-	-	-	-
M3 Agenesis	-	-	-	-	1/1
Wormians	-	-	-	-	-
Parietal Notch Bones	-	-	-	-	-
Tori Mandibulares	-	-	-	-	-
Tori Maxillares	-	-	-	-	-
Tori Palatines	-	-	-	-	-
Coronal Ossicle	-	-	-	-	-
Ossicle at Lambda	-	-	-	-	-
Ossicle at Asterion	-	-	-	-	-
Cephalic Index	-	-	-	-	-
Severe Arthritic Condition	-	-	-	-	-
Moderate to severe arthritic change	-	+	+	-	+
Eburnation	-	-	+	-	-
Fractures	-	-	-	-	-
Mastoiditis	-	-	-	-	-
Mucocele	-	-	-	-	-
Other features	-	+[1]	-	-	-

* See Table 4.3.1. [1] Pseudo-epiphysis metatarsal I.

seem to be more non-metrical features associated with the medieval individuals than with the Anglo-Saxons. There is also noticeably more osteoarthritic change in the chapter house graves than among the pre-chapter house burials, but this probably reflects the older ages of the abbots and other notables.[25] Cranial index was not different between the series. It is often said that medieval populations can be distinguished from Anglo-Saxons by their brachycephaly but this is not borne out in this small sample.

Finally, the incidences of dental health characteristics show contrasting differences between the two series. The Anglo-Saxon individuals apparently had extremely good dental health as evidenced by tooth loss (two per centof teeth), caries (four per cent of teeth), and abscess formation (one per cent), compared to the figures for medieval individuals (twenty-two per cent, twelve per cent, and five per cent respectively), even though the Anglo-Saxons had much more enamel hypoplasia (53%:18%) and calculus (92%:45%). This pattern strongly reflects that given by Brothwell, who states that the sharp increase in frequency of caries (and tooth loss) in Britain after the Anglo-Saxon period is most likely correlated with the introduction of more refined sugars and flours.[26] It is also well known that where there is little dental caries, the frequency of calculus tends to be quite high, but this is not a causal relationship. It reflects rather the whole dental environment, pH status, and dietary characteristics pertaining in an individual mouth. The fact that the Anglo-Saxon sample shows fifty-three per cent of teeth with some degree of enamel hypoplasia (Brothwell finds fifty-eight per cent) may suggest a quite high frequency of childhood illness in this population or common nutritional deficiencies causing an interruption in the formation of enamel.

[25] It is tempting to suggest, as above, pp. 349 and 353, that the apparently greater frequency of knee and elbow arthropathy in the chapter house assemblage might be related occupationally to long periods of kneeling and prayer, an interpretation impossible to substantiate.

[26] Brothwell 1972.

CATALOGUE

Group A. Graves attributed to named individuals

G. 2 Ralph Gubion, abbot, 1146–51 (Illus 4.3.2 and 4.3.3)[27]

Disturbed burial in Barnack stone coffin, broken. The original burial (construction pit F. 548, Final phase 14, *c.*1110–51) was robbed, probably in the sixteenth century, and suffered further disturbance in 1937 (F. 134 and F. 348, both Final phase 42, 1937–40). Remains found in F. 134 (Trench 2, Layers 238, 256) and, mostly, in F. 348 (Trench 2, Layer 735). Associated finds: none.

Similarities in preservation, age estimate, and size suggest that the bones from Trench 2, Layers 238 and 256 are probably from the same individual as those in Trench 2, Layer 735.

The remains in summary: a single adult male probably aged between 35 and 45 years, showing evidence of a healed fracture to the fibula. Highly fragmented and almost entirely decomposed skeletal remains: fragments of cranial vault, left temporal bone, and basi-occipital bone. Part of right and left maxilla and palate with five teeth. Three thoracic vertebrae and part of atlas. Seven rib fragments, none of the pectoral girdle. Almost complete right humerus and small parts of the shafts of a right radius and left and right ulna. Right metacarpal III, two medial phalanges. Part of left ilium including sacro-iliac joint, part of left acetabulum, and fragmentary sacrum. Very little of the fibulae, none of the tibiae. Left calcaneum, left lateral cuneiform, four left and three right metatarsals, five phalangeal elements.

The narrow sciatic notch on the pelvis, very large mastoid on the skull, and the presence of a distinct supra-meatal ridge are male features.

Dental health: ante-mortem tooth loss amounts to 4/14. Caries 0/14 but the ante-mortem loss and abscess suggest that caries once present. Five teeth only remain as follows:[28]

```
                                                A
8 r 6 X / 3 $     | / / / \ 5 X 7 /
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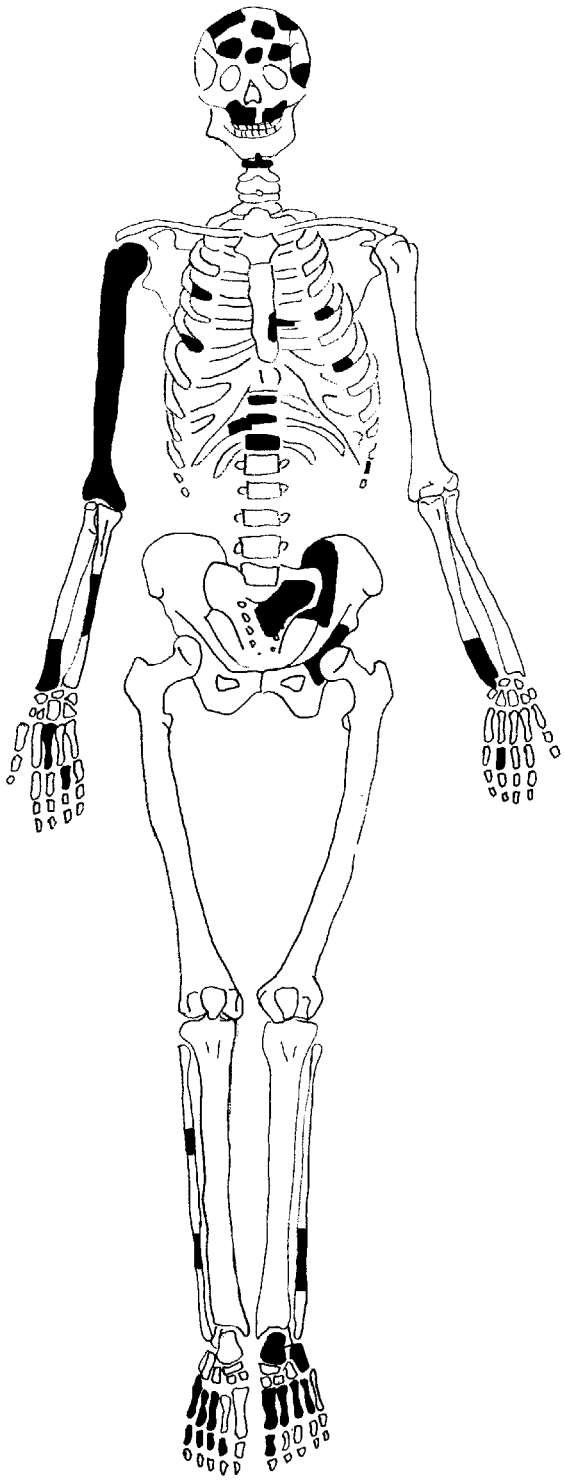
Ante-mortem tooth loss: of the 14 sockets available for examination, four showed loss before death and healing of the sockets. One of these, upper right M2, remains only as a lingual root. This root has been used



Illus. 4.3.2. Skeletogram of Abbot Ralph Gubion (G. 2).

[27] See above, p. 338..

[28] See below, pp. 347–8, for an explanation of the dental notation used in the schematic representation of the dental arcade.



Illus. 4.3.3. Fractured fibula of Abbot Ralph Gubion (G. 2).

as a functional surface and shows considerable wear. Caries: none found. Abscess: a clear abscess perforation above the mesial root of upper left M3. Periodontal Disease: seen to be medium to considerable on upper left M2 near to the abscess.

Pathology: arthritic changes: From available evidence, only very slight roughening to the inter-vertebral surfaces and slight bordering to the joints. The appearance is of the normal changes associated with ageing. Injury: a healed fracture to the fibula (see Illus. 4.3.3) was confirmed radiographically. This injury was sustained at least two years (probably considerably longer) before death. It has resulted in deformity in shape due to ossified callus material.

Non-metrical features: a small maxillary torus between upper left M1 and M2, and upper right M1 and M2.

Estimation of age: evidence is scant, but on the basis of dental attrition, an age of between 35 and 45 years is estimated. The skull fragments are not well enough preserved for age estimation, but the extent of suture separation in four out of six bones is consistent with this age.

Estimation of stature: not possible as no long bone sufficiently preserved.

G. 6 Master Adam Rous, physician, d.1379 (Illus 4.3.4 and 4.3.5)[29]

Undisturbed burial in a nailed wooden coffin beneath a broken Purbeck marble slab. Remains from Trench 2, Layer 809, F. 596 (Final phase 26, *c.*1350–96). Associated finds: none.

The remains in summary: a single small adult male aged approximately 40–50 at death. Rather delicate skeletal form and only 157 cm (5 ft 2 in.) tall. This individual had relatively poor dental health with malformed upper wisdom teeth and a high incidence of caries and abscesses. Incomplete skeleton, much eroded and fragile; mainly skull and leg bones.

Most of the calvarium in fragments and both squamous bones. The maxilla with dental arcade and teeth intact. The lower jaw reconstructed with all teeth (see Illus. 4.3.5). All cervical vertebrae including the atlas and axis, small fragments of thoracics, and lumbars. A few rib fragments and part of both clavicles. A very few splinters of unidentifiable shaft found in left upper limb area of the grave. Part only of right humerus and radius. No hand bones. Parts of left and right ilium and pubis. Complete left and right femoral shafts with eroded heads and condyles. Tibiae similarly preserved. Both patellae and most of the foot bones; all tarsals and metatarsals, only two phalanges. The hyoid bone and two auditory ossicles were also found in this grave.

A narrow sciatic notch, large mastoid, nuchal crest, supra-meatal ridge, brow, and glabella: all distinctly male characteristics. However, the bones were somewhat gracile. Thin skull bones, relatively weak temporal lines, and muscular attachments on the long bones suggest an individual of slight build.

Dental health: a well-preserved dentition showing poor dental health with 9/30 carious teeth; two teeth lost during life, considerable periodontal disease, and three large abscesses.[30]

!															!
A		A													A
C	C										C		C	C	C
8	7	x	5	4	3	2	1	|	1	2	3	4	5	6	7	8
X	7	6	5	4	3	2	1	|	1	2	3	4	5	6	7	8
		C													C	C

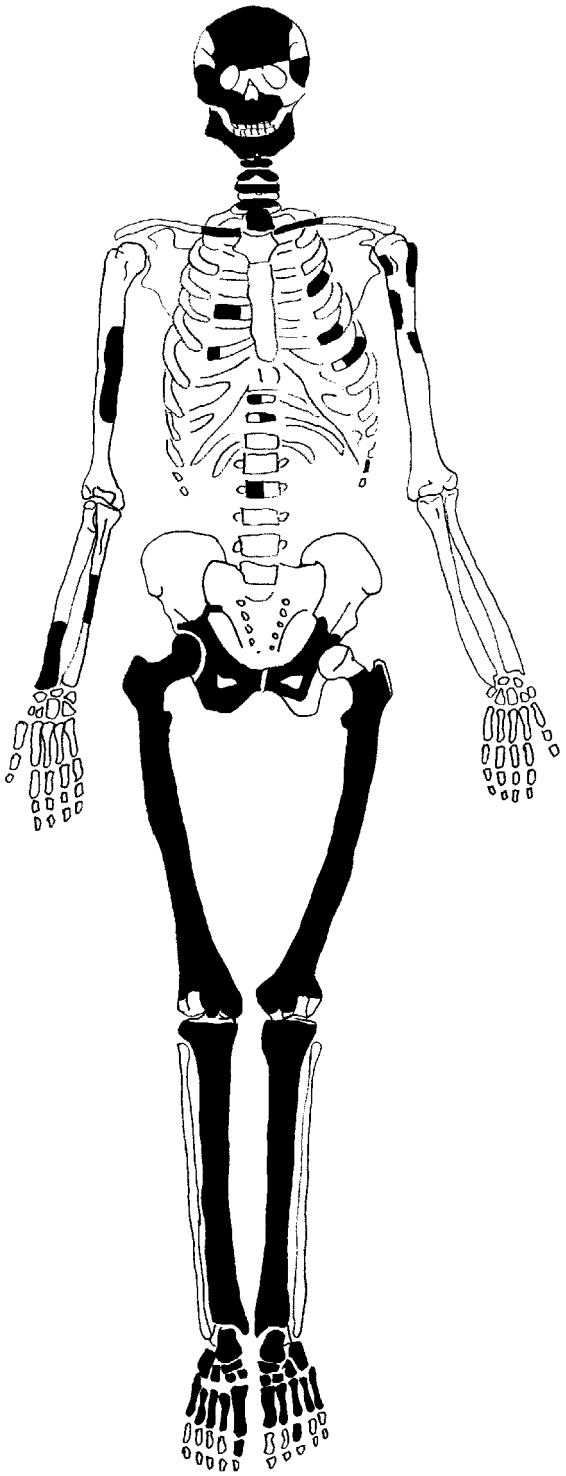
Ante-mortem loss: two teeth absent, both lost during life; one socket fully, the other partially healed. Caries: nine teeth affected, all badly. Upper right M2: advanced buccal, lingual, neck, and crown caries. Half the tooth missing. Upper right and left M3: crowns missing due to severe occlusal caries. Upper left PM1 and M1: interproximal distal neck caries. Lower left M2: buccal

[29] See above, pp. 355–7.

[30] For an explanation of the dental notation used in the schematic representation of the dental arcade, see this page and pp. 358, 362, 365, 368, 372 and 383.



A



B

Illus. 4.3.4A–B. Skeleton and skeletogram of Master Adam Rous (G. 6).



Illus. 4.3.5A–D. Skull of Master Adam Rous (G. 6).

and distal neck caries. Lower left M3: occlusal, buccal, distal neck caries with absence of much of the tooth. Lower right M1: buccal neck caries. In addition, there is some root decay (due to their exposure because of alveolar recession from periodontal disease) on the lower left and upper teeth. Periodontal disease: 'considerable'. It is probable that the two missing teeth were lost due to this condition and/or combined with extensive caries. Abscesses: evidence of three; above upper right M1, M3, and upper left M3. That above the M1 almost certainly resulted in loss of this tooth and the socket is partially healed.

The upper M3s (wisdom teeth) deserve special note. Both teeth were extremely reduced in size, their crowns absent due to caries, both with associated abscess perforations in the maxilla, and both with a single broad root, oblique to the arcade. Neither tooth would have reached the occlusal (biting) level and this would have encouraged the formation of caries. Both teeth were in the process of being lost at death. This tooth is subject to more variation than any other tooth in the mouth, variants often being smaller, and so malformed as to be considered anomalous.[31]

Generally good occlusion except for the M3s. Lower right M2 remained relatively unworn due to the loss of upper right M1. This suggests that this M1 was lost some considerable time before death even though the socket is only partially healed, or, that its crown had disintegrated some time before tooth evulsion.

Pathology: arthritic changes: There is a medium degree of osteophytosis on the vertebral bodies, only slight changes on the thoracics and cervicals but marked changes to the lumbars. A small amount of lipping is also seen on the articular surfaces of the clavicles.

Non-metrical features: Wormian bones: three, along the lambdoid suture where there is an ossicle at lambda.

Estimation of age: dental attrition of a 35–45-year-old. However, complete fusion of many of the cranial sutures suggests an older age. This, coupled with the degree of osteoarthritis, leads to an estimation of 40–50 years.

Estimation of stature: on the basis of femoral length: 156.72 ±3.27 cm or 5 ft 2 in. ±1.3 in.

[31] Downer 1975.

G. 7 Prior Adam Wittenham, d. after 1349 (Illus 4.3.6–4.3.10)[32]

Undisturbed burial, probably in a wooden coffin, beneath robbed Purbeck marble slab. Remains from Trench 2, Layer 827, F. 597 (Final phase 26, *c.*1350–96). Associated finds: none.

The remains in summary: a single adult male aged about 50–60 years at death. A large, robust, and muscular individual, approximately 179 cm (5 ft 10 in.) tall, with evidence of gout and some osteoarthritis to both hands and feet, knee, and elbow joints. Almost complete skeleton, preservation good; the long bones virtually complete, the skull and jaw in very good condition including a 4 cm intact styloid process and nasal septum. Small pieces only of scapula and clavicle. Upper limb and hand bones mainly intact. Very few poorly preserved ribs and only fragmentary remains of five lumbar and one thoracic vertebra. Complete left innominate of pelvis; right innominate missing pubis. Both articulate with sacrum. Posterior superior iliac spine, dorsal surface of sacrum and transverse processes of vertebrae all eroded.

The skeleton is robust throughout and shows all the male features. Hands, feet, and long bones highly robust with strong attachments for a heavy musculature.

Dental health: an almost complete dentition showing very good dental health. Ante-mortem loss of only 2/32. Large teeth with an even, edge-to-edge bite, showing no abnormality and in extremely good condition (see Illus 4.3.7–4.3.9). Only two teeth missing, upper left M2 and M3, as follows:

U																
C																
8	7	6	5	4	3	2	1	|	1	2	3	4	5	X	X	8
8	7	6	5	4	3	2	1	|	1	2	3	4	5	6	7	8
															C	

Both molars were lost quite early in life as evidenced by the lack of wear seen on their opposing lower dentition. Indeed, the lack of use of lower M2 has led to almost the only caries in the mouth. Caries: only two small pinhole cavities; an interproximal mesial cavity in upper right M1 and an occlusal in lower left M2. Only slight periodontal disease but considerable calculus on the lower incisors, though little elsewhere.

Pathology: arthritic changes: slight changes seen to one or two of the weight-bearing joints. Specifically, some osteophytes on the distal articulations of the right femur or knee joint. Also both tibiae and fibulae show a little spur formation. Those zygapophyses that are present also show a little lipping and outgrowth, as does the trochlea notch of the ulna and the iliac spine. Osteoarthritic changes are seen in the left hand, especially on the distal phalanx of the thumb where a large outgrowth is noted. The other phalanges are also affected (see Illus. 4.3.10). There are two small areas of eburnation on two of the left carpal bones. A small cyst on the triquetral was found radiographically. Prominent muscle attachment scars were present on the fingers. The left foot also shows arthritic changes especially on metatarsals I and IV and there is a degenerative cyst on the metatarsal III. The medial III phalanx is fused to the terminal phalanx. The calcaneum also shows some outgrowths (see Illus. 4.3.10).

These changes are widespread and are consistent with the type of osteoarthritis associated with ageing. There is some Juxtarticular erosion especially on metatarsal I, which strongly suggests the presence of gout; confirmed radiologically.

Non-metrical features: parietal notch bones were present on the right side. A small mandibular torus under lower right PM2 and a smaller one under lower right PM1. Widely flaring zygomas and striking maxillary depressions above canines.

Estimation of age: on the basis of dental attrition alone, an age of about 45+ is estimated. When cranial sutures and arthritic changes are also considered, an age of 50–60 years is suggested.

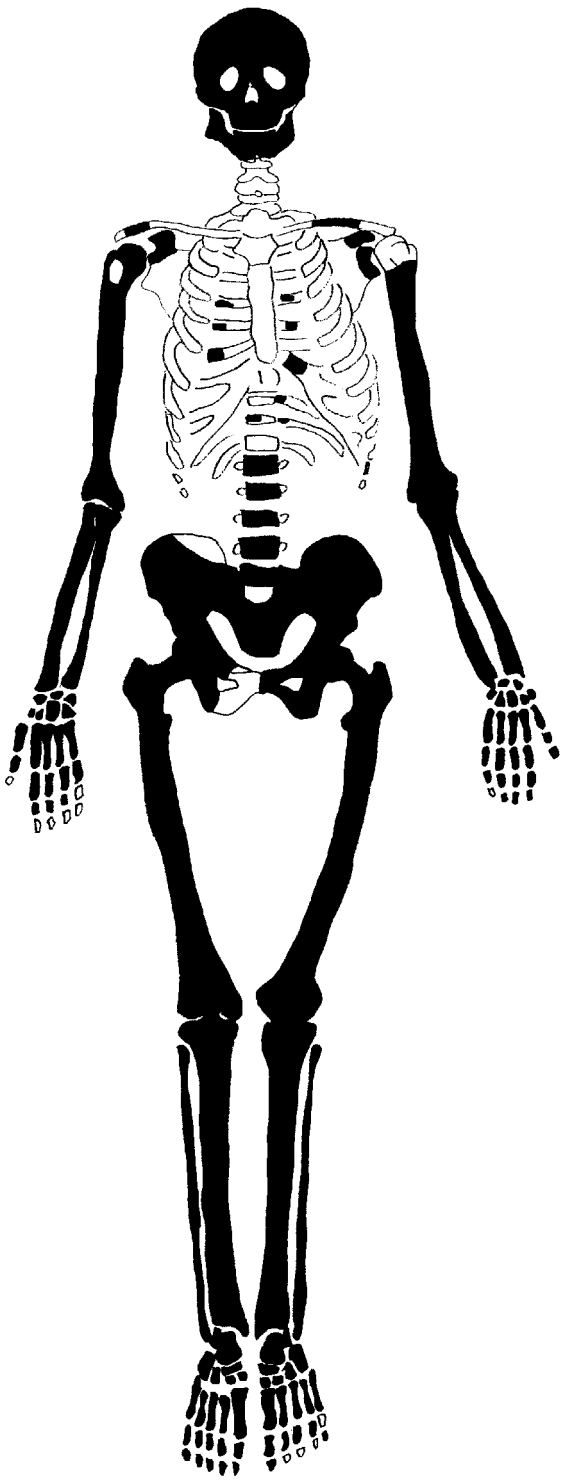
Estimation of stature: using the combined length of tibia and femur (which gives the lowest standard error according to Trotter and therefore the best estimate available), a height of 178.92 ±2.99 cm (5 ft 10 in. ±1.2 in.) is suggested.[33]

[32] See above, pp. 341–3.

[33] Trotter 1970.

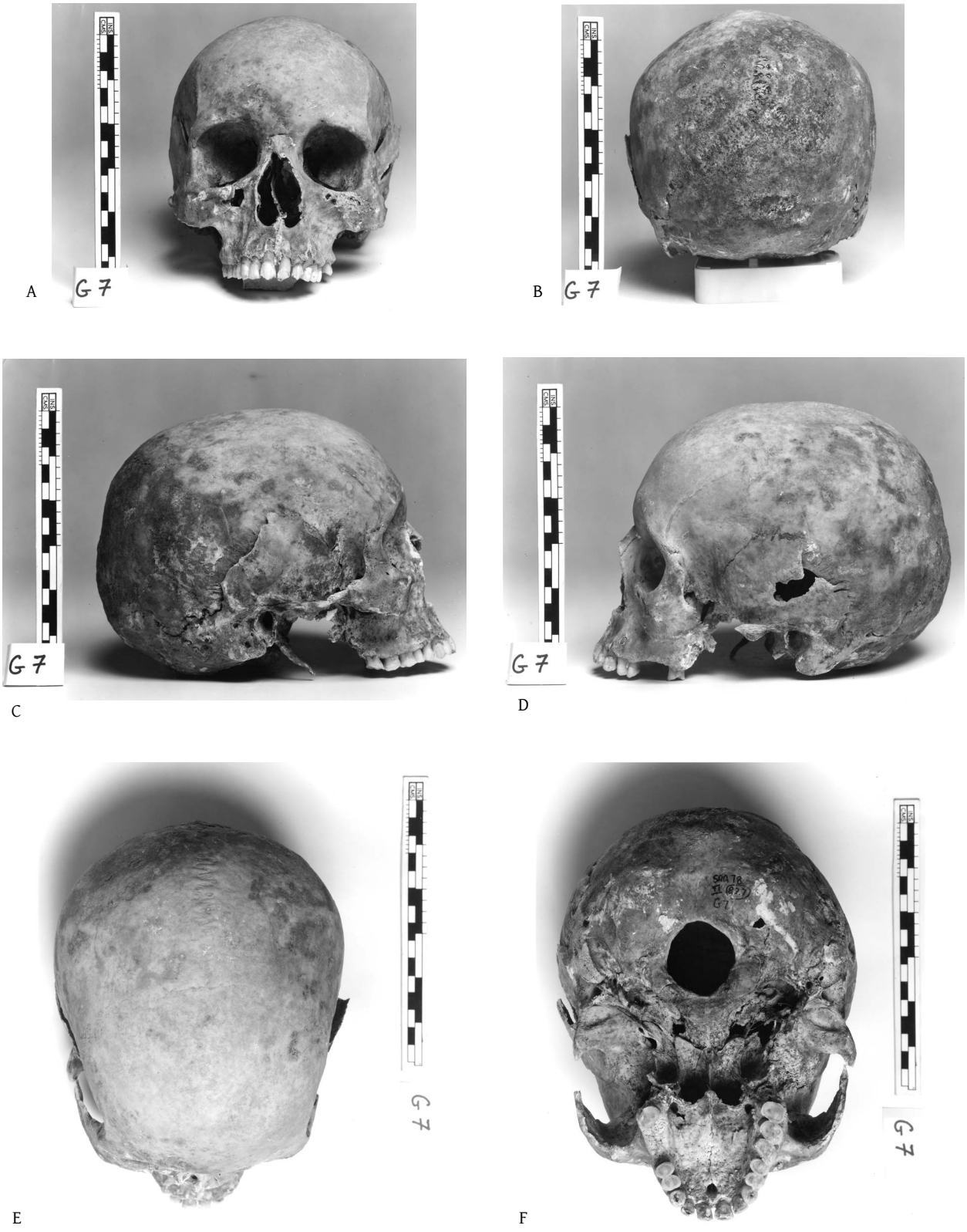


A

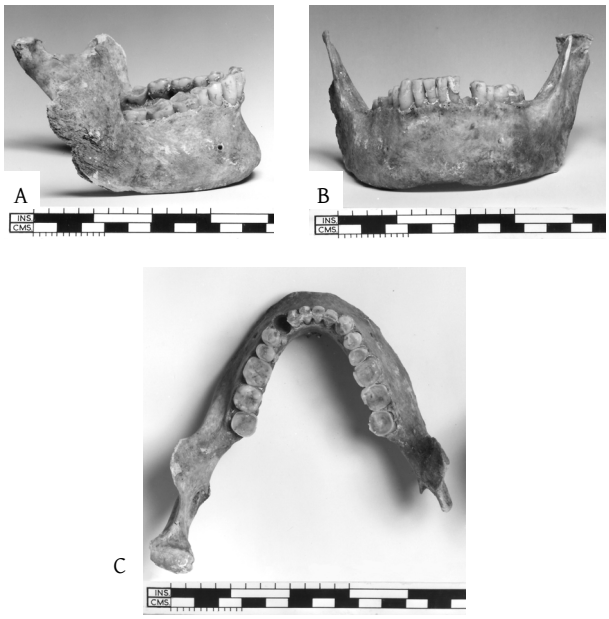


B

Illus. 4.3.6A–B. Skeleton and skeletogram of Prior Adam Wittenham (G. 7).



Illus. 4.3.7A–F. Skull of Prior Adam Wittenham (G. 7).



Illus. 4.3.8A–C. Jaw of Prior Adam Wittenham (G. 7).



Illus. 4.3.9. Skull of Prior Adam Wittenham (G. 7), showing the excellent edge to edge bite.



Illus. 4.3.10. Left foot and left hand of Prior Adam Wittenham (G. 7).

G. 9 Paul of Caen, abbot 1077–93, original burial site[34]

No remains. Coffin not present. The original burial (F. 598, Final phase 12, 1088–93) was translated in 1093–*c.*1110 (robbing pit F. 599, Final phase 13) to G. 16, which was later robbed by F. 321 and its associated features.[35] Associated finds: none.

G. 11 Adam the Cellarer, d.1167/76 (Illus 4.3.11–4.3.13)[36]

Undisturbed burial in a clunch stone coffin, intact beneath robbed Purbeck marble slab. Remains from Trench 1, Layer 374, F. 504 (Final phase 20, 1166–83). Associated find: copper-alloy book-clasp with leather strap and leather thong (*RF 250*). The bones found in F. 538 (Trench 1, Layer 442), the construction trench of G. 11, can only be derived from a pre-chapter house burial (see G. 36).[37]

Within the coffin, the complete skeleton of a single individual, the bones much fragmented and friable. Parts of the skull were preserved using PVA during excavation. Some bones, including the pelvis and upper limbs somewhat distorted in shape, probably due to the weight of overlying soil and the burial slab. In addition, both tibiae cracked (post-mortem) about 10 cm above each knee; the femora broken distally and both radii where they cross the ulnae. At the time of excavation, the calvarium was found to be hard onto the base of the stone coffin. The mandible was upside down over the cervical vertebrae and the teeth were scattered over the right shoulder. The condition of the bone was less good at the head end than at the feet, being at worst soft and friable. In addition, the ventral surface of all bones was noticeably better preserved than the dorsal surface perhaps due to the collection of water on the inside of the coffin/grave.

The remains in summary: a single adult male aged approximately 30–40 years at death. A robust figure of 176 cm (5 ft 9.5 in) with heavy musculature and no real evidence of arthritic disease. A mal-occluding dentition with overbite and considerable tooth loss during life.

Of the skull, only the calvarium including the orbits, part of both zygomas, the right maxilla, nasals, and hyoid bone were preserved, as well as most of the lower jaw. The spine fairly well preserved, all five lumbar vertebrae articulating with the sacrum and coccyx. Eleven thoracics; the vertebral bodies only of the cervicals.

Most of the ribs present, with the sternum well preserved. Of the pectoral girdle, the clavicles mostly complete, but fragments only of the scapulae. After some considerable reconstruction both humeri and ulnae complete, showing very prominent muscle attachments. Reconstruction was not attempted on the fragmentary radii. Both hands complete *in situ*, along with a misplaced terminal phalanx of one foot. Fairly well-preserved innominates, virtually complete after reconstruction, including sacrum and coccyx. Both femora complete and showing very well-developed linea aspersa and greater and lesser trochanters. The lower legs complete but poorly preserved and crushed. Of the feet, most tarsal bones, fragments of six metatarsals and of six phalangeal elements.

The shape of the pelvis, cranial features, and general robusticity are clearly male.

Dental health (see Illus. 4.3.12): no teeth *in situ*, reconstruction attempted with only limited success due to preservation. Fourteen teeth were confidently sited, the remaining five remained unplaced or 'solitary'.

A dentition with substantial (10–12/26) ante-mortem tooth loss; some aslant eruption due to overcrowding of the jaw; some abnormality in formation of the molar roots; overbite and malocclusion. No evidence of caries in the 19 available teeth, but widespread mild calculus formation. Ante-mortem loss was considerable, the lower jaw showing loss of at least five teeth prior to death. The alveolar bone of the remaining sockets was so badly eroded in places that the possibility of healing was not always ascertainable. A good deal of interpretation was required before the reconstruction shown below was acceptable.

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    $ 6 5 4 3 2 1 | / / 3 4 $
-------------------------------------
$x X X X 4 3 X X | 1 2 3 X 5 X X X$
                              eroded
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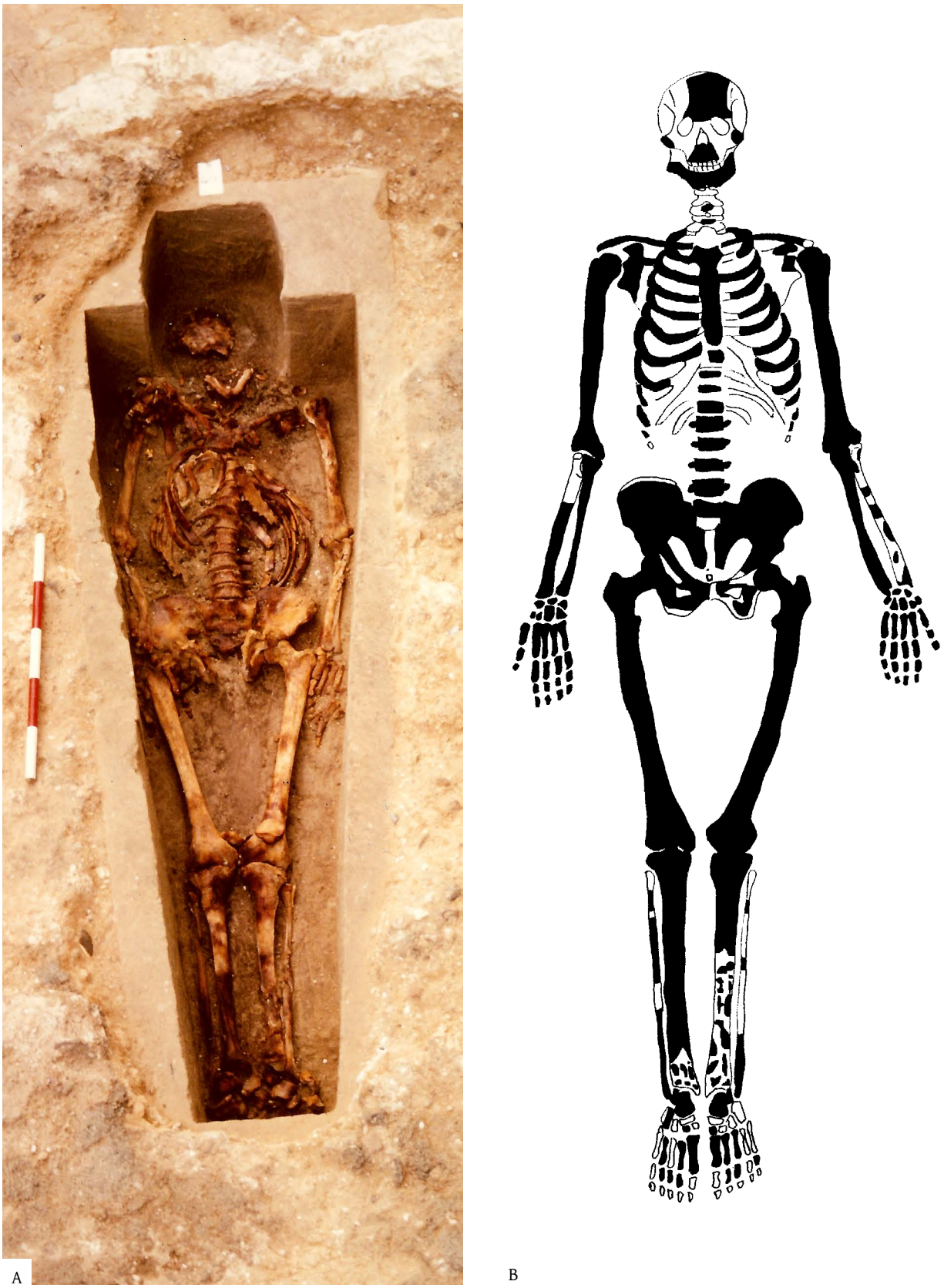
Two interpretations exist to explain the enlarged upper left incisor sockets and inward (mesial) angling of the upper left canine. Either a large abscess existed above the upper left incisors, resulting in the destruction of much of the alveolar bone and the inward slanting of the canine, or the canine erupted aslant due to overcrowding of the jaw. The latter interpretation is likely as the canine is at the same level as that of the right side. If once straight, this tooth would have been very much raised beyond the rest of the occlusal surface. In addition, this is the last front tooth to erupt

[34] See above, pp. 336–7.
[35] See below, pp. 379–81.
[36] See above, pp. 336–7.
[37] See above, p. 327.

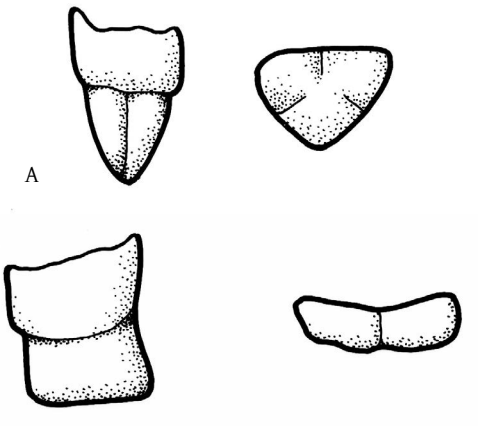


A B

Illus. 4.3.11A–B. Skeleton and skeletogram of Adam the Cellarer (G. 11).



Illus. 4.3.12A–C. Lower jaw dentition of Adam the Cellarer (G. 11).



Illus. 4.3.13A–B. Molar root anomalies in teeth of Adam the Cellarer (G. 11).

and the defect is quite well known.[38] The use of the upper left canine as a functional tooth in this position is confirmed by the lateral pattern of wear seen on this surface. Radiographically likely that abscess existed above upper left incisors, which were probably abnormally shaped and lost ante-mortem.

Remains also, of five fragmentary molars, two only existing as crowns, and one only as half a root and crown. One shows the normal triform root of the upper molars, and the other two show fusion of the roots, convergence and shortening. They are of two types as follows (Illus. 4.3.13):

Type (a) is the result of fusion of three roots; type (b) the result of fusion of two roots, that is, upper and lower molars respectively. The two remaining crowns probably also belonged to an upper and lower molar. Such fusion, a variation in root function, is very common, especially in third molars, and quite frequent in second molars. On this basis it is probable that two upper M3s, an upper and lower M2, and a lower M3 are represented.

Both arcades are somewhat irregular, and the teeth correspondingly show differential wear. The impression is of malocclusion and overbite. Caries: none apparent. Periodontal Disease: difficult to determine because of erosion but present at least to a medium degree. Abscess: a possible abscess above upper left incisors. Calculus: present to slight extent in the usual position at the neck of the teeth and on the occlusal surface of three of the 'solitary' molars. Considerable on the mal-occluding canine.

Pathology: no evidence of disease was found; osteophytosis was minimal and confined to the lumbar bodies, with some slight lipping to the fragment of right acromion.

Non-metrical features: no cranial or other features describable due to poor preservation.

Estimation of age: ageing based on teeth was difficult because of irregular attrition, but an age of between 25–35 is suggested by the wear on M1s and M3s. Very mild osteophytosis also suggests a fairly young individual. Estimated age range therefore 30–40 years.

Estimation of stature: based on combined femoral and tibial length, living stature was about 176.31 ±2.99 cm or 5 ft 9 in. ±1.2 in.

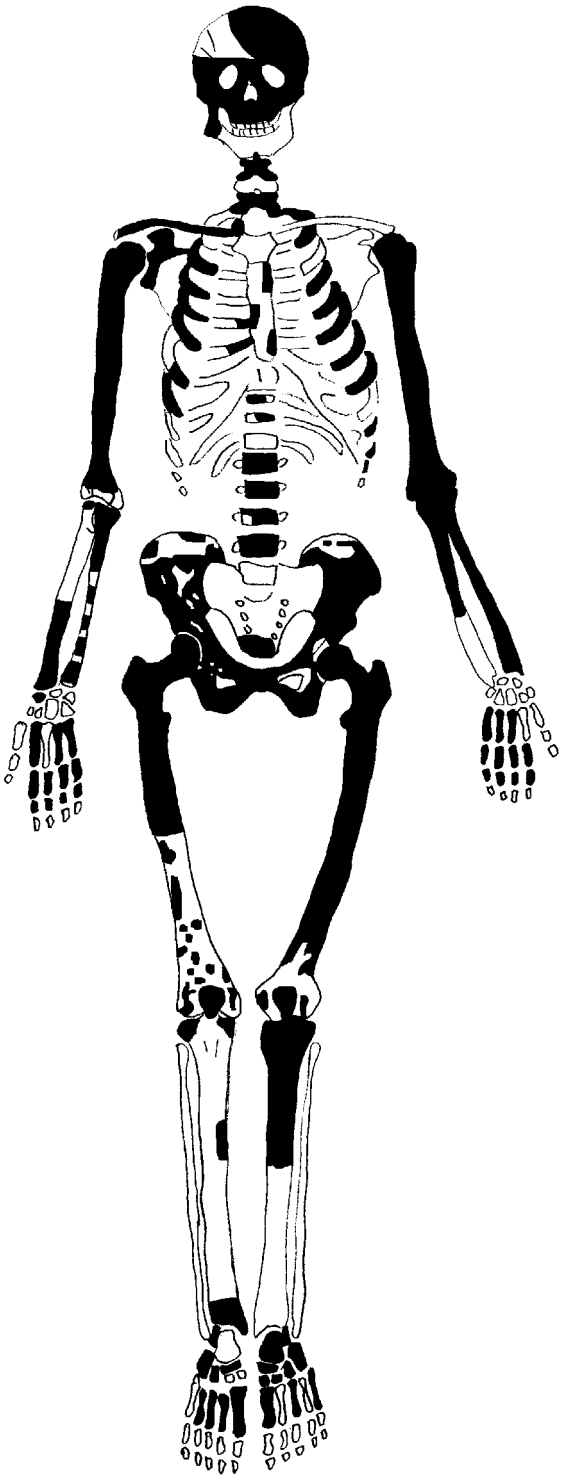
G. 12 Warin of Cambridge, abbot, 1183–95 (Illus 4.3.14–4.3.17)[39]

Disturbed burial in broken Purbeck marble coffin. The original burial (construction pit F. 551, Final phase 21, 1183–95) was robbed, probably in the sixteenth century, and again in the early to mid-eighteenth century (F. 300, Final phase 35, *c.*1725–*c.*1750). Remains found in F. 300, mostly in Trench 1, Layer 272, but also in Trench 1, Layer 185. Associated finds: ivory crozier fragments (*RF 103* and *104* from Trench 1, Layer 185, and *RF 741–2* from Trench 1, Layer 272, Illus. 5.5.1), iron ferrule (*RF 633* from Trench 1, Layer 272), and gold braid (*RF 620–1* from Trench 1, Layer 272).

The remains in summary. A single adult male aged between 50–60 years at death. Fairly small in stature (168 cm or 5 ft 6 in.) but of robust proportions and with a large head. Ante-mortem tooth loss amounted to 6/16 and there is evidence of a healed broken rib. The remains highly fragmented and incomplete. After

[38] Rosemary Powers, pers. comm.

[39] See above, p. 336–7.



Illus. 4.3.14. Skeletogram of Abbot Warin of Cambridge (G. 12).

reconstruction, most of the skull, fragments only of the right ascending ramus of jaw. Very thick bones and the whole skull of massive proportions with large heavy brow ridges, deep glabella, prominent nuchal area, and marked external occipital protuberance. Widely flaring zygoma. Fragments of 17 vertebrae, also of most ribs. Right clavicle and part of right scapula. Vertebrae: part of cervicals 1, 2, 4, 5, 6, 7; thoracics 1 and 2; vertebral bodies of five lumbars. Virtually complete humeri with prominent deltoid tuberosity, but the forearm bones fragmentary except for a complete left radius in Trench 1, Layer 185. Quite well-preserved pelvic bones, almost complete with both pubic symphyses and sacro-iliac joints; small fragments of sacrum and coccyx. Rather poor and incomplete femora, the left complete except for distal condyles; head of the right distorted and half the shaft crushed. Both patellae. Of the lower leg, only fragments including half of the left tibia, also from Trench 1, Layer 185. Poorly preserved hand and foot bones; one carpal and six metacarpals, four right tarsals, all left tarsals, seven metatarsals and 23 phalangeal elements, all small proportions. Also, the hyoid and ossified throat cartilage.

Very robust skull and pelvis, characteristically male. Of special note, heavy skull bones, large brow ridges, mastoids, and widely flaring zygomas (see Illus. 4.3.15).

Dental health

Only four teeth *in situ*, all large. Also, one 'solitary' lower premolar. A dentition with abnormal premolars, chronic infection, and probably about one-third of the teeth missing some considerable time before death.

The sockets for upper right PM1 and 2 are unusual,

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   C     !  !                    A     eroded
X  7  X  /  /  3  /  1  |  1  /  /  X  /  X  X  X
```

lying across the arcade; the premolars were probably misplaced and somewhat atrophied. Six of the 16 observable sockets showed healing. Caries: a mesial interproximal on the neck of upper right M2. Periodontal Disease: from the available M2 area it appears to have been considerable. Abscess: possibly a healed abscess above upper left PM1. In addition, the alveolar bone behind the *in situ* M2 is highly vascularized but healed; behind this, a quite large, inflamed area, next to the greater palatine foramen, suggests a chronic infection.



A



B



C



D

Illus. 4.3.15A–D. Skull of Abbot Warin of Cambridge (G. 12).



E

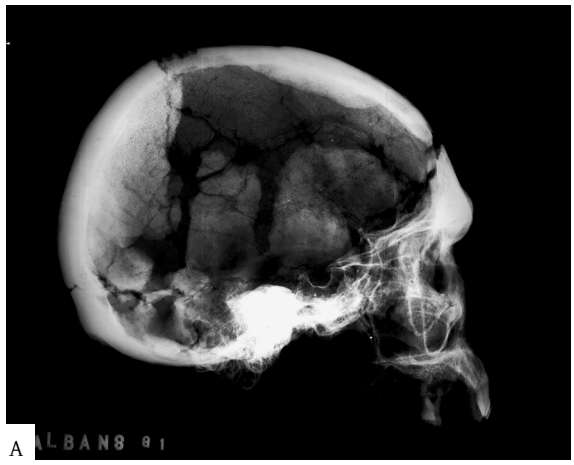
Illus. 4.3.15E. Skull of Abbot Warin of Cambridge (G. 12).



Illus. 4.3.16. Fractured rib of Abbot Warin of Cambridge (G. 12).

Pathology

Arthritic changes: slight lipping on the sternal facet of the clavicle, also on the iliac crests. Slight changes to the calcanea and to the vertebral column were seen. A medium degree of lipping at the cervical and lumbar levels with quite large outgrowths (osteophytes) on the vertebral bodies. The odontoid peg is roughened. Some eburnation present between two of the articular facets on the fourth and fifth lumbar vertebrae. Some lipping to the condyles of the left tibia and 'bordering' to the ulna notch. The costal cartilage partly ossified. All these are natural age-related osteoarthritic changes. Injury: a fractured rib (confirmed radiologically) some considerable time before death (see Illus. 4.3.16).



A



B



C

Illus. 4.3.17A–C. X-rays of the skull of Abbot Warin of Cambridge (G. 12).

Non-metrical features

Wormian bones: evidence of two or three now partly obscured Wormian bones along the lambdoid suture. A torus palatinus was present and bilateral tori maxillares. Mastoid: a suture is noted which vertically bisects both mastoid processes. In addition, by X-ray it was noted that the sphenoid sinus was not well aerated, but this was not thought to be pathological. The almost complete absence of the frontal sinus is noteworthy (Illus. 4.3.17), as is the well-defined pituitary fossa.

Estimation of age

The dentition was too poorly preserved to give an estimation of age at death. The single M2 gives an attritional age of 35–45 years. Cranial sutures suggest a range of 50–60 years and arthritic change is also consistent with late middle life.

Estimation of stature

Based on humeral length: 168.12 ±4.05 cm or 5 ft 6 in. ±1.6 in.

G. 13 John de la Moot, abbot, 1396–1401 (Illus 4.3.18–4.3.20)

Intact burial in a stone-built grave (F. 554) in a nailed wooden coffin. Remains from Trench 1, Layer 273 (Final phase 27, 1396–1402). Associated finds: Fragment of probable copper-alloy Late Roman bracelet (*RF 230*) and headless copper-alloy nail (*RF 232*).

The remains in summary. The complete remains of a single adult male aged at least 50–70 years at death, about 185 cm (6 ft 1 in.) tall and well built. In childhood there was probably a serious episode of illness, but in old age, the skeleton showed very little arthritic degeneration. Many teeth were lost, about one-third of the total, towards the end of life. Exceptionally well-preserved skull.

The skull in very good condition although most of the basal part missing. Very well-preserved compact bone, head facing upwards on excavation. Rather high vault and long, large facial skeleton. Pronounced glabella furrow and brow ridges, wide zygomas and well-developed occipital and nuchal areas. Almost complete mandible somewhat distinctive in shape: the angle of mandible and coronoid process widely flaring outwards on both sides. The vertebral column non-existent but for part of lumbar 5, articulating with sacrum, and a few unidentifiable fragments. Ribs, sternum, and pectoral girdle were decomposed and, apart from the shadow of their shape in the grave soil, virtually absent. Both humeri smashed at the shoulder but parts of the shafts well-preserved compact bone. Both ulnae complete, radii also complete but for articular surfaces. Of the hands, six carpals and six metacarpals from each; nine phalangeals from the right and 12 from the left. Most of the pelvis preserved although iliac crests missing as is much of right ilium. Well-preserved sacrum. Both femora somewhat crushed at the knee, the left in better condition than the right. Tibiae and fibulae in poor condition. One patella. The skeletal feet in good condition: seven tarsal bones and five metatarsals from each; three right and six left phalangeal elements.

The crushing at the shoulder and knee areas was bilaterally symmetrical and always ventral suggesting the effect of the collapse of the wooden coffin under the weight of overlying soil and burial slab.

Preservation: some of the bones, for example the proximal tibiae, the vertebral elements, and the head of radius, were so decomposed as to be one with the surrounding grave soil. Some preservation using PVA was attempted during excavation, but decomposition was found to be too extensive for this to be useful.

All the features of a robust male were present. The skull is large with prominent mastoids, supra-meatal ridges, glabella, etc. The pelvis also showed male characteristics and the limb bones were also large, with prominent muscle attachments.

Dental health

Twenty-teeth *in situ*, three remaining only as roots. Also, four root fragments which could not be placed due to erosion of the alveolare. The '?' relates to the unclear nature of the alveolare due to subsequent erosion. Remaining teeth in good condition. When articulated, the jaw shows partial overbite and corresponding wear on the lingual surface of the upper incisors is considerable. Loss of most of the grinding teeth towards the end of life, probably as a result of caries and abscess formation.

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 ?    A       C             C  A       A  ?  ?
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X / X 5 4 3 2 1 | 1 2 3 4 5 6 / /
        C                       C
                                u
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Ante-mortem tooth loss considerable, amounting to 10/32 (including teeth remaining only as roots). Caries: four teeth affected as follows: upper right canine and upper left incisor; very small mesial interproximal cavities; lower right PM2; small cavity on occlusal surface; lower left M1; interproximal caries mesially and distally. In addition, those teeth only remaining as roots were probably rotten through caries. Periodontal disease: slight to medium. Calculus: 'considerable' on the lingual surface of the lower incisors, 'medium' on the buccal surface. Enamel hypoplasia: present to a medium extent on the upper incisors, especially on I1s. Abscesses: three were noted: one above upper left canine, a healed abscess above upper left M1, and a large perforation above the posterior root of upper right M1.

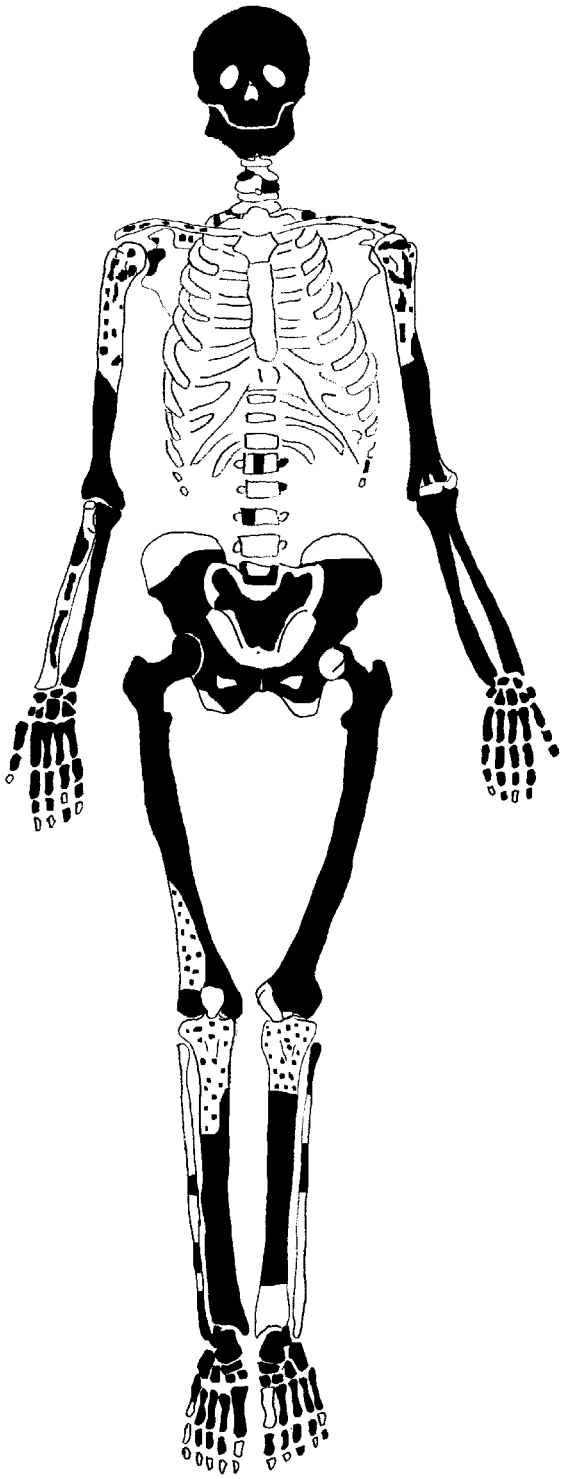
Pathology

Arthritic changes: due to poor preservation any potential spinal arthritis could not be determined. Slight exostosis seen on the finger bones with mild outgrowths on the sides of the phalangeal shafts and articular surfaces. Slight lipping to the iliac crests and tarsal bones. Eburnation seen on the distal articulation of right metatarsal I. Quite large exostosis on left metatarsal I. Bordering to the trochlea notch of both ulnae and roughening of the olecranon.

The presence of enamel hypoplasia is sometimes attributed to Vitamin D deficiency but may in fact result from any major illness during childhood. Also, on X-ray, the left maxillary antrum shows enlargement suggestive of the presence of a mucocele (see Illus. 4.3.19).

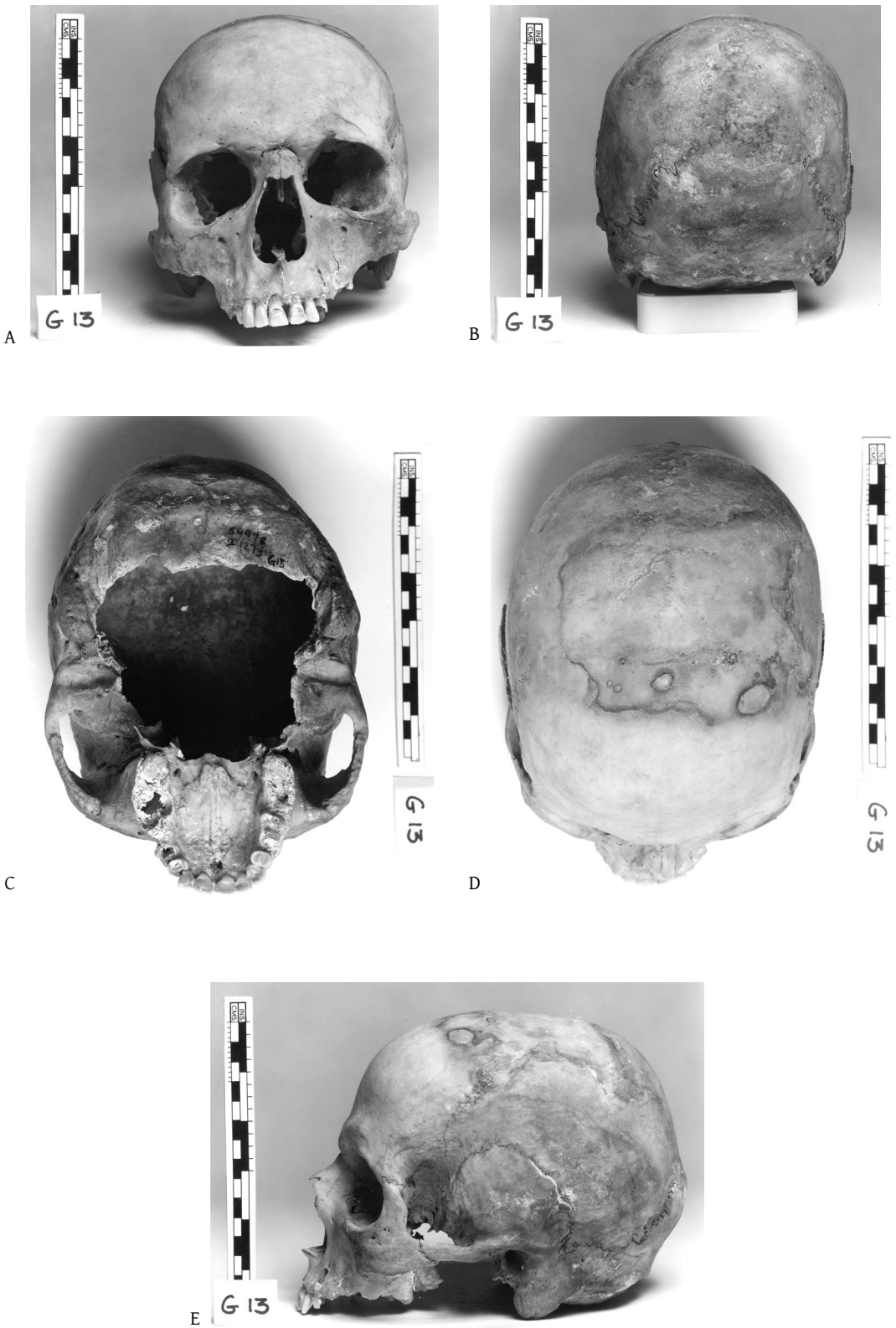


A



B

Illus. 4.3.18A–B. Skeleton and skeletogram of Abbot John de la Moot (G. 13).



Illus. 4.3.19A–E. Skull of Abbot John de la Moot (G. 13).



Illus. 4.3.20. X-rays of the skull of Abbot John de la Moot (G. 13).

Non-metrical features

A coronal ossicle on the right side of the skull. Left occipital boss. Palatine tori at the level of M3s. A bifurcating internal jaw symphysis was noted. In addition, the gonial angle is unusually widely flaring (see Illus. 4.3.19). An X-ray of the skull revealed strong asymmetry of the frontal sinuses, the right side being 30% larger than the left (see Illus. 4.3.20).

Estimation of age

The teeth hardly useful for ageing, but the uneven wear of lower left M1 gives an attritional age of at least 45 years. The fact that several teeth remain only as roots may suggest a more advanced age. The cranial sutures mainly fused but not entirely obliterated, although all coronal sutures fused and obliterated on the inner table. The parieto-sphenoid also fused. Lambdoid L1 and L3 also fused. The overall age estimate is between 50–70 years.

Estimation of stature

Based on ulna length, a height of 177.33 ±4.32 cm or 5 ft 10 in. ±1.7 in. is estimated; but using femoral length, which is a better measurement for estimates of stature, the result is 184.8 ±3.27 cm or 6 ft 1 in. ±1.3 in. Note: the femur was reconstructed from two broken pieces, accurately reconstructed.

Other comments

A deposit of some calcareous material formed a rim across the inner table of the vault. This was analysed by X-ray diffraction at the Natural History Museum and found to be apatite, or calcium phosphate fluoride ($3Ca_3(PO_4)_2$. CaF_2), a mineral resulting from the normal decomposition of bone.



Illus. 4.3.21. X-ray showing new bone formation and rodent gnawing on tibiae of Bartholomew Wendover (G. 20).

G. 20 Bartholomew Wendover, benefactor, once rector of Shackerstone (Leics.), d.1384 x c.1393 (Illus. 4.3.21)

Intact burial in a nailed wooden coffin, in the east cloister walk. Only the lower half of the body was uncovered. Remains found in Trench 1, Layer 373, F. 593 (Final phase 28–9, 1402–*c.*1500). Associated finds: none.

The remains in summary. The partial remains of a single individual as follows: after reconstruction, a complete right tibia plus half of a left tibia including the medial epicondyle. Evidence of rodent gnawing of these shafts (see Illus. 4.3.21). The remains of five tarsal bones; a left and right talus a navicular, and another unidentified

foot bone. All bones small in proportion, showing early signs of arthritic change. Suggested age about 35–45 years.

G. 23 Robert of the Chamber, d.1154/9 (Illus 4.3.22–4.3.24)

Intact burial in a coffin-shaped lower grave-pit with head-niche. The lower part of the pit covered by planks laid on ledges in the sides of the pit. Remains from I, 420 (Final phase 17, 1154/9–66). Associated finds: *RF 281* (pewter chalice).

The skeletal remains of a single adult male, height 170 cm (5 ft 7 in.), and aged between 40–60 years at death. A large hyperbrachycephalic head but otherwise of rather slight build. The presence of enamel hypoplasia implies a bout of illness in late childhood. The various anomalies noted do not suggest a particular pathology and it may simply be that this individual was simply more asymmetrical skeletally than most. Arthritic changes are widespread but not severe and consistent with the start of normal ageing.

After reconstruction, most of the skull including maxilla and palate and a complete lower jaw. A heavy, thick-boned skull of somewhat unusual shape. Remains of 11 thoracic vertebrae, and unidentifiable remains of probably nine other vertebrae. Small fragments of many ribs. Part of both acromions of scapulae and shafts of clavicles. Right humerus, complete after reconstruction; left humerus without head. Poorly preserved ulnae and right radius; left radius complete. Of the right hand, six carpals, remains of four or five metacarpals, and five phalanges; of the left hand, three carpals, four metacarpals, and four phalanges. Rather small and fragmentary pelvis with small acetabulae. Femora almost complete although eroded at articular surfaces; pronounced lipping at the insertion of the head ligament. Both tibiae and fibulae much eroded; fibulae somewhat thin. Of the feet, both calcanea and astragali, three other tarsals, six metatarsals, and one phalanx.

The skull heavy and large with clearly male features. The rest of the skeleton somewhat slight in build.

Preservation incomplete although most of the skeleton preserved to some extent. The bone extremely friable and much eroded, in parts exposing the inner cancellous bone so that the identity of the fragment was sometimes not clear. Both femora broken (post-mortem) above the knee as were both humeral heads. At knees, the tibiae much eroded.

An interesting feature was a green or black flecking on many bones as follows: skull with mostly green flecking, some black around the mastoids. On the right horizontal ramus beneath lower M3 a large area of green flecking and here the bone had broken away slightly. The whole of the rest of the skeleton was rather evenly flecked except the spine where none was visible.

Dental health

An almost perfect dental arcade with only one tooth missing. The upper and lower jaws articulate and occlude with a perfect edge-to-edge bite. An excellent dentition with minimal caries but extensive wear on the lower molars and on both upper and lower incisors. This wear is very advanced and uneven on upper right M1, lower right M3, upper left M1 and 2, and lower left M3. In addition, the lower right M1 is worn down to the pulp cavity and the four root canals blocked by (healthy) secondary dentine. No ante-mortem tooth loss or abscesses. The webbed root of upper right M2 is noted.

u															
C	C										u	u			
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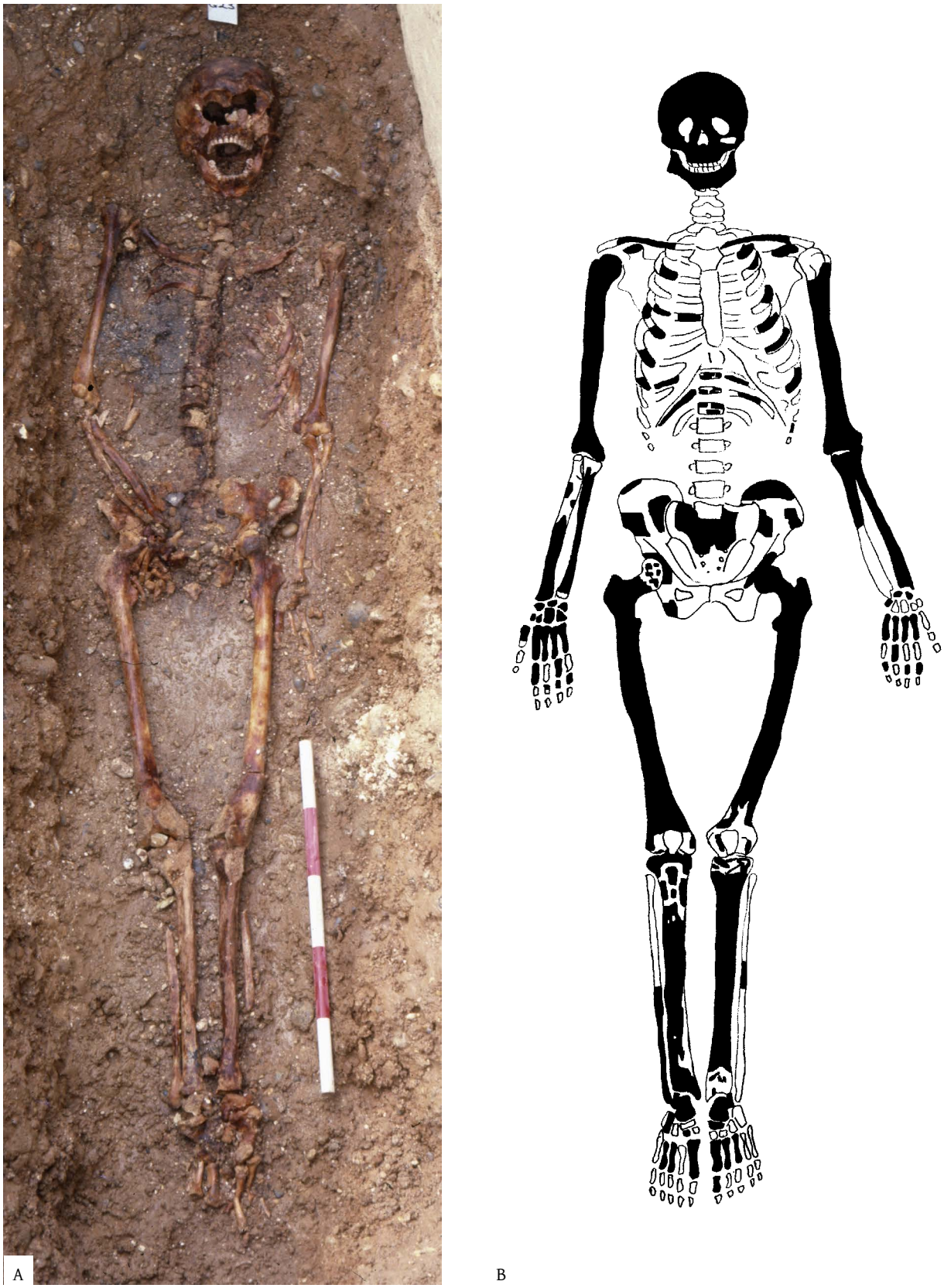
u														E		u

Caries: small occlusals on upper right PM2 and M1. Periodontal disease: none seen on the lower jaw, 'medium' on the upper. Enamel hypoplasia: mild on all teeth, including on the third molars, the last to erupt. This suggests an episode of serious illness between the ages of 12–18 years. Calculus: slight to medium on the incisors, slight on some molars.

Pathology

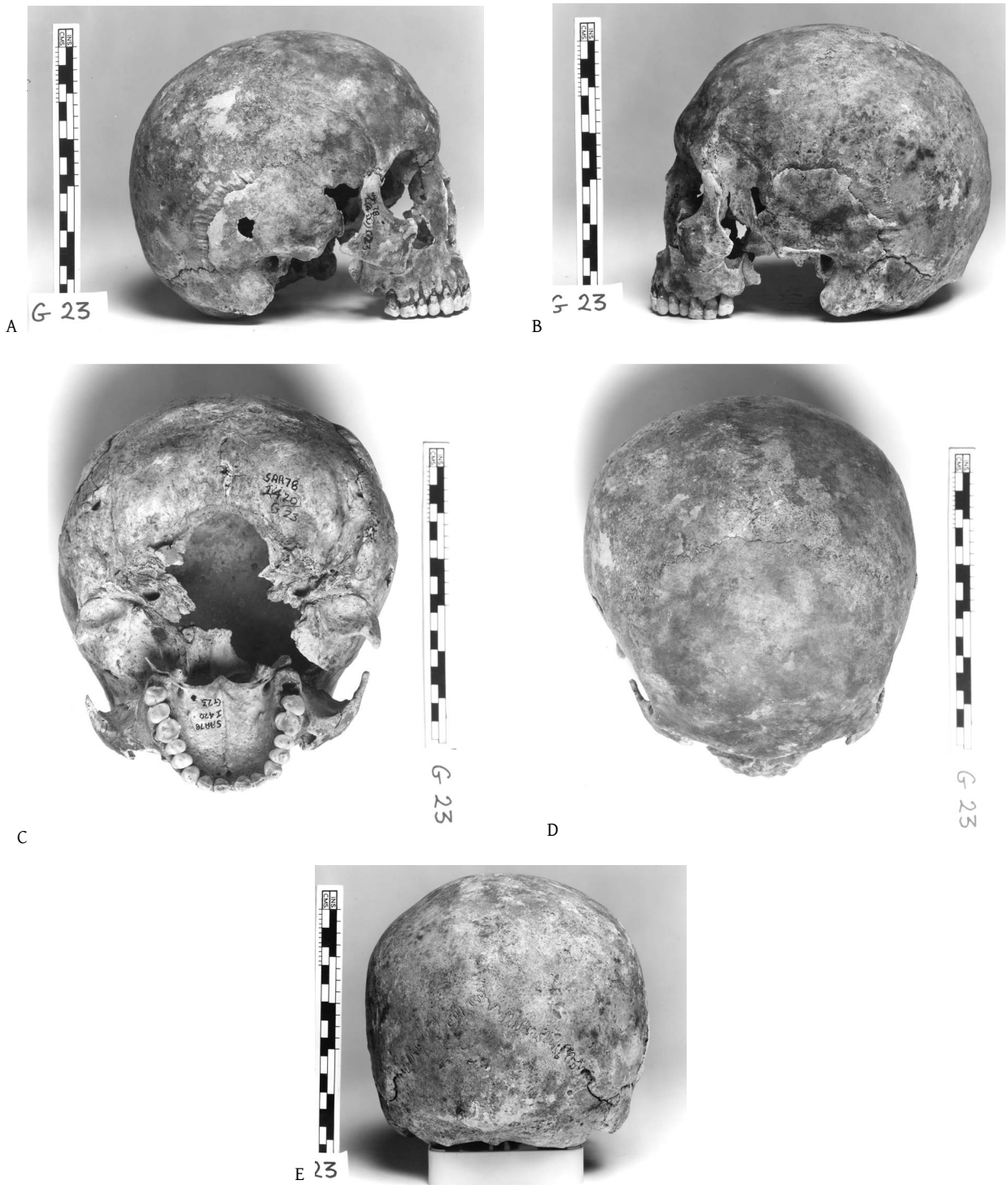
Arthritic changes: a medium degree of lipping seen on the thoracic bodies and zygapophyses. The two ribs whose articular facets could be examined both show mild lipping as does the trochlea of the left ulna, and the articular ends of the radius. Some roughening is present in the acetabulae and a slight amount of lipping is seen on the femoral condyles and heads. Slight changes are also seen to the mandibular fossa. Mastoiditis: a chronic mastoid infection is suggested radiographically to the right mastoid which is significantly less well aerated than the left (Illus 4.3.23–4.3.24).

Other features were noted which, when radiographed, did not suggest any specific pathology: both humeri were somewhat bowed, but contrastingly, the usual dorso-ventral curvature of the right femur is absent and instead the bone is straight, while the left shows a normal profile. Both femoral heads are very small and correspond with very small acetabulae, and the femoral neck angle with the shaft is wider than usual.



A B

Illus. 4.3.22A–B. Skeleton and skeletogram of Robert of the Chamber (G. 23).



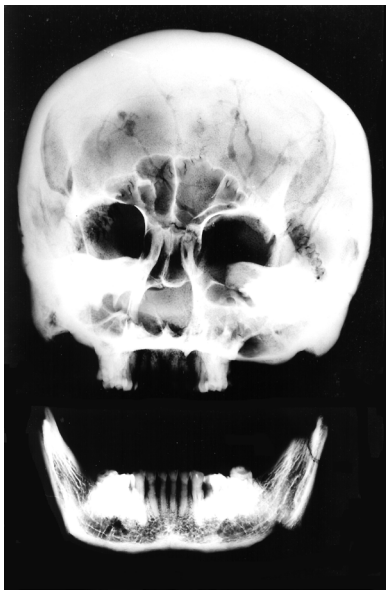
Illus. 4.3.23A–E. Skull of Robert of the Chamber (G. 23).

The insertion of the head ligament in the right femoral head has very pronounced lipping. A bump or swelling about 13 cm (5 in.) medially above the left knee is noted and suggests an early injury. The linea aspersa is also pulled over by musculature indicating that the individual probably had a limping gait.

The skull is particularly noteworthy in shape and asymmetry (see Illus 4.3.23–4.3.24), with a rounded appearance from above, reflected in the wide vault, broad maxilla, and somewhat squared dental arcade. A cranial index of 88.95 confirms that the skull is hyperbrachycephalic.



Illus. 4.3.25. Robbing of G. 4 and G. 5.



Illus. 4.3.24. X-ray of the skull of Robert of the Chamber (G. 23).

Non-metrical features

Ossicle noted at left asterion.

Estimation of age

Evidence from extent of arthritic change, cranial sutures and teeth suggest that age at death was probably 40–60 years.

Estimation of stature

On the basis of combined femoral and tibial lengths: 170.41 ±2.99 cm or 5 ft 7 in. ±1.2 in.

Group B. Robbing of G. 4 and G. 5 (Illus 4.3.25–4.3.29)

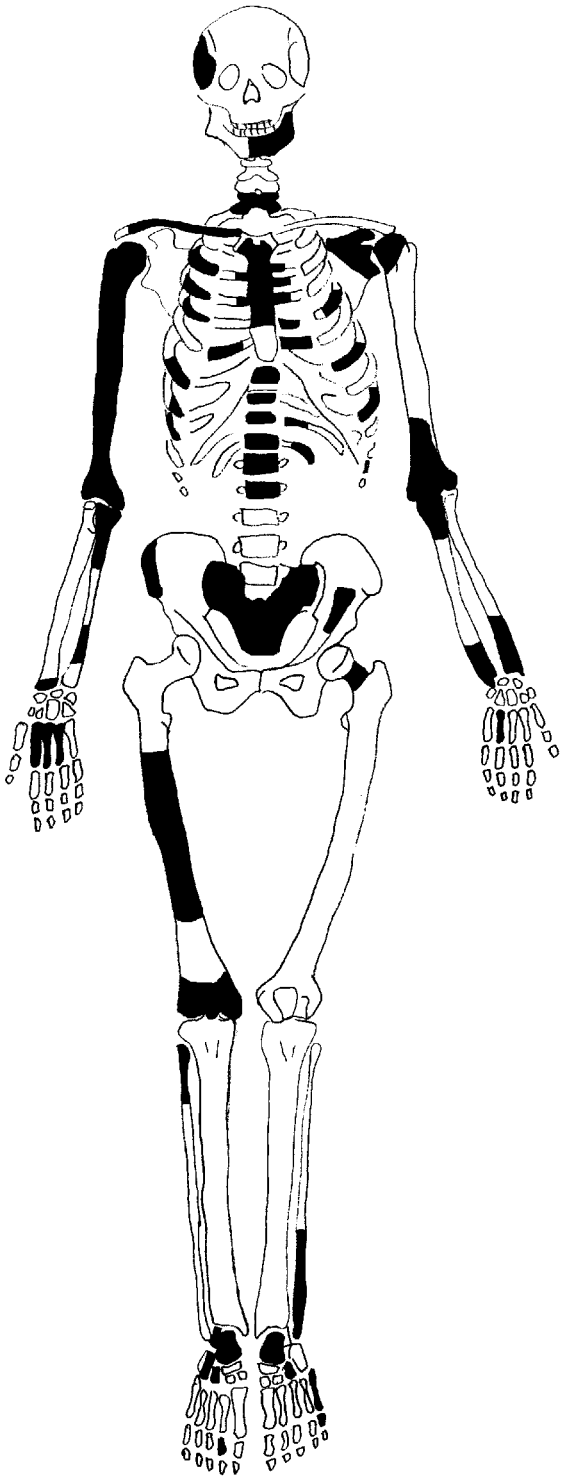
G. 4 John de Hertford, abbot, 1235–65

Disturbed burial in broken Barnack stone coffin. The original burial (F. 595, Final phase 24, 1235–*c.*1300) was robbed after the Dissolution and the remains were found in later layers. Associated finds: none.

G. 5 William of Trumpington, abbot, 1214–35

Clunch stone coffin, intact. The original burial (construction pit F. 550, Final phase 23, 1214–35) was robbed after the Dissolution and the remains were found in later layers. The bones found in F. 550 (Trench 2, Layer 976), the construction trench of G. 5, can only be derived from a pre-chapter house burial (see G. 31). Associated finds: none.

The robbed remains from G. 4 and G. 5 were found in the following layers, with most of the remains coming from Trench 2, Layer 502:



Illus. 4.3.26. Skeletogram of G. 4/5.

Trench 3, Layer 474. Final phase 33, 1600–50, (P.ph. 583), F. 321.[40]

Trench 2, Layer 304. Final phase 35, *c.*1725–*c.*1750 (P.ph. 257), F. 173.

Trench 2, Layer 485. Final phase 35, *c.*1725–*c.*1750 (P.ph. 257), F. 173.

Trench 2, Layer 498. Final phase 35, *c.*1725–*c.*1750 (P.ph. 257), F. 173.

Trench 2, Layer 502. Final phase 35, *c.*1725–*c.*1750 (P.ph. 257), F. 173.

Trench 2, Layer 535. Final phase 35, *c.*1725–*c.*1750 (P.ph. 257), F. 173.

Trench 2, Layer 639. Final phase 35, *c.*1725–*c.*1750 (P.ph. 257), F. 173.

Trench 2, Layer 282. Final phase 35, *c.*1725–*c.*1750 (P.ph. 258), F. 171.

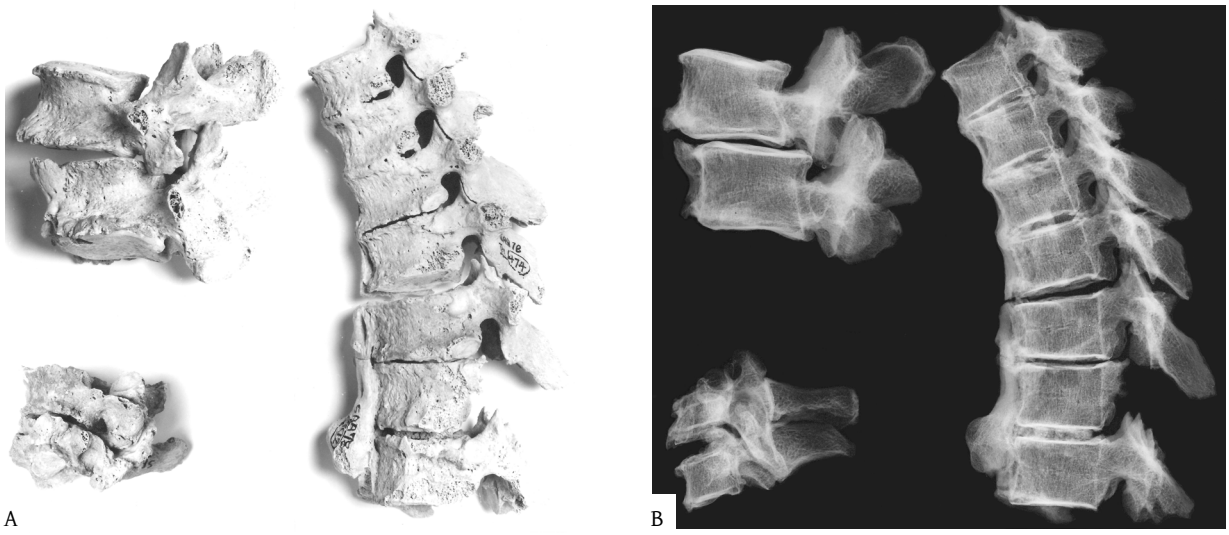
The remains in summary. Remains of two males,[41] one aged at least 50–70 years, but morphological similarities (extent of robusticity and arthritic change) strongly suggest that most of the remains belong to one person, probably John de Hertford, since the remains in F. 173 were found near his grave (G. 4). This male was about 175.5 cm (5 ft 9 in.) tall, extremely robust in build, and with evidence that he must have suffered considerable pain through ankylosing spondylitis and osteoarthritis. He can have had little or no movement in his kyphotic thoracic spine. One of these men was virtually toothless at death.

The skeletons were incomplete and fragmentary. Fragments only of the right skull (squamous parts of the right temporal bone and parts of occiput), part of square left lower jaw to beyond the symphysis but with no teeth, and a very small fragment of left occipital condyle. Vertebrae from three layers (Trench 2, Layers 502, 639, and Trench 3, Layer 474) were found to be associated.[42] Ribs also from various layers. A distinctive sternum. Part of a left scapula and right clavicle. A complete right humerus (after reconstruction), the only entire long bone present, and other small fragments of upper limbs including parts of a left humerus and of both radii and ulnae in Trench 2, Layer 498, which are associated with those in Trench 2, Layer 502. Two metacarpals IV, a II, and

[40] Some remains of one of the two males were found in F. 321, the robbing of the six abbots' graves, probably due to mixing of the bones during robbing.

[41] Duplicate right metatarsals IV and V in Trench 2, Layers 502, 639, 282.

[42] See below, p. 377.



A B

Illus. 4.3.27A–B. Photograph and X-ray showing G. 4/5 spine pathology.

a III; no phalanx. Few pelvic remains, but a complete and massive sacrum and coccyx. Fragments only of the lower limbs; a large central portion of the right femur (a very heavy bone with narrow medulla); both distal condyles and parts of a left and right fibula. Of the feet, a pair of calcanea, a right talus, navicular, two cuneiforms, and left metatarsal I and V(x2), and right metatarsals I, III, IV, V. Each of these metatarsals has the same degree of arthritic change and is consistent in size and proportion. An additional two metatarsals, right IV and left V, from Trench 2, Layers 639 and 282 are much smaller and show no arthritic change.

Most of the bones massive in construction, their size and proportions suggesting an extremely robust male. Some of the foot bones are, by contrast, rather small and gracile in form.

Dental health

A lower jaw extant from the level of the right canine to the left third molar, showing sockets for 11 teeth. Five of these show entirely healed sockets and another four show partially healed sockets. The remaining two were lost after death.

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                        A
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Ante-mortem tooth loss was therefore 9/11. It was not possible to determine the presence of caries but an abscess cavity at the level of lower left M2/3 was noted. Considerable periodontal disease and alveolar recession was present resulting in a somewhat resorbed and atrophied jaw, as might be expected in a virtually toothless individual. A single 'solitary', heavily worn, lower right first molar in good condition with no caries.

Pathology (see Illus 4.3.27–4.3.28)

Arthritic changes: much of the skeleton affected by severe osteoarthritis, especially the vertebrae which show extensive osteophytes and resultant deformation of shape, mostly affecting the vertebral bodies, although spur formation and lipping of the zygapophyses and neural spines was also seen. Severe eburnation was noted between the third and fourth cervicals. This occurs when the cartilage has disintegrated between the articular surfaces and bone rubs on bone with no cushioning, leading to an ivory polished facet. In Trench 2, Layer 502, three cervicals were ankylosed (fused) together by a massive outgrowth of bone. This is also seen in the four thoracic vertebrae of Trench 3, Layer 474 and in the single thoracic of Trench 2, Layer 639. These eight vertebrae were once entirely fused together as a virtually immovable upper spine. This ankylosis has resulted in a narrowing of the inter-vertebral spaces, kyphosis and a slight scoliosis (see Illus. 4.3.27). The rib in Trench 2, Layer 535 also shows a large number of osteophytes as do those in Trench 2, Layer 498. The thoracic vertebra in Trench 2, Layer 639 also shows considerable osteophytes with a little eburnation on the zygapophysis. It is most likely that these bones belonged to the same individual.

The pelvic remains also show severe lipping; the sacrum, with the coccyx fused to it, shows only slight lipping. Only a small amount of lipping on the humeri, not affecting the joints at either the elbow or wrist. Quite marked changes to the glenoid, acromion, and coracoid of the scapula; the glenoid fossa being especially roughened. The single clavicle shows severe



Illus. 4.3.28A–B. Photograph and X-ray showing G. 4/5 sternum pathology.



Illus. 4.3.29. X-ray showing mastoiditis on right mastoid of G. 4/5.

changes to both articular surfaces. The radius and ulna appear little affected and the hands, skull, and jaw not at all, although only small fragments were present. Similarly, the femoral condyles appear unaffected, but the femoral neck does show some degenerative changes. Both fibulae show changes, and the feet were badly affected, both calcanea showing severe bony outgrowth at the heel. Metatarsal I (the big toe) shows some bony protuberance as does metatarsal V in Trench 2, Layer 304.

Severe arthritic change is seen on the sternum, resulting in the alteration of this bone's shape and ossification of the usually 'plastic' costal cartilages (Illus. 4.3.28).

The extensive changes seen in this skeleton, the specific parts of the body affected and the classic 'bamboo spine', suggest the chronic condition called ankylosing spondylitis, a rather rare and crippling disease, resulting in this case in kyphosis and scoliosis (spinal twisting), and spinal immobility. This diagnosis was confirmed radiographically.

Other pathology

Lack of pneumatization of the right mastoid seen on X-ray indicates the presence of a chronic mastoiditis infection, causing some sclerosis of the bone or osteomyelitis (see Illus. 4.3.29).

Non-metrical features

Two Wormian bones along the lambdoid suture.

Estimation of age

Of the cranial sutures, L2 and L3 (lower lambdoid) are not fused, suggesting an individual of late middle age (50–70 years). However, the changes associated with osteoarthritis and especially the degenerative, senile changes to the jaw, suggest a rather more advanced age. Lack of remains, particularly teeth, or any complete picture of the cranial sutures, belies more accurate estimation.

Estimation of stature

On the basis of humeral length, the only long bone preserved, the living stature of one individual was 175.5 ±4.05 cm or 5 ft 9 in. ±1.6 in.

Group C. The robbed abbots' graves of F. 321 and associated features

The six abbots whose graves were robbed between 1539–*c.*1725 (F.ph. 31–4) by F. 321 and associated features were: Paul of Caen (d.1093), Richard d'Albini (d.1119), Geoffrey de Gorron (d.1146), Robert of Gorham (d.1166), Simon (d.1183), and John de Cella (d.1214).

G. 14 Richard d'Albini, abbot, 1097–1119, or Geoffrey de Gorron, abbot, 1119–46

Barnack stone coffin, broken. The original burial (F. 409, Final phase 14, *c.*1110–54) was robbed after the Dissolution and the remains were found in F. 321 and associated features. Associated finds: none.

G. 15 John de Cella, abbot, 1195–1214

Coffin not present. The original burial (F. 489, Final phase 22, 1195–1214) was robbed after the Dissolution and the remains were found in F. 321 and associated features. Associated finds: none.

G. 16 Paul of Caen, abbot, 1077–93 (early twelfth-century translation site from G. 9)

Coffin not present. The translated burial (F. 487, Final phase 13, 1093–*c.*1110) was robbed after the Dissolution and the remains were found in F. 321 and associated features. Associated finds: none.

G. 17 Richard d'Albini, abbot, 1097–1119, or Geoffrey de Gorron, abbot, 1119–46

Barnack stone coffin, broken. The original burial (F. 409, Final phase 14, *c.*1110–54) was robbed after the Dissolution and the remains were found in F. 321 and associated features. Associated finds: none.

G. 18 Simon, abbot, 1167–83

Coffin not present. The original burial (F. 490, Final phase 20, 1166–83) was robbed after the Dissolution and the remains were found in F. 321 and associated features. Associated finds: none.

G. 19 Robert of Gorham, abbot, 1151–66

Coffin not present. The original burial (F. 488, Final phase 19, 1154/9–66) was robbed after the Dissolution and the remains were found in F. 321 and associated features. Associated finds: none.

F. 321 and associated features: remains in summary.

None of the remains from F. 321 and associated features can be assigned to specific graves since the features represent the robbing of Graves 14, 15, 16, 17, 18, and 19. The remains are, therefore, considered by layer (ordered by Final phase and P.ph.). As will be seen, very few remains of these six individuals were recovered. The blue/grey staining noted throughout the series remains unidentified.

Trench 2, Layer 677. From Final phase 31, 1539–*c.*1550 (P.ph. 248), F. 250. Two pieces of skull. A squamous bone with articular facet for the jaw,[43] the supra-meatal ridge, sphenoid, and part of the orbit. Sphenoid suture completely fused. A left occipital with part of a fused lambdoid suture and showing strong nuchal lines. Both bones are from a male and probably belong together. The fused sutures suggest an age of approximately 60–70 years.

Trench 2, Layer 682B. From Final phase 31, 1539–*c.*1550 (P.ph. 248), F. 250. A right parietal part of the skull with part of both lambdoid and squamous sutures. Suture closure suggests an age of 50–60 years. Splinter of femoral shaft.

Trench 2, Layer 607: From Final phase 31, 1539–*c.*1550 (P.ph. 251). Very small fragment of cervical vertebra with a little arthritic lipping. Also a right metacarpal I.

Trench 3, Layer 296: From Final phase 31, 1539–*c.*1550 (P.ph. 279), F. 284. Very poorly preserved splinters of long-bone shaft.

Trench 1, Layer 494. From Final phase 32, *c.*1550–1600 (P.ph. 60), F. 337. Proximal half of a left metatarsal IV.

Trench 2, Layer 421. From Final phase 32, *c.*1550–1600 (P.ph. 239). Part of long-bone shaft poorly preserved.

Trench 3, Layer 450. From Final phase 32, *c.*1550–1600 (P.ph. 582), F. 321. Fragment of distal end of a left fibula, showing fairly extensive exostosis.

Trench 3, Layer 480. From Final phase 32, *c.*1550–1600 (P.ph. 582), F. 321. A rib fragment. Large piece of sacrum and coccyx. Four phalanges from the hand. The epicondyles of a left femur showing arthritic 'bordering'. The four phalanges also show mild osteoarthritic changes.

[43] The articular jaw facet of Trench 2, Layer 677 could articulate with the left jaw of Trench 3, Layer 321.



Illus. 4.3.30. X-ray of lower jaw found in F. 321 (Trench 3, Layer 321).

Trench 3, Layer 513. From Final phase 32, *c.*1550–1600 (P.ph. 582), F. 321. A hand phalanx, probably proximal III.

Trench 3, Layer 550. From Final phase 32, *c.*1550–1600 (P.ph. 582), F. 321. A small central part of a shaft of fibula.

Trench 3, Layer 582. From Final phase 32, *c.*1550–1600 (P.ph. 582), F. 321 or F. 250. Single medial hand phalanx, III or IV; mild arthritic changes to the articular facet.

Trench 3, Layer 435. From Final phase 33, 1600–50 (P.ph. 583), F. 321. Unidentifiable fragment of long bone.

Trench 3, Layer 439. From Final phase 33, 1600–50 (P.ph. 583), F. 321. The poorly preserved head and neck of a left femur.

Trench 3, Layer 445. From Final phase 33, 1600–50 (P.ph. 583), F. 321. Small fragment of right acromion of scapula. Two unidentifiable fragments of shaft.

Trench 3, Layer 514. From Final phase 33, 1600–50 (P.ph. 583), F. 321. Proximal articulation and small amount of shaft of fibula showing some lipping.

Trench 3, Layer 516. From Final phase 33, 1600–50 (P.ph. 583), fill above G. 14 coffin. Distal part of a left humerus and eroded proximal half and distal quarter of a left tibia found within the head end of a broken limestone coffin. Blue/grey staining on both. Determination of sex and stature not possible. A slight amount of 'bordering' to the trochlea and capitulum, and some also to the malleolus of the tibia. The amount of arthritic change suggests middle age.

Trench 3, Layer 566. From Final phase 33, 1600–50 (P.ph. 583), F. 406A. Three right metacarpals showing blue/grey staining.

Trench 3, Layer 602. From Final phase 33, 1600–50 (P.ph. 583), F. 406A. Fragments of rib, two proximal phalanges showing some bony outgrowth, and an unidentifiable piece of shaft showing blue/grey staining.

Trench 3, Layer 321. From Final phase 34, 1650–*c.*1725 (P.ph. 584), F. 321. A complete lower jaw[44] without the left ascending ramus (see Illus. 4.3.30) some teeth *in situ*, others 'solitary'.

An age range of 35–45 years is suggested by the degree of attrition. No caries apparent, although the survival of lower right PM2 and left I2 as roots only suggests decay of these teeth. The teeth heavily worn, down to the primary dentine, and there is considerable periodontal disease especially at the level of the right molars; some calculus visible on the first right incisor. The presence of bilateral tori mandibulares beside the molars is noted especially on the right side and between lower left C and PM1. Agenesis of M3 was confirmed radiographically. A large broad male jaw with widely flaring coronoid. According to molar attrition an age of 35–45 is suggested. The extreme wear of the frontals may have resulted from an unusual overbite. Good dental health. Also, a fragment of distal tibia in this layer.

Trench 3, Layer 324. From Final phase 34, 1650–*c.*1725 (P.ph. 584), F. 321. A rather poorly preserved fragment of pelvis including the pubic symphysis. A large oval obturator foramen denotes male sex. Determination of age: on the rather scant evidence of a poorly preserved pubic symphysis, the following assessment has been made:

Component I = 4; 23 years
Component II = 4; 26 years
Component III = 3; 28 years

Average = 25.7 years

[44] The left jaw of Trench 3, Layer 321 could articulate with the articular jaw facet of Trench 2, Layer 677.

A very approximate age at death range for this bone is therefore between 20–30 years. Blue/grey staining noted.

Trench 3, Layer 382. From Final phase 34, 1650–*c.*1725 (P.ph. 584), F. 321. Two tarsals, two metatarsals, and one metacarpal; all poorly preserved.

Trench 3, Layer 421. From Final phase 34, 1650–*c.*1725 (P.ph. 584), F. 321. Fragments of atlas, rib, vertebral body, and a right metatarsal.

Trench 3, Layer 423. From Final phase 34, 1650–*c.*1725 (P.ph. 584), F. 321. Small fragments of vertebral body and unidentifiable shaft.

Trench 3, Layer 424. From Final phase 34, 1650–*c.*1725 (P.ph. 584), F. 321. A small fragment of olecranon of left ulna. Blue/grey stain noted.

Trench 3, Layer 426. From Final phase 34, 1650–*c.*1725 (P.ph. 584), F. 321. Acromion of right scapula, part of sternum, a vertebral body (with some osteophytes), and the epicondyles of a left femur.

Trench 3, Layer 614. From Final phase 34, 1650–*c.*1725 (P.ph. 584), F. 321. The central portion of a right femoral shaft only; blue/grey staining noted.

Group D. Remains from other chapter house layers, probably abbot's bones

Trench 1, Layer 291. From Final phase 22–4, 1195–*c.*1300 (P.ph. 36B). Fragments of two ribs.

Trench 1, Layer 288. From Final phase 26, *c.*1350–96 (P.ph. 37). A metatarsal probably left IV; poorly preserved.

Trench 1, Layer 304. From Final phase 26, *c.*1350–96 (P.ph. 37), F. 363. Small fragment of femoral shaft.

Trench 1, Layer 258. From Final phase 26, *c.*1350–96 (P.ph. 39). A single rib fragment with some exostosis on the articular facet.

Trench 3, Layer 478. From Final phase 28, 1402–*c.*1450 (P.ph. 531), F. 373. Fragments of long-bone shaft, right metatarsal IV, a rib and a vertebra showing some eburnation.

Trench 3, Layer 406. From Final phase 28, 1402–*c.*1450 (P.ph. 543). Small badly preserved fragment of long-bone shaft.

Trench 3, Layer 414. From Final phase 28, 1402–*c.*1450 (P.ph. 543). Rib fragment.

Trench 3, Layer 405. From Final phase 30, *c.*1500–39 (P.ph. 544B), F. 328. Proximal phalanx of foot, partial, probably left.

Trench 2, Layer 429. From Final phase 35, *c.*1725–*c.*1750 (P.ph. 280), F. 185A. Metatarsals left and right I, right III, distal half of another. The right I showing incomplete fusion of the epiphysis at the cleft stage of development. The cause of this abnormality is not clear; it is found in growth disorders but also in otherwise normal individuals and may be genetic in origin. In hand bones it usually disappears between 11–15 years of age but may persist into adulthood. Medium osteoarthritic change suggests age of 40+.

Trench 2, Layer 448. From Final phase 35, *c.*1725–*c.*1750 (P.ph. 295). Single rib.

Trench 3, Layer 341. From Final phase 35, *c.*1725–*c.*1750 (P.ph. 591). Two very poorly preserved fragments of proximal articular surfaces of tibia.

Trench 4, Layer 108. From Final phase 35, *c.*1725–*c.*1750 (P.ph. 715), F. 257. Small fragment of cranium left parietal with the beginnings of obliteration of the sagittal (S4) and lambdoid (L1) sutures. Possible age range 35–55 years.

Trench 2, Layer 896. From Final phase 36, *c.*1750–*c.*1775 (P.ph. 310), F. 518. Metatarsal, right IV.

Trench 3, Layer 239. From Final phase 37A, *c.*1775–1800 (P.ph. 605). Jaw. A right horizontal ramus with no teeth but showing absence of M3 and a well-healed socket for M1. A small shallow jaw.

Trench 2, Layer 381. From Final phase 37B, 1800–50 (P.ph. 343). Proximal half of a right metatarsal III.

Trench 1, Layer 155. From Final phase 41, 1920–37 (P.ph. 91), F. 150. Part of fibula.

Trench 3, Layer 143. From Final phase 41, 1920–37 (P.ph. 660), F. 159. Distal third of left femur showing considerable arthritic changes to the articular surface.

Trench 3, Layer 319. From Final phase 41, 1920–37 (P.ph. 660), F. 159. A single cervical vertebra; part of a radial shaft with blue/grey staining; distal part of left fibula; fragmentary remains of left metatarsal I. A large left calcaneum; a small right calcaneum. Some arthritic change to vertebra and left calcaneum.

Trench 2, Layer 257. From Final phase 42, 1937–40 (P.ph. 426), F. 134. A small piece of right maxilla with two molars (M1 and M2) *in situ*. Attritional

age estimated as 35–45 years, based on very scant evidence. Periodontal disease is considerable.

APPENDIX: METHODOLOGY

Preservation

Preservation of the skeletal remains was variable throughout, some bones being completely intact, others being so decomposed as to be one with the surrounding soil. In a few cases, bone was treated with PVA so as to preserve the structure prior to lifting so as to facilitate identification, examination and measurement. Restoration of the skeletal material was sometimes further necessary using water-based glue.

Sex determination

Sex was determined using the criteria described in Brothwell combined with Workshop of European Anthropologists in Prague recommendations.[45] Where appropriate, the sexing discriminant function of Giles and Elliot was utilized. In no cases did this latter method provide conflicting information.[46]

Age at death

This was estimated using a variety of methods as appropriate to the material available. Such estimates are notoriously difficult to make with firm reliability and a likely age range is often the best that can be achieved. There are several reasons for this. First, developmental changes to the skeleton occur only up to adulthood and age assessments based on changes such as dental eruption or epiphyseal closure reflect the stage of development rather than a precise chronological age because of normal variation.[47] For example, the basi-sphenoid synchondrosis, whose fusion is often said to mark 'adulthood' and an age of 18 years, may fuse quite normally at 17 or 25 years.[48] Second, the use of developmental age-markers is completely lost in adulthood, after which changes are largely degenerative. These are even more variable than developmental markers due to differences in ageing rates caused by environment, diet, lifestyle, individual health, and physiology. Third, available ageing methods are usually based on specific populations and cannot be applied with the same degree of reliability in other populations. Differential preservation of skeletal remains demands use of the best available bones rather than the most ideal.

Estimates of age at death were made using a combination of the following criteria: dental eruption after Downer[49] and Ubelaker;[50] epiphyseal closure after Tanner *et al.*[51] and Brothwell;[52] dental attrition after Brothwell,[53] Miles,[54] and Maples;[55] cranial suture closure from Cornwall,[56] after Vallois in Workshop of European Anthropologists, including Broca; pubic symphysis characteristics, after McKern and Stewart;[57] and arthritic change after Stewart.[58]

Estimation of stature

Various regression formulae exist for the calculation of living stature from the lengths of dry long bones and even from short bones from archaeological sites. Those in common usage are found in Brothwell,[59] after Trotter and Gleser,[60] but those used here are the later equations of Trotter.[61] Differences between the two are not considerable and consist in the derivation of the new equations from measurements of living subjects where the previous ones were based on cadavers.

Here, for each individual, a single estimate has been based on the best available long bone that has the smallest standard error of estimate. Averages of several estimates or combinations of different regressions have not been used.

Pathology

Evidence for disease and trauma is described after Brothwell,[62] Brothwell and Sandison,[63] Bourk,[64] and Goldstein.[65] In cases of anomalous pathology, the material was X-rayed using a Phillips Industrial Machine at the Natural History Museum with the help of Theya Molleson, and the opinion of radiologists Dr John Price and Dr Rose de Bruyn was sought. The opinion of Rosemary Powers was sought in relation to the age estimation of G. 23. Material showing features of special interest was photographed at the Verulamium Museum by James Brown.

[45] Brothwell 1972; Workshop of European Anthropologists 1980.
[46] Giles and Elliot 1962.
[47] Tanner 1962.
[48] Genoves 1963.
[49] Downer 1975.
[50] Ubelaker 1978.
[51] Tanner *et al.* 1975.
[52] Brothwell 1972.
[53] ibid.
[54] Miles 1963.
[55] Maples 1978.
[56] Cornwall 1974.
[57] McKern and Stewart 1957.
[58] Stewart 1958.
[59] Brothwell 1972.
[60] Trotter and Gleser 1952.
[61] Trotter 1970.
[62] Brothwell 1961.
[63] Brothwell and Sandison 1967.
[64] Bourk 1967.
[65] Goldstein 1969.

Dental notation

The scheme of Brothwell forms the basis for the examination of dental health and variation.[66] The 32 teeth in the dental arcade are represented (as if the closed mouth is viewed from the front) as follows:

Numbers 1–8 denote the permanent dentition; letters a–e denote deciduous teeth. In addition, the following symbols (adjusted after Brothwell) have been used in the text above the details for the maxilla and below the details for the mandible:[67]

-	absent
*	unerupted

Right maxilla								Left maxilla							
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
Right mandible								Left mandible							

X	healed socket
O	erupting
x	healing socket
U	uneven wear
/	post-mortem loss
!	abnormal tooth shape
E	pulp exposure
r	roots only
C	caries cavity
$	post-mortem jaw breakage
A	abscess

For convenience, the four types are simply referred to by their first letter I. (incisor) C. (canine) PM. (premolar) or M. (molar). When a single tooth is being described in the text, it is usually written as for example: 'upper left PM2'.

Where abnormal eruption or development was suspected, the jaw was X-rayed and photographed. For named individuals, where preservation allowed, a full dental cast using Jeltrate Alginate was made so that further study could be made after reburial.

Measurements

Measurements of the long bones and skulls were made, where possible, for the determination of stature and indices. Where a measurement was made from a reconstructed bone, a note of this has been made. The measurements follow the slightly modified definitions of Brothwell.[68] The instruments used were an osteometric board, spreading callipers, sliding callipers, and a Harpenden anthropometer. Although the anthropometer is designed for use with living subjects, it is nevertheless completely suitable for many 'dry' measurements, and it has the advantage of digital read-out which minimizes operator error. The measurements are listed in full in Table 4.3.10.

[66] Brothwell 1972.
[67] ibid.
[68] Brothwell 1972.

PART 4

4. STONE COFFINS

by MARTIN BIDDLE

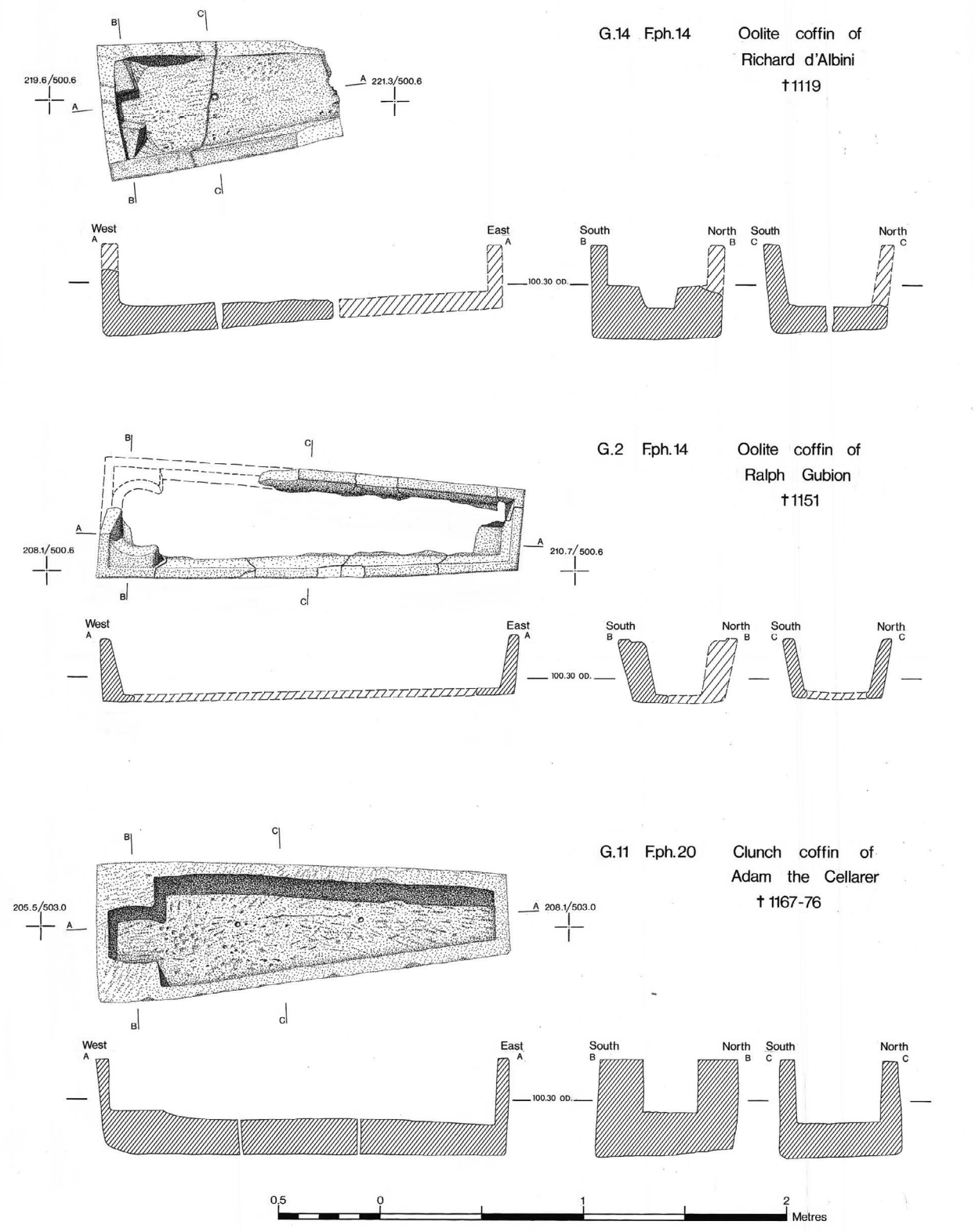
Ten of the 16 burials in the chapter house may originally have been in stone coffins (see Table 4.4.1). The burial of Paul of Caen, the first Norman abbot, was moved from G. 9 to G. 16 when the original apsidal-ended chapter house was extended and it is not certain whether either of these burials was in a stone coffin. It is also not clear, due to the destruction and disturbance of the graves in the chapter house following the Dissolution, whether Abbots Robert of Gorham, Simon, or John de Cella (G. 19, G. 18, and G. 15) were ever in stone coffins, although it must seem likely that some or all of them were.

The destruction of the coffins and the loss of many of their fragments means that it only possible to be certain of the stone used and the form of the coffin in the six cases arranged in chronological order in Illus 4.4.1 and 4.4.2 and listed in Table 4.4.1 The softer limestones such as Barnack and clunch were normally used, the harder and heavier Purbeck being used only for the coffin of Abbot Warin of Cambridge (G. 12). The plans and longitudinal and cross-sections of the coffins are essentially similar but G. 12 and G. 5 suggest that in the later twelfth and thirteenth centuries greater care was taken in forming the shoulders and head niches.

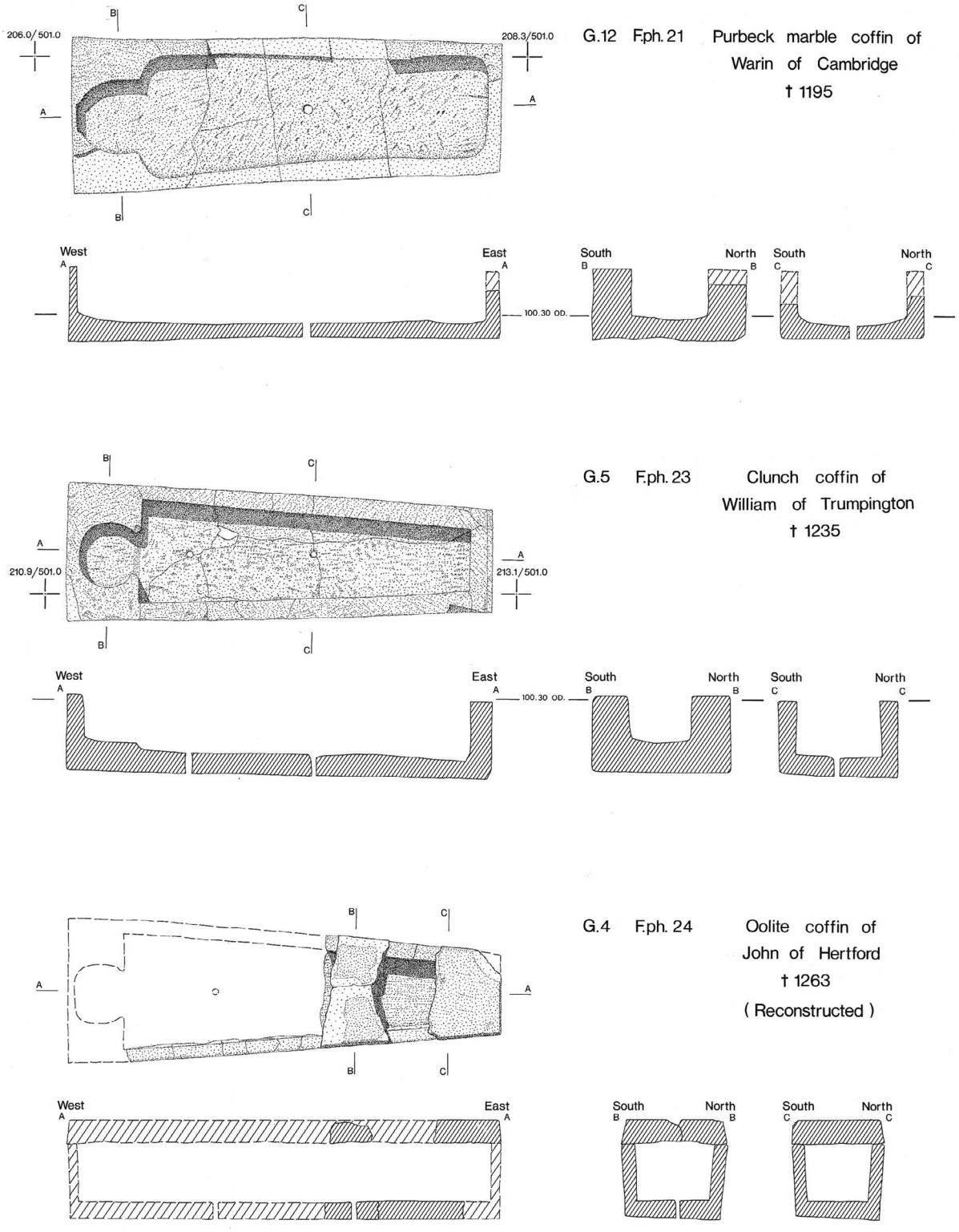
Table 4.4.1. Burials in the chapter house: the ten burials in stone coffins in chronological order (Graves 9 and 16 are counted as one since a stone coffin would have been moved with the body)

Grave	Name	Date of death	Rank	Stone of coffin
9	Paul of Caen *original burial*	1093	Abbot	If in stone coffin, ?Barnack Under? Tournai slab with epitaph
16	Paul of Caen *second burial*	early 12th cent.	Abbot	If in stone coffin, ?Barnack Under? Tournai slab with epitaph
14	Richard d'Albini	1119	Abbot	Barnack Under? Tournai slab with epitaph
17	Geoffrey de Gorron	1146	Abbot	Barnack Under? Tournai slab with epitaph
2	Ralph Gubion	1151 F.348	Abbot	Barnack, under PM slab
19	Robert of Gorham	1166 F.488	Abbot	If in stone coffin, ?Barnack Under? Tournai slab with epitaph
18	Simon	1183	Abbot	No coffin? Under? Tournai slab with epitaph
12	Warin of Cambridge	1195	Abbot	Purbeck coffin, plus Purbeck frags (*RF 120*, *RF 640*) from a slab ?intrusive, or from the PM coffin in this grave
15	John de Cella	1214	Abbot	Coffin ?none. Under? Tournai slab with epitaph
5	William of Trumpington	1235	Abbot	Clunch, under ? Clunch slab
4	John of Hertford	1265 F.173	Abbot	Barnack, under PM slab

The following graves lay in the east group of six: 14, 15, 9/16, 17, 18, 19. On the central East–West line: 2, 4, 5, 12.
Graves 2, 12, and 13 were in the original [former/later] vestibule of the chapter house.
Graves 14, 15, 9/16, 17, 18, and 19 were in the 'main body' of the chapter house.



Illus. 4.4.1. Monolithic stone coffins, twelfth century.



Illus. 4.4.2. Monolithic stone coffins, twelfth to thirteenth century.

Table 4.4.2. Burials in the chapter house: the six burials not in stone coffins in chronological order

Grave	Name	Date of death	Rank	Burial
23	Robert of the Chamber	1155/59	Priest, father of Pope Adrian IV	In a body-shaped earth grave below the tiles of the floor; wood-stain but no nails
11	Adam the Cellarer	1176	Prior	Earth cut into the shape of a stone coffin, covered by ?planks, F. 538, *RF 281*
7	Adam Wittenham	d. after 1349, before 1396	Prior	In wooden coffin, no nails. PM slab frags *RF 524*, *526*, *650*, *780*, *805*
6	Adam Rous	1379	Magister	In nailed wooden coffin. Purbeck marble slab, with indent brass, frags *RF 528*, *638*, and *1907*
20	Bartholomew	1384/93?	Priest, rector of Caxton, Cambs.	In wooden coffin? One nail
13	John de la Moot	1402 (?1401)	Abbot	In nailed wooden coffin, in stone-built shaft, in the doorway of the chapter house. Purbeck marble frags *RF 142* and *796* pres. from slab.

PART 4

5. MARBLE TOMB SLABS

by LAWRENCE A. S. BUTLER

For the fifteenth-century account of 'Burials in the chapter house', see Appendix I, pp. 494–5.

Tournai marble

Nineteen fragments of Tournai marble tomb slabs were found in Trench 3, in or above the sixteenth- and seventeenth-century robbing (by F. 321 and associated features) of the graves of six of the abbots: Paul of Caen (d.1093), Richard d'Albini (d.1119), Geoffrey de Gorron (d.1146), Robert of Gorham (d.1166), Simon (d.1183), and John de Cella (d.1214). For all these abbots the fifteenth-century account reports that they lay on the east side of the lectern beneath marble slabs with their epitaphs. The task of identifying the abbots from their epitaphs was made easier for the writer of the account by the fact that between 1093 and 1235 all nine men had different Christian names. The practice at many Cistercian abbeys was to start burial in the north-east corner of the chapter house and proceed southwards, avoiding any ceremonial path. By contrast, burial of the abbots at St Albans concentrated upon the east–west centre-line with Paul of Caen (the first Norman abbot) closest to the lectern, his two successors flanking him. Robert of Gorham was buried at the feet of Abbot Paul, with his successor Simon and then John de Cella flanking him. Five other abbots were buried on the central axis, west of the lectern and closer to or in the chapter house doorway (see Table 4.4.1 and 4.4.2 and Illus. 2.3.4).

One slab (*RF 705*) had a carved upper surface with a decoration of shallow planes; not enough survived to show the character of the pattern, but the closest comparison is with the tomb of Nigel, bishop of Ely (1133–69), which shows St Michael bearing the bishop's soul heavenwards. From the other small fragments of this slab it is difficult to advance any date although the central years of the twelfth century (*c.*1145–70) are probable.

Five other pieces had evidence of the edge of a slab with a near vertical angle (*RF 584*, *RF 651*, *RF 703, RF 1820*, and *RF 1928*). This second slab had traces of mortaring on the lower surface, presumably where it rested on a stone coffin or on the stone wall surrounding a wooden coffin. Three other very small fragments with a worn upper surface (*RF 577*, *RF 661*, and *RF 1859* [and $$?*671*]) were not informative. The fragments suggested that, in addition to *RF 705*, only one other Tournai slab was present. Slabs with vertical edges and inscriptions are found at Southover church, Lewes (formerly at Lewes Abbey), to Gundrada (d.1085), wife of the founder of Lewes, and at Salisbury cathedral (formerly at Old Sarum) to Bishop St Osmund (d.1099); both slabs were carved *c.*1145–70. If the slabs were contemporary with the burials, then Geoffrey de Gorron (d.1146) and his nephew Robert of Gorham (d.1166) are the most likely recipients. However, if one of these slabs was the memorial to an earlier abbot, then Paul of Caen (d.1093), the first Norman abbot, is the most likely; the driving force behind the commemoration could have been Abbot Ralph Gubion (d.1151), formerly chaplain to Alexander, bishop of Lincoln (d.1148), himself commemorated in his cathedral by a Tournai marble slab decorated with the Tree of Jesse.

The use of Tournai marble in England has been associated with Henry of Blois, bishop of Winchester (1129–71), who is thought to have introduced marble fonts into Winchester cathedral and three other churches in his diocese. His example was emulated by Alexander, bishop of Lincoln (1123–48), with a font at Lincoln cathedral and another at Thornton Curtis in his diocese.[1]

Purbeck marble

Eighty-seven fragments of Purbeck marble tomb slabs and sculpture were found scattered throughout the site.

i. Architectural fragments

Only five pieces are recognizable as architectural sculpture; these all came from attached columns of two different diameters (*RF 139*, which comes from the robbing of the grave of John de la Moote, d.1402), and *RF 660*, *RF 1227*, *RF 1930*, and *RF 1931* (no clear association with a grave: see Table 4.5.1). *RF 660* had been reused in later building and was heavily encrusted with mortar; *RF 139* was similarly reused in building but its diameter

[1] For further discussion, see Zarnecki 1986; Zarnecki 1988, esp. 90–6; Wood 2003, esp. 66–7; and Badham 2007.

could not be determined. The use of Purbeck shaft-vaulting first occurs at the abbey in the last decade of the twelfth century, but this material may have come from a late thirteenth-century cloister arcade. However these fragments are not closely datable, except in so far as they use the best quality beds and are likely to be early in the use of Purbeck.[2]

ii. Tomb slabs

Eight fragments come from tombs and indicate at least three low-relief effigies of high quality. The clearest evidence comes from *RF 764* (from the robbing of the graves of the six abbots, the last d.1214) where the edge of the slab remains and the effigy has been chiselled off. The edge is similar to the tomb at Exeter attributed to Bishop John Marshal (d.1206). The character of this same effigy or a similar one is given by fragments *RF 665*, *RF 1847* (also from the robbing of the graves of the six abbots), and *RF 1826* (no association with a grave) with evidence of robes; the sleeve terminal of *RF 1847* (Illus. 4.5.1) is paralleled on limestone statues from the chapter house doorway at St Mary's Abbey, York, *c.*1175–1200.[3]

RF 664 (from the robbing of the graves of the six abbots) and *RF 1084* (no association with a grave) have decoration in shallow planes best paralleled in the canopy on the memorial at Salisbury assigned to Bishop Jocelin de Bohun (d.1184); the raised surfaces of *RF 664* have been obscured by a sandy brown mortar (not that of the reuse of *RF 139* and *RF 660*). *RF 539b* (no association with a grave) has a roll-moulded tomb edge with a relief decoration overlapping the roll, again a common feature on four early thirteenth-century tombs at Exeter and Worcester. One fragment (*RF 517*, no association with a grave) is difficult to identify and may be part of a tomb panel, as on the tomb of Bishop Marshal at Exeter; its thickness (36 mm) makes it unsuitable for a floor slab. All the tomb sculpture described so far would accord with an early thirteenth-century date and the five fragments which come from the robbing of the graves of the six abbots can probably be assigned to the tomb of John de Cella, d.1214). However, although gravestones using Purbeck marble before 1200 are nearly all in Dorset and Wiltshire, tombs were transported to Exeter for bishop Bartholomew (d.1184) and to Westminster for an unknown abbot, perhaps Laurence (d.1173). It is, therefore, possible that a Purbeck marble slab was supplied to St. Albans to cover the grave of Simon (d.1183).

Fragment *RF 1894* (no association with a grave), and probably also *RF 2325* (no association with a grave), come from a later tomb canopy. *RF 1894* is a delicately crocketted shaft with two concave faces (Illus. 4.5.2), a smaller version of that on the effigy canopy of Bishop William of Kilkenny at Ely (d.1256) or of a free-standing canopy as over the tomb at York of Archbishop Walter de Gray (d.1255). The dating of these canopies suggests that the St Albans fragments might come from the monuments of William of Trumpington (d.1235) or John de Hertford (d.1265), although the comparison with the de Gray tomb at York would imply a standing canopy on the centre-line of the chapter house. This difficulty can be overcome by assuming that these canopy fragments came either from an abbot's throne or from a more ornate western entrance façade to the chapter house.

Four fragments of tomb slabs with roll mouldings and a slightly concave edge were recovered; of these *RF 539a* (no association with a grave) and probably *RF 622*, from the robbing of both G. 4, the grave of John de Hertford (d.1265), and of G. 5, the grave of William of Trumpington (d.1235), could belong to the tomb represented by *RF 764* (possibly from the grave of John de Cella, d.1214 (see above)); *RF 658* (from the robbing of the graves of the six abbots) has a similar profile but is from a different bed on Purbeck; *RF 706* (also from the robbing of the graves of the six abbots) has a different fillet between the slab and the moulding. For all these a thirteenth-century date is likely and they may also have come from the monument of Abbot John de Cella (d.1214).

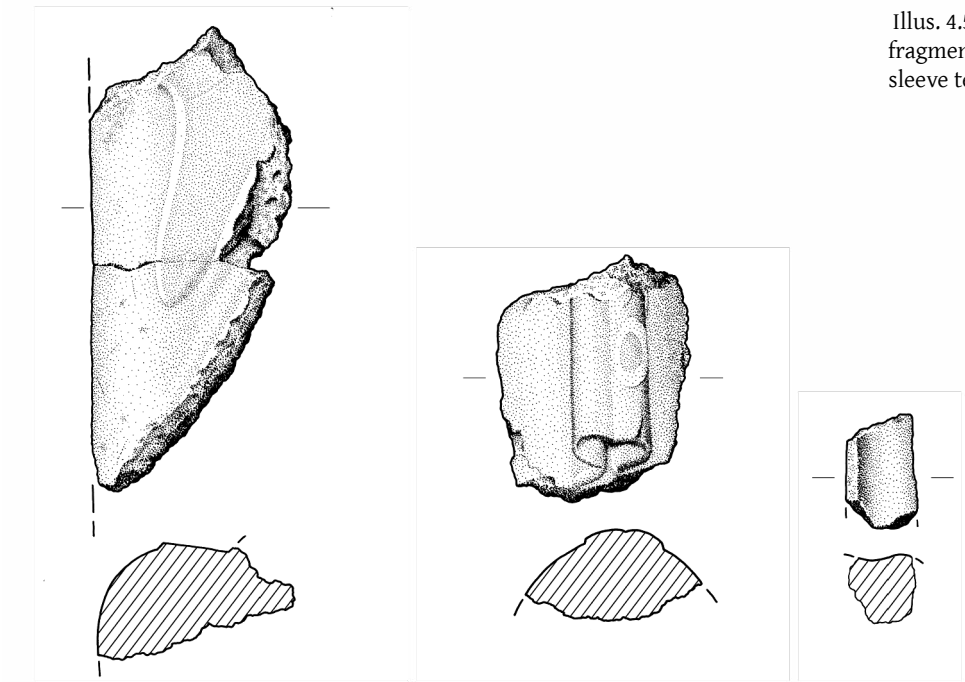
iii. Floor slabs for brasses

Four graves were covered by slabs which probably or certainly carried brasses: Adam Wittenham (d. after 1349), Adam Rous (d.1379), John de la Moote (d.1402), and, in the east walk of the cloister, Bartholomew Wendover (d. after 1384).

Eight slabs have a chiselled edge; they are from a coarser bed of stone and are likely to be from floor slabs which held figure brasses and not from tomb slabs: *RF 1907*, from G. 6, the robbing of the grave of Adam Rous (d.1379), *RF 524*, and *RF 526* (both from the robbing of G. 7, the grave of Adam Wittenham, d. after 1349), *RF 848* (from the fourteenth-century fill of G. 11, the grave of Adam the Cellarer, d.1167/76), *RF 142* (from the robbing of G. 13, the grave of John de la Moote, d.1402), *RF 796* (no association with a grave); and the bases *RF 818* (from the robbing of G. 7, the grave of Adam Wittenham, d. after 1349) and *1988* (no association with a grave). The fragments from *RF 640* (from the robbing of G. 12, Warin of Cambridge, d.1195) include a number of pieces from a similar floor slab but other coarsely tooled pieces appear to be from a tomb recess or free-standing arch; none are finely carved or polished.

[2] The early introduction of Purbeck marble in southern England has been attributed to Henry of Blois *c.*1141–54 by Zarnecki 1986, 168–9; its spread has been catalogued by Leach 1978 and its use in church monuments has been assessed by Badham 2007.

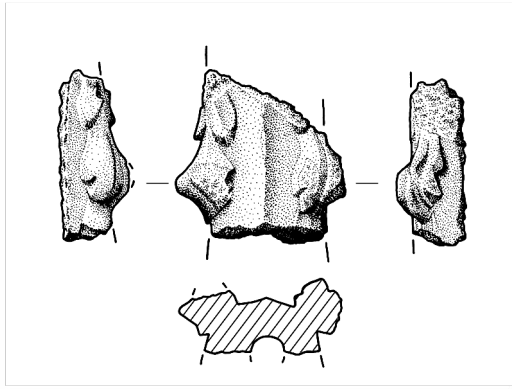
[3] Wilson 1984.



Illus. 4.5.1. Purbeck marble fragments (all three *RF 1847*, sleeve terminal on left; 1:3).

The Purbeck marble fragments *RF 844* and *RF 848* found in the fourteenth-century re-filling of the grave of Adam the Cellarer might suggest that the first tomb slab which impeded passage within the chapter house was a coped slab with Adam's name and his symbolic keys, similar to the tomb of Bishop Ralph Luffa (d.1123) at Chichester, with his name, mitre, and crozier. Adam's original slab was replaced in the fourteenth century by a flat slab with the keys.[4]

There were 12 fragments with an upper surface smoothed by wear; these also are likely to be from floor slabs. None were seen in 1978 which possessed indents and none had guide lines for the individual Lombardic letters which were becoming fashionable in the third quarter of the thirteenth century. *RF 638* from G. 6, the robbing of the grave of Adam Rous, d.1379, was also not seen and is published separately here.[5] None can be closely dated: *RF 528* (from G. 6, the robbing of the grave of Adam Rous, d.1379), *RF 650*, *RF 780*, *RF 805* (from the robbing of G. 7, the grave of Adam Wittenham, d. after 1349), *RF 120* (from the robbing of G. 12, Warin of Cambridge, d.1195), *RF 657*, *RF 677, RF 1938* (from the robbing of the graves of the six abbots, the last d.1214), *RF 529*, *RF 569*, *RF 1893*, and *RF 1918* (no association with a grave). It is possible that the tomb of Warin was a low-relief Purbeck effigy similar to that of abbot Clement (*c*.1189) at Sherborne, Dorset.



Illus. 4.5.2. Purbeck marble: crocketed shaft with two concave faces (*RF 1894*; 1:3).

The four tombs to the west of the lectern were described in the fifteenth-century account as marble slabs with their effigies and epitaphs *impressis*. These may be sunken low-relief effigies, or else incised figure slabs which would be more appropriate to the tombs of William of Trumpington (d.1235) and John de Hertford (d.1265). The word *impressis* might possibly refer to later brasses added to the tomb slabs.

The use of Barnack coffins for important burials continues a pattern of use recorded elsewhere in Hertfordshire, Bedfordshire, and Cambridgeshire. During the thirteenth century the head-niche becomes much more carefully carved with a raised 'pillow' step; there is also greater care over the drain-hole in the coffin base with grooves leading to it. The use of Barnack for at least four of the abbots' coffins and the contrasting use of clunch or wood for the coffins of priests and lesser

[4] *Gesta Abbat*., I, 206, stresses how Adam the Cellarer's obituary day was to be celebrated in the same manner as those of the abbots and that by his great merit he had obtained burial in the chapter house.
[5] See below, pp. 396–7.

officials is noteworthy. This makes the use of Purbeck for the coffin of Abbot Warin of Cambridge (d.1195) exceptional.[6]

One small fragment (*RF 1904*, no association with a grave) was not easy to place in a twelfth- to thirteenth-century context; it was a rectangular piece with a convex upper surface. It belongs to a type of ornament more often seen applied with other coloured marbles amid Flemish strapwork on showy tombs of early seventeenth-century date.

Table 4.5.1. Burials in the chapter house: fragments of tomb slabs of Tournai and Purbeck marble ordered by association with graves

Tournai marble

From the graves of the six abbots not in stone coffins (see above: the last d.1214) robbed by F. 250, F. 321, F. 406A, and associated features.

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
704	31	1539–*c*.1550	578	3, 631	F. 250. Robbing pit of six abbots' graves used as a lead-melting pit
663	32	*c*.1550–1600	582	3, 550	F. 321. As above
669	32	*c*.1550–1600	582	3, 450	F. 321. As above
703	32	*c*.1550–1600	582	3, 603	F. 321. As above
705	32	*c*.1550–1600	582	3, 480	F. 321. As above
712	32	*c*.1550–1600	582	3, 551	F. 321. As above
584	33	1600–50	583	3, 447	F. 321. As above
651	33	1600–50	583	3, 566	F. 406A. As above
659	33	1600–50	583	3, 566	F. 406A. As above
661	33	1600–50	583	3, 596	F. 321. As above
668	33	1600–50	583	3, 514	F. 321. As above
671	33	1600–50	583	3, 473	F. 321. As above
676	33	1600–50	583	3, 440	F. 321. As above
577	34	1650–*c*.1725	584	3, 382	Upper fill of F. 321
1928	34	1650–*c*.1725	584	3, 324	Upper fill of F. 321

No clear association with a grave

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
695	23–4	1214–*c*.1300	513	3, 492	F. 322
1820	38	1850–80	650	3, 138	F. 160. Original gas main. Service No. 10
1859	41	1920–37	660	3, 319	F. 159. Wigram and Ashdown excavation trenches
1925	41	1920–37	660	3, 319	F. 159. Wigram and Ashdown excavation trenches

[6] See above, p. 384–7. In this context it is interesting that Abbot Warin ordered that the bodies of monks should be buried under stone grave slabs, although the phrase *in lapideis sepulchris* could mean within stone coffins: *Gesta Abbat.*, I, 198.

Purbeck marble

From the graves of the six abbots not in stone coffins (see above: the last d.1214) robbed by F. 250, F. 321, F. 406A, and associated features.

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
764	31	1539–*c*.1550	248	2, 682B	F. 250. Pit used for melting lead. Beginning of large robber-trench for graves in Tr. 3
776	31	1539–*c*.1550	248	2, 682B	F. 250. As above
809	31	1539–*c*.1550	248	2, 681	F. 250. As above
810	31	1539–*c*.1550	248	2, 682B	F. 250. As above
811	31	1539–*c*.1550	248	2, 682B	F. 250. As above
1847	32	*c*.1550–1600	239	2, 420	Fig. 5.5.1. Rubble fill above robber-trench F. 249, with bone and burning, probably spread from F. 250
1938	32	*c*.1550–1600	239	2, 421	Rubble fill above robber-trench F. 249, with bone and burning, probably spread from F. 250
706	32	*c*.1550–1600	582	3, 513	F. 321. Robbing of abbots' graves
664	32	*c*.1550–1600	582	3, 550	F. 321. Robbing of abbots' graves
665	32	*c*.1550–1600	582	3, 550	F. 321. Robbing of abbots' graves
657	32	*c*.1550–1600	582	3, 551	Lower fill of F. 321. Robbing of abbots' graves
670	33	1600–50	583	3, 440	F. 321. Robbing of abbots' graves
677	33	1600–50	583	3, 514	F. 321. Robbing of abbots' graves
658	33	1600–50	583	3, 566	F. 406A. Robbing of abbots' graves
518	34	1650–*c*.1725	584	3, 382	Upper fill of F. 321. Robbing of abbots' graves
672	34	1650–*c*.1725	584	3, 426	Upper fill of F. 321. Robbing of abbots' graves

Grave 2: Ralph Gubion (d.1151)

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
1960	42	1937–40	426	2, 238	F. 134. Excavation of 1937–40, above G. 2

Grave 4: John de Hertford (d.1265)

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
1777	35	*c.*1725–*c.*1750	257	2, 304	F. 173/454. Robbing of G. 4

Grave 5: William of Trumpington (d.1235)

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
1807	35	*c.*1725–*c.*1750	258	2, 282	F. 171. Robbing of G. 5
1947	35	*c.*1725–*c.*1750	258	2, 604	F. 171. Robbing of G. 5

Graves 4 and 5 (see also above)

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
622	35	*c.*1725–*c.*1750	257	2, 502	F. 173/454. Robbing pit for G. 4 and G. 5
1728	35	*c.*1725–*c.*1750	257	2, 485	F. 173/454. As above
1886	35	*c.*1725–*c.*1750	257	2, 485	F. 173/454. As above

Grave 6: Adam Rous (d.1379)

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
528	31	1539–*c.*1550	241	2, 616	F. 346. Robbing of G. 6 ledger slab
638	31	1539–*c.*1550	241	2, 616	F. 346. As above
1907	31	1539–*c.*1550	241	2, 616	F. 346. As above
1818	32	*c.*1550–1600	242	2, 617	Demolition above robbing of G. 6 and N bench

Grave 7: Adam Wittenham (d. after 1349)

RF	F.ph.	F. ph. date	P.ph.	Trench and layer	Comments
780	26	*c.*1350–1396	199	2, 827	F. 597. From G. 7
519	31	1539–*c.*1550	238	2, 654	F. 249. As above
524	31	1539–*c.*1550	238	2, 682A	F. 249. As above
526	31	1539–*c.*1550	238	2, 654	F. 249. As above
650	31	1539–*c.*1550	238	2, 797	F. 249. As above
779	31	1539–*c.*1550	238	2, 797	F. 249. As above
805	31	1539–*c.*1550	238	2, 723	F. 249. As above
818	31	1539–*c.*1550	238	2, 654	F. 249. As above

Grave 11: Adam the Cellarer (d.1167/76)

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
844	25–6	*c.*1300–96	47	1, 374B	F. 504. Fill of the coffin for G. 11, except the silt in bottom. The fill must have arrived when the slab was replaced.
848	25–6	*c.*1300–96	47	1, 394	G. 11. Bottom frags of first cover left in but disturbed in removal.

Grave 12: Warin of Cambridge (d.1195)

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
120	35	*c.*1725–*c.*1750	65	1, 169	F. 300
124	35	*c.*1725–*c.*1750	65	1, 176	F. 300
513	35	*c.*1725–*c.*1750	65	1, 153	F. 300
640	35	*c.*1725–*c.*1750	65	1, 272	F. 300. In G. 12, secondary demolition rubble
735	35	*c.*1725–*c.*1750	65	1, 272	F. 300. As above
1875	35	*c.*1725–*c.*1750	65	1, 139	F. 300
1913	35	*c.*1725–*c.*1750	65	1, 185	F. 300. In G. 12

Grave 13: John de la Moot (d.1402)

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
139	31	1539–*c.*1550	56	1, 266	F. 338. Possible unsuccessful attempt to rob G. 13
142	31	1539–*c.*1550	56	1, 266	As above

No clear association with a grave

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
774	17	1154/9–? (pre-1166)	494	3, 613	Masons' débris layer running E from W face of F. 474
733	26	*c.*1350–96	38	1, 297	F. 367
744	26	*c.*1350–96	38	1, 297	F. 367
660	29–30	*c.*1450–1539	549	3, 456	W. 10. Rebuilding of boundary wall along line of W. 28
135	31	1539–*c.*1550	57	1, 204	-
514	31	1539–*c.*1550	246	2, 626	-
1959	31	1539–*c.*1550	246	2, 626	-
517	31	1539–*c.*1550	249	2, 544	-
603	31	1539–*c.*1550	251	2, 565	-
1930	31	1539–*c.*1550	579	3, 302	Primary demolition rubble (in the interior)
529	32	*c.*1550–1600	239	2, 625	-
599	32	*c.*1550–1600	240	2, 418	-
1982	32	*c.*1550–1600	240	2, 418	-
532	32	*c.*1550–1600	250	2, 269	-
1871	31–3	1539–1650	712	4, 212	-
1879	32–3	*c.*1550–1650	262	2, 353	-
1832	33	1600–50	574	3, 329	Tertiary or general levelling and tidying up after the first and second demolition
1893	33	1600–50	574	3, 329	Tertiary or general levelling and tidying up after the first and second demolition
1904	33–4	1600–*c.*1725	713	4, 205	-
126	33–5	1600–*c.*1750	62	1, 196	-
1227	33–5	1600–*c.*1750	62	1, 196	-

RF	F.ph.	F.ph. date	P.ph.	Trench and layer	Comments
1872	33–5	1600–*c*.1750	62	1, 196	-
1918	33–5	1600–*c*.1750	62	1, 196	-
539a	35	*c*.1725–*c*.1750	715	4, 108	-
539b	35	*c*.1725–*c*.1750	715	4, 108	-
1883	35	*c*.1725–*c*.1750	269	2, 563	-
1931	35–6	*c*.1725–*c*.1775	589	3, 292	F. 285. Robbing pit
1894	36	*c*.1750–*c*.1775	634	3, 371	Fig. 5.5.2. MG 18. Large modern grave, pre-Grimthorpe use of graveyard
569	35–7A	*c*.1725–1800	630	3, 318	General grave fill
1799	35–7A	*c*.1725–1800	630	3, 318	General grave fill
1084	38	1850–80	383	2, 44	-
1770	38	1850–80	78	1, 108	-
1310	38–9	1850–1900	644	3, 98	Rubbly soils from levelling
1152	39	1880–1900	652	3, 37	F. 101. Relaying of gas main? Service no. 10
1988	39	1880–1900	646	3, 348	Gravelly spreads from Grimthorpe levelling – rebuilding of slype
1826	41	1920–37	412	2, 612	-
1912	41	1920–37	660	3, 32	Wigram and Ashdown excavation trenches
1816	41–2	1920–40	407	2, 48	-
1689	44	1960–70	108	1, 68	-
2325	-	-	-	Modern grave N of chapter house	-
796	-	-	-	1, u/s	-
1897	-	-	-	1, u/s	-

PART 4

6. THE PURBECK MARBLE INDENT FOR A BRASS OF MASTER ADAM ROUS AND INDENTS OF BRASSES FOUND IN THE SHRINE OF ST ALBAN

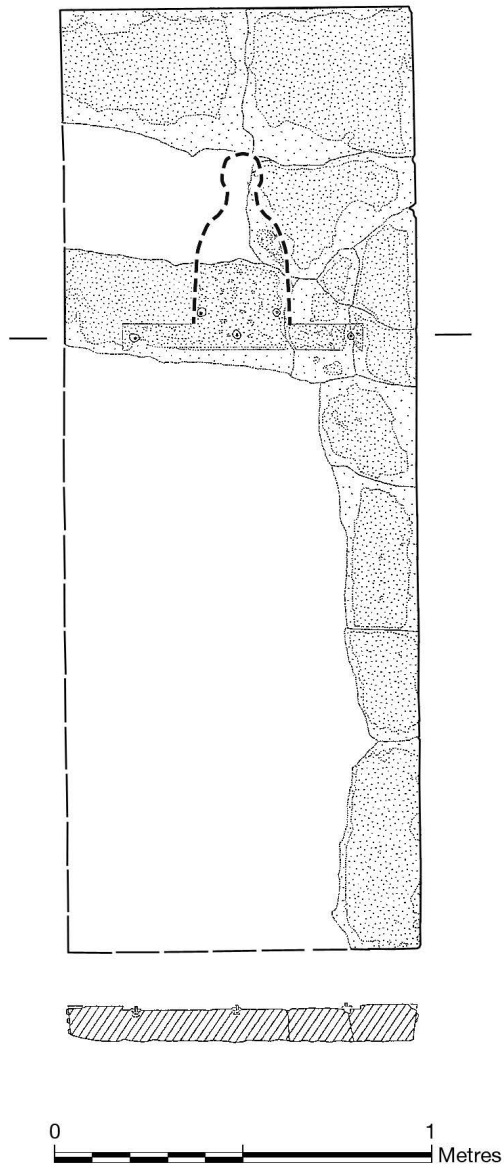
by RICHARD J. BUSBY

The remains of a Purbeck marble slab covering this tomb were found on the north side of the chapter house (G. 6). The slab (90 mm thick) was broken into a dozen pieces, and a large portion of the lower half and some of the upper part were missing (Illus. 4.6.1).

Although some of the surface is badly flaked or chipped, sufficient remains to show the indent of most of a half-effigy (maximum visible height 287 mm), with an inscription beneath (642 mm wide by 75 mm high). Unfortunately, the head and shoulders of the figure are missing, so no indication of costume or hair style can be used as an aid for dating the figure with certainty,[1] although it is clear that the effigy is facing forwards. Here the conjectural outline of the head and shoulders is based on the right hand of two full-length male figures of similar date at King's Somborne, Hants.[2]

Several of the lead plugs which secured the brass remain, three with their brass dowels remaining in situ, and most of the plugs bear the square punch marks commonly seen in the lead, made to help secure the plugs firmly in the holes made in the stone.[3] No trace of the black pitch, placed between the brass and the stone, remains visible anywhere on the indent. Whether there was a shield or other device a short distance below the inscription plate must remain conjectural, although the high position of the brass in the slab cannot exclude such a possibility.

The evidence for this being the burial-place of Adam Rous comes from the list of burials in the chapter house written about 1428.[4] This says that near the centre on the north side of the chapter house 'lies Master Adam Rows, formerly surgeon to King Edward III'. Only Rous's will (see below) offers any other indication of his burial at St Albans. Very little is known of Rous's background



Illus. 4.6.1. Purbeck marble indent for a brass of Master Adam Rous (d.1379) (1:20).

[1] Brasses were not always laid down at the time of death, sometimes before, sometimes later.
[2] See Norris 1988, Pl. 57; Lack 2007, 274 and illus. 275.
[3] For details of this and other fixing methods, see Cameron 1974, esp. 234–5 and Pl. XVIA.
[4] See below, Appendix I, pp. 494–5.

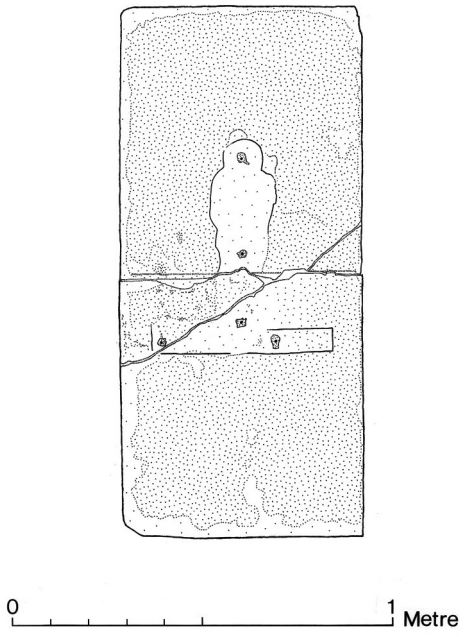
or medical training, and contemporary documents do not always refer to him directly as Adam Rous. Several references in the Calendar of Patent Rolls, for example, refer to a 'Master Adam the king's surgeon', and therefore cannot be attributed to this Adam Rous with absolute certainty. This has led to some confusion in the few published accounts of Adam Rous.[5]

Rous was certainly employed by Edward III by 1359, as he is cited in the Close Rolls for that year as 'Master Adam Rous, the king's surgeon', Edward having requested that Rous be recommended to receive maintenance for life from the abbot and Benedictine monastery of Croyland. Later Rous received a number of annuities and grants of property in the City of London and elsewhere from the Exchequer. In 1376 he was in dispute with the Prior of St Bartholemew's, Smithfield, over some of the above property in the parish of St Mildred in the Poultry, the case eventually coming to law.[6] In an Indenture of 1378, Rous is described as Master Adam Rous of the Poultry 'Surgien' of the City of London.[7] It is not clear whether he was retained by Richard II in the same office following the death of Edward III in 1377.

Rous made his will in London on 27 April 1379 and it was proved on 25 July following (the Feast of St James the Apostle).[8] He desired to be buried in the 'place appointed' by him in the monastery of St Albans, to which he gave bequests of money on condition that 'his obit be observed as directed'. The latter also related to the payment of a 'pittance' to the abbey to reserve his burial-place, and for the burning and subsequent disposal of tapers at his funeral. To his wife Juliana he left 'a certain tenement in the parish of All Hallows called *le Mechele*', and shops in the same parish in *la Roperye* for life. Other bequests were to various family members, including his brothers William and Simon and their families, to his servants and others, to the 'new work at St Paul's', and to a number of other London churches and monastic houses. A few years after his death, his widow Juliana's name appears in a grant of 1383 which she makes to the rector of St Michael's, Wood Street, and two others, of a 'tenement with houses which she now inhabits in Wodestrete in St. Alphege's parish within Crepulgate'. In the deed she is described as 'late wife of Adam Rous, formerly citizen and surgeon of London, widow'.[9]

Rous's brass appears to have been a standard design from the London B workshop. Although only its indent and part of the slab remains, its importance lies in the fact that this is the only surviving evidence of a brass to a royal surgeon, and certainly of one of this early date.

[5] Talbot and Hammond 1965, 7–8n.
[6] *Calendar of Close Rolls* 1374–77, 374–5.
[7] ibid. 1377–81, 225, 247.
[8] Sharpe 1889, Part II, Section I, 207–8, Roll 108 (13).
[9] Maxwell Lyte 1894, Deed A.2727.



Illus. 4.6.2. Purbeck marble indent for a brass found in the Shrine of St Alban in 1991 (1:20).

Purbeck marble indents for brasses found in the Shrine of St Alban

An unexpected discovery was made during restoration work on the Shrine of St Alban in the 1990s. The original pedestal had been destroyed after the Dissolution and broken into hundreds of pieces. In 1872 these fragments were rediscovered and painstakingly reconstructed by John Chapple, the clerk of works.

When the shrine pedestal was again dismantled in 1991 and the pieces taken to Harrison Hill's workshop at Brigstock, it was found that the lower parts had been made up of several reused monumental brass slabs of Purbeck marble. One piece was blank; one fragment (approx. 610 mm high x 660 mm wide at its greatest width) bore the indent of a small inscription plate (approx. 230 x 50 mm). The other two pieces joined together to form a complete slab (Illus. 4.6.2) bearing the indent of a small civilian figure (some 500 mm high) with a foot inscription under (480 x 60 mm). Five lead plugs remain, and while the outlines of the indent are not sharp, the small size of the effigy suggests an early sixteenth-century date.[10] The slab measures 1,040 x 650 mm. These reused fragments presumably came from the abbey itself, rather from elsewhere. They have all now been incorporated back into the shrine pedestal and are hidden from view.[11]

[10] Badham 1995, 161, includes rough sketches of the two indents.
[11] The two indents above are also recorded briefly, but not illustrated, as Items 127 and 128 in Lack *et al.* 2007, 514.

PART 4

7. THE REBURIAL IN THE PRESBYTERY IN 1979 OF THE ABBOTS AND OTHERS BURIED IN THE MEDIEVAL CHAPTER HOUSE

by JANE KELSALL
with contributions by HELEN PATERSON

On 10 April 1979 Dean Peter Moore wrote to Martin Biddle and Birthe Kjølbye-Biddle about a service to mark the re-interment of the abbot's bones. When would the bones be ready? Had the forensic expert Dr Michael Donmall finished studying them? Peter Moore was planning a service of Latin vespers at the abbey at All Souls-Tide, with Benedictine monks attending. It would be the first such service at St Albans Abbey since the Reformation. There was also a desire for a memorial stone to mark the place in the presbytery where the bones would be laid. Peter Moore had seen a fine memorial stone for St Etheldreda at Ely Cathedral, with lettering cut by David Kindersley, and wanted something similar for St Albans. A list of names must be recorded. A suitable stone must be found. All this would take months of planning.

His Eminence Cardinal Hume OSB agreed to give an evening lecture for the Christian Study Centre at the abbey on *The Benediction Tradition* on 21 November and was willing to arrive early to attend a special service. Peter Moore then wrote to the Anglican abbot of Nashdom asking if he would attend and was delighted with his positive reply. Abbot Wilfrid had participated in such a service only 11 months before. Roman Catholic and Anglican monks had sung Latin vespers together at the church of St Mary the Virgin at Ware in Hertfordshire, to mark the 900th anniversary of the foundation of the Benedictine priory there. Fourteen monks from Nashdom, Ealing, and Douai had formed a choir 'which was enough for the occasion and the building'. But more would be needed for St Albans Abbey.

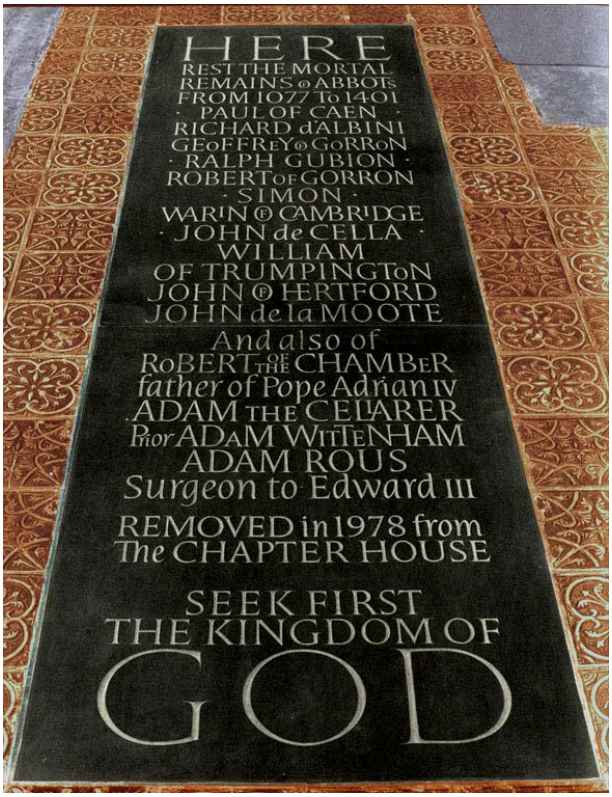
A monk's choir was soon formed from Nashdom, together with Roman Catholic monks from Ealing, Ramsgate, and Farnborough, who would wear their robes and cowls. The prior of Bec would lay a wreath on the memorial stone, and then Vespers for the Dead would be sung with Bishop Butler, the former abbot and headmaster of Downside, presiding. The bishop of Bayeux and the curé of Caen would also be coming. A rehearsal would take place before the service. The abbey congregation were delighted to hear about the plans for a real Latin vespers to be heard in the abbey. It would be an historic occasion, with all the St Albans clergy and bishops attending.

In June David Kindersley agreed to design the lettering and carve the names of those buried beneath the floor of the lost chapter house. Welsh slate was chosen and Kindersley began to work out the size needed to cover the boxes of bones.[1] The ledger stone must measure 0.91 m (3 ft) wide and 3.20 m (10 ft 6 in.) long and would be set in the presbytery floor surrounded by the Victorian Minton tiles already there, reproductions of the tiles which had once surrounded the abbots' graves in Robert of Gorham's twelfth-century chapter house.[2] Four of these nine-inch square tiles determined the width of the stone (Illus. 4.7.1). But there was a problem with modern quarrying methods: the slate could not be produced in one piece, so two had to suffice, which in fact made handling easier in the Kindersley studio.

The cathedral architect, Andrew Anderson, guided the design. The lettering chosen was based on the classical Roman of Trajan's column erected in Rome in AD 113. Linda Kindersley copied the size variation on the column: he designed letters of decreasing size to counter the perspective so that anyone standing at the foot of the stone and reading the long inscription would not notice that those at the beginning of the inscription are slightly larger than those at the end (Illus 4.7.1–4.7.2). Then there was discussion on the correct form of the names of the abbots, which vary over the centuries. Should we read *Geoffrey* and *Robert de Gorham* or *Geoffrey* and *Robert of Gorron*? And the first English abbot: should he be *Ralph de Gubion*? Martin Biddle decreed that the simplest modern form is best, so Geoffrey and Robert of Gorron, and Ralph Gubion it should be. At the foot of the stone there would be the text *Seek First the Kingdom of God* (Matthew 6.33).

[1] For Kindersley's account of how the slate commemorating the abbots of St Albans was designed and cut, see McKitterick and Lopes Cardozo 1992, 73–91.

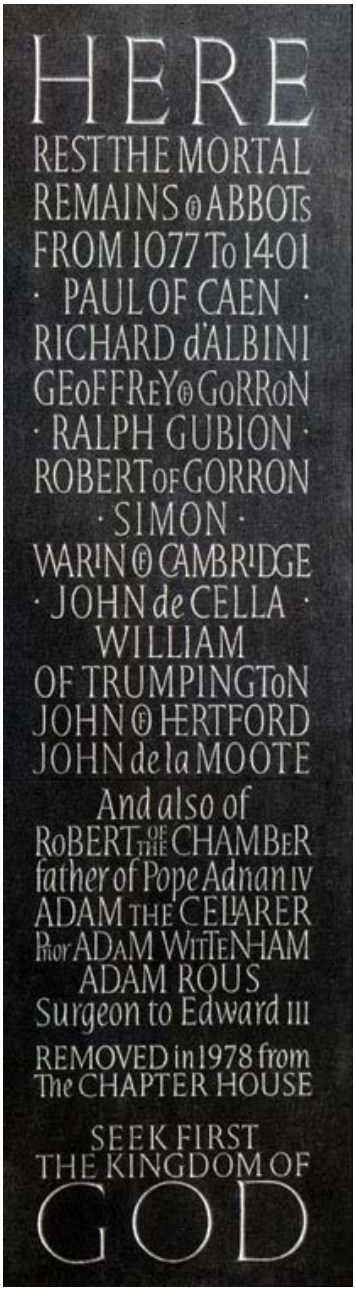
[2] For The Minton tiles, see above, pp. 309–15.



Illus. 4.7.1. The Kindersley slate commemorating the abbots of St Albans, set in the presbytery floor.



Illus. 4.7.3. Lead boxes containing the abbot's bones, laid in the presbytery floor.



Illus. 4.7.2. The Kindersley slate commemorating the abbots of St Albans.

For five months David Kindersley and his wife Lida were absorbed by aiming at a perfect design, with the letters to be cut by Lida. The length of each name varies and sometimes information needed to be added about the role of each man named. How hard it is to combine superb craftsmanship, artistic design, and the correct mathematical size of the letters! How perfect is the finished work! Many believe is the most beautiful twentieth-century addition to the interior of the Cathedral and Abbey Church of St Alban. It cost £2,571.40 and was paid for by the Fraternity of the Friends of St Albans Abbey. It arrived in early November. A place in the presbytery floor had been prepared and the lead boxes of bones were laid there (Illus. 4.7.3) with a simple ceremony and the memorial stone set carefully in place.

Wednesday 21 November, was a cold misty day and it was completely dark by 6 pm. The congregation had already taken their places for the service to consecrate the memorial stone, a service to be conducted in candle light.[3] The procession began with Taperers and the Crucifer bearing the crystalline processional cross which glittered as it caught the light. Then came the abbey choristers and lay clerks with the Master of the Music, followed by 40 monks, the same number resident at the consecration in 1115 of the abbey church begun by Paul of Caen nearly 40 years before. Then came the English and French abbots and priors, the St Albans clergy and bishops. The Dean and His Eminence Cardinal Hume OSB walked side by side, followed by the bishop of St Albans. As the monks took their places in the presbytery in a mist of incense, it seemed as if the past was present.

The Choir of the Abbey sang Mendelssohn's *Lift thine eyes* and after a congregational hymn Dean Moore unveiled the memorial stone, revealed by spotlight. The prior of Bec laid a wreath of laurel leaves and white chrysanthemums (Illus. 4.7.4). Then Vespers for the Dead resonated in the church for the first time since 1539 (Illus. 4.7.5). Bishop Runcie spoke movingly of the reburied abbots. Everyone present remembers this service.

There was only one awkward moment when Orlando the cathedral cat chose to make an appearance, sitting in the crossing as if hypnotized, listening to the plainchant. He had never done such a thing before. Being British, no one in the congregation chose to remove him and when the vespers ended he disappeared as silently as he had come. Had Dean Moore's attempt at ecumenism been undermined by this event? At the reception afterwards, Dean Moore apologized to one of the French abbots about the cat. The abbot looked a little puzzled and then, perceiving the embarrassment, reassured us that one of his monks kept a large white pet rabbit in the laundry which often joined in their services.

The memorial stone is a permanent testament to the lives of the 11 abbots, three monks, and a lay surgeon whose names are recorded in the Kindersleys' superb lettering. It is also a record of a wonderful archaeological dig which included so many skilled and unskilled workers. It is a testament to Dean Peter Moore and his inspiration to build a new chapter house, and to Professor Martin Biddle and Magister Birthe Kjølbye-Biddle who planned, dug, and documented this immense project from beginning to end.

[3] For the arrangements, see the letters in the Catalogue of the Muniment Room, Cathedral and Abbey Church of St Alban: IX. Files. Memorials. 2. The Reburial of the Abbots' bones, 1979.

A note on the lead caskets in which the abbot bones were interred, by Helen Paterson[4]

'I think we will put the abbots in plastic bags', so said Dean Peter Moore when discussions took place regarding the reburial of the abbots, whose bones were excavated in the summer of 1978. I felt this was a very undignified solution for the final resting place of these important named members of one of the most eminent abbeys of medieval England.

At this time extensive repairs were being undertaken on the nave roof of the abbey. This involved the use of substantial amounts of lead. I spoke to 'Sid', head mason of contractors Rattee and Kett, and discussed the possibility of making some lead caskets which would certainly be more in keeping and long lasting than 'interment in plastic bags'.

The number of bones excavated from each grave varied considerably, with some skeletons almost complete, while others had only a few phalanges remaining. Measurements were taken, and given to Sid, with long rectangular caskets to contain the most complete skeletons, and small square caskets for those with only a few small bones (Illus 4.7.3 and 4.7.6). The lead was some 6.35 mm (¼ in.) thick, making the caskets extremely heavy, with even the small ones of 5½ in. square weighing 10 lbs.

As is usual, white plastic labels with relevant archaeological information were placed in plastic bags in each casket. However, I felt some more permanent identification was needed, so cut out small fillets of lead with the names of the abbots stamped on them. The site chosen for the reburial was in front of the high altar. It was not known at this stage whether other tombs lay under the Victorian tiles. When the tiles were removed, a barrel vault was exposed, though fortunately there was enough space to lay the caskets on top of this vault.

Eventually, the caskets were put in place, together with a 1979 coin, and a short, moving service was held before the Kindersley memorial slab was laid over them. During the service I noticed Sid drop a piece of paper onto the caskets. At the end of the service Peter Moore retrieved the paper. On it Sid had written, 'Don't be nosy, put it back'. Peter Moore said, 'I like a bit of levity', and replaced the paper on top of the caskets.

So in this simple service, the abbots were laid to rest. They now lie in their lead caskets beneath the magnificent Kindersley slab.

[4] Finds Supervisor, St Albans Abbey excavations, 1978–1995.



Illus. 4.7.4. The Prior of Bec laying a wreath on the memorial slab.



Illus. 4.7.5. The service marking the reburial of the bones of the abbots and others from the chapter house.



Illus. 4.7.6. Bones of Robert of the Chamber (G. 23), Adam Wittenham (G. 7), John de la Moot (G. 13), and Abbot Warin of Cambridge (G. 12) (from left to right) in lead caskets.

PART 5. FINDS

PART 5

1.i. ROMAN COINS

by RICHARD REECE
with introductory note by MARTIN BIDDLE

The report which follows deals with 127 Roman coins, only three of which were found on the site of the chapter house in 1978. The importance of the Roman coin finds from the site of the Abbey is such that Richard Reece kindly agreed to include here the 119 coins found in the 1982–4 excavations (Trenches 5–8) at the south-west angle of the cloister and the five coins found in the 1994–5 (Trenches 10–13) at the north-west angle.[1]

Two of the three Roman coins found in 1978 came from pre-conquest deposits (*RF 646* from Final phase 3; *RF 215* from Final phase 6); the third came from a post-medieval demolition context (*RF 736* from Final phase 31):

1. 388–402 House of Theodosius, as CK 162. *RF 646*. Final phase 3, *c*.400?–*c*.800? (P.ph. 471): from F. 402 (pre-chapter house boundary ditch).
2. 345–8, Constans, as HK 138. *RF 215*. Final phase 6, *c*.800?–*c*.1000 (P.ph. 130): from G. 27 (a ninth- to tenth-century grave).
3. Third to fourth century. Illegible. *RF 736*. Final phase 31, 1539–*c*.1550 (P.ph. 58).

General comments

The picture of coin use in and around Verulamium was briefly summarized in the Folly Lane Report in 1999.[2] External coins follow the internal Verulamium pattern up to the mid-third century but with high values for the period up to 190. At the King Harry Lane site the coinage decreases after 260, while the Branch Road site and Folly Lane continue to 300 after which their coins also decrease. Coins excavated from inside the walls are present in reasonable numbers after 300 but external coins are rare to non-existent after this date.

The Abbey site is the complete opposite. There are no coins before 200. The denarius of Septimius Severus is an oddity as the only representative of the pre-radiate coinage; only two radiates at Verulamium, almost the urban home of radiate coinage, are surprising, and the coin of Carus is distinctly unusual. There are signs of activity, but very weak, before 330, and then coin deposition begins.

The balance between pre-348 and post-348 is untypical; most British sites have a peak in 330 to 348 and then more variable lower values after that. Here the 330–48 peak only just tops the two later values of 364 to 378 and 388 to 402. This suggests that while activity starts in earnest at the Abbey site after the 330s, it was flourishing in the second half of the fourth century.

Detailed comments

The full list below can be divided into two sections. First there are coins associated with graves and then there are the rest of the coins which were deposited either in, on, or above the pebble layers which sealed the Roman graves. Dividing the coins in this way should help to separate out two rather different reasons for coin deposition. It might well be that the coins associated with graves are intentional deposits in a well-established Romano-British tradition, while the rest of the coins are casual losses, or even discards from everyday activities.

Coins from Roman graves and burial deposits

Burial 54 includes six coins found by the head. All six coins belong to a closely dated group (337–41 (3), 345–8 (2), 335–45 (1)). While any one of those coins found separately could not be firmly dated within the period 330 to 360, the addition of each coin to the group narrows the likely date bracket of deposition considerably. It is interesting that there are no coins in the group from 330 to 337, a period of very high coin production and circulation. The absence of coins struck after the major changes to both module and value in the reform of 348 is less diagnostic, but still important. The final conclusion might be that the deposit was made close to the year 350.

[1] The Roman burials and the subsequent gravelled areas from which most of the coins came in 1982–4 and 1994–5 are analysed in Biddle and Kjølbye-Biddle 2001, 46–66. Also see Henig and Lindley 2001.
[2] Niblett 1999, 229–33.

Table 5.1.1. Verulamium: numbers of fourth-century coins

Date	Frere	Verulamium	Wheeler	Theatre	Abbey	St Stephens[3]
to 317	14	29	10	41	-	1
317–30	38	69	17	136	2	2
330–48	257	594	71	964	12	27
348–64	147	262	67	686	8	2
364–78	96	160	64	289	23	-
378–88	-	4	4	3	-	?1
388–402	36	52	27	41	17	-
Total	588	1,170	260	2,160	62	33

TABLE 5.1.2. Verulamium: percentages of fourth-century coins

Date	Frere	Verulamium	Wheeler	Theatre	Abbey	St Stephens[4]
to 317	2.4	2.5	3.8	1.9	-	3.3
317–30	6.5	5.9	6.5	6.3	3.2	6.6
330–48	43.7	50.8	27.3	44.6	19.4	80.2
348–64	25	22.4	25.8	31.8	12.9	6.6
364–78	16.3	13.7	24.6	13.4	37.1	-
378–88	-	0.3	1.5	0.1	-	?2.2
388–402	6.1	4.4	10.4	1.9	27.4	-

Next in the sequence must be Burial 156. Here there are three coins (345–8 (1), 348–50 (2)), all with dates in the very close bracket of 345–50. The absence of coins of 353–8, which do occur in other burials, supports the closeness of the bracket. The unworn condition of the coins suggested to me while I was making the lists, and before I knew any details of deposition, that they came from a small hoard. Deposition of coins in this grave ought to have taken place around 350, but slightly later than the deposition in Burial 54.

One coin in the cremation in F. 2683, struck between 330 and 335, may give a deposition date slightly earlier than Burials 54 and 156, but since it is a single coin it can only be firmly placed in the bracket 330 to 360.

Burial 58 (1 coin, 330–60), Burial 64 (2 coins, 350–60), and Burial 72 (1 coin, 330–40; 1 coin, 350–65) contain coins which cannot be very closely dated because they belong to a period of copying of coins struck about 350. All that can be said is that the burials cannot have been made before about 350; but they might belong, with decreasing likelihood, to the years between 355 and 370.

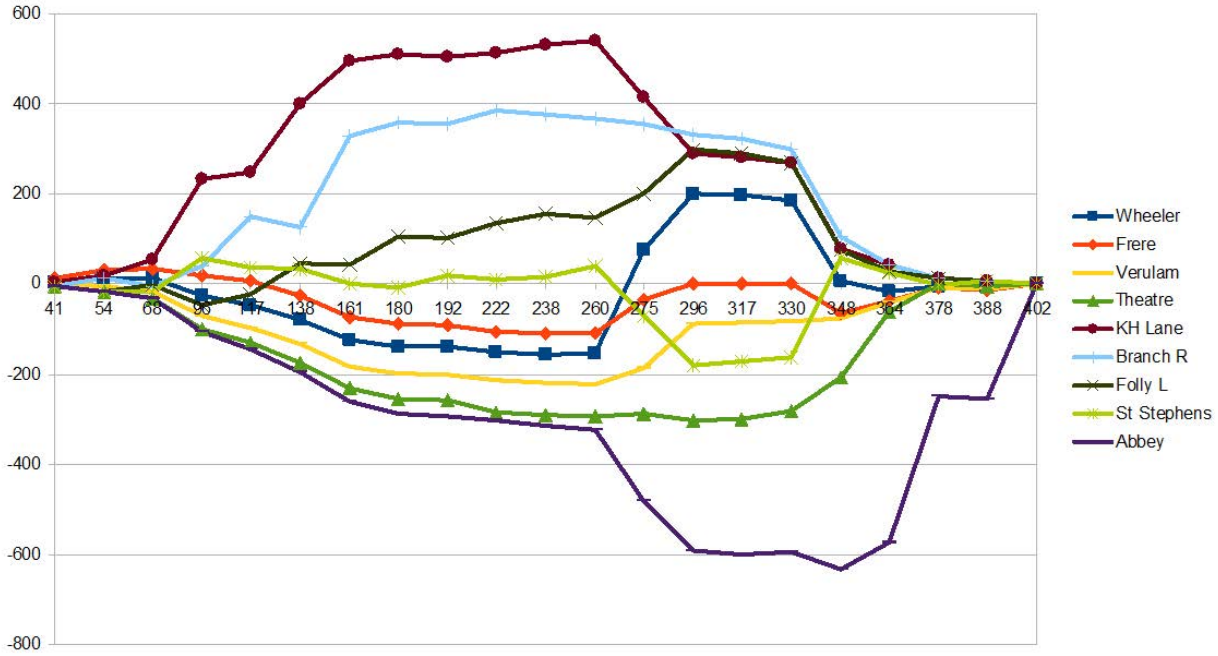
Burial 51 was provided with a small, but close-knit, group of three coins of the House of Valentinian (364–78). None of the three coins can have been struck before 367, but none of them is well enough preserved to narrow the date of production before an end-date of 378. All three coins are worn and may well have continued in circulation until about 390. The absence of coins of the House of Theodosius (388–402), which are otherwise common on the site, suggests a date of deposition of about 375 to 390.

Coins deposited either in, on, or above the pebble layers which sealed the Roman graves

Removal of the coins associated with burials leaves us with the coins related to the later activities on the site. Divided up by the usual periods of issue this gives us the following tables to which the coins from other sites at Verulamium may be added for comparison.[5]

Coins struck before 300 are omitted from the lists for two reasons. They form a major part of the coinage found on most Verulamium sites, but they are almost absent from the Abbey. This immediately marks the Abbey

[3] Site references and numbers come from Reece 1984 and 1999.
[4] Site references and numbers come from Reece 1984 and 1999.
[5] Figures and references in Reece 1984; for St Stephens cemetery, see the 'Additional note' below, p. 407–8.



Illus. 5.1.1. Graph showing the variation of cumulative proportional coin loss over time at various sites around St Albans, in relation to the overall cumulative mean of these sites (the cumulative mean follows 0 on the Y-axis).[6] An upwards gradient indicates a period during which coin loss at a site is above the mean, whilst a downwards gradient indicates a period during which coin loss is below the mean.[7]

coinage out as very different in composition from the rest of the area. Of coins struck between 330 and 378 a high proportion is found in the theatre deposit though this seems to tail off in the last period. At the Abbey the periods after 364 show a high percentage of coin loss and it almost seems as if deposit or discard moves from the theatre to the Abbey in the second half of the fourth century.

The theatre deposit was divided up during excavation into a brown layer and a black layer but, so far as I know, no one who has studied the material from the theatre has been able to show a clear chronological distinction between the different fills. This presumably means that the rubbish from some area of the town was moved into the disused theatre in the second half of the fourth century. Wherever the original rubbish deposit was formed, the coins included in it make it quite clear that the deposit started to accumulate by the middle of the third century at the latest. If the coins deposited on the Abbey site are also the result of daily loss and discard then, judging by the coins, that process only started in the middle of the fourth century. If the evidence of the burials is taken into account, and it is noted that the grave fills contained little if any domestic rubbish, then discard at the Abbey cannot have started until the last decades of the fourth century. But coins were discarded or lost in whatever activity was taking place and no one has yet made a convincing case for the common use of copper coinage after about 420.

The nature and wear of the coins in and above the pebble layers is totally consistent with a short period of use or discard towards the end of coin use in the area. A high proportion of the coins are fourth-century copies, most are of small module, almost all are worn, and amongst them there is a good representation of the latest coinage to enter Britain in any quantity (388–402). This is in total contradistinction to the coins associated with the burials which are generally in good condition, are official coins rather than copies, show little wear, and are buried in chronologically discrete groups.

While the coins found may help an understanding of the site, they also say something important about the changes in coin use that happened through the later third and fourth centuries. By the time coin deposition happened at the Abbey, from 350 onwards, not only were no coins of the period AD 1 to 250 found, but the radiate coins (260 to 296) had virtually vanished. By the time the burials had been sealed by the pebble layers, the coinage of the first half of the fourth century was only a small part of the coinage in use, and that which had survived was small, scrappy, and consisted mainly of copies.

Illus. 5.1.1 gives a pictorial account of the way in which coin loss varies through time at several sites around St Albans. The first site to 'take off' is King Harry Lane

[6] Method follows Reece 1995.
[7] The raw data behind the graph is represented in Table 5.1.4.

Table 5.1.3. Roman coin loss over time at various sites in and around St Albans

Date	Wheeler	Frere	Verulam	Theatre	KHL	Br R	Fo L	St St	Abbey
Before 41	15	31	15	2	1	-	-	-	-
41–54	33	46	16	3	3	1	-	-	-
54–68	27	33	11	3	6	-	2	1	-
68–96	58	97	50	13	29	4	2	9	-
96–117	30	40	32	25	6	5	4	1	-
117–38	26	30	37	26	23	1	8	3	-
138–61	33	30	37	25	18	9	4	2	-
161–80	22	17	31	4	5	2	6	1	-
180–92	7	6	10	7	-	-	-	2	-
192–222	26	18	34	8	4	2	4	1	1
222–38	6	13	17	8	3	-	2	1	-
238–60	17	14	10	17	2	-	-	2	-
260–75	633	382	505	534	4	5	14	3	-
275–96	442	291	627	413	2	4	16	2	2
296–317	10	14	29	41	-	-	-	1	-
317–30	17	38	69	136	1	-	-	2	2
330–48	71	257	594	964	4	1	2	27	12
348–64	67	147	262	686	3	-	1	2	8
364–78	64	96	160	289	-	-	1	-	23
378–88	4	-	4	3	-	-	-	1	-
388–402	27	36	52	41	-	-	-	-	17
	1,635	1,636	2,602	3,248	114	34	66	61	65

with its continuity from the pre-Roman period. This is followed by Branch Road and then Folly Lane, both with early Roman foci. The cemetery at St Stephens is interesting because it suggests two different periods of coin loss and perhaps therefore two separate phases of use which in fact agrees well with what Dr Niblett has so far reconstructed from the site record (see the 'Additional note' below). Almost following the central, mean, line the Frere excavations and the collection of Lord Verulam show what average coin loss is in Verulamium through the Roman period. The Wheeler excavations show a rise to a peak in the late third century and this may well reflect the particular phases of the sites he was able to excavate. The Theatre shows a late concentration which is well known, and the Abbey differs from all the other groups by almost ignoring all coin loss before the fourth century. The diagram therefore sorts out the coin loss on different sites and makes very clear the way in which coin loss at the Abbey site is unique for the Roman city.[8]

Additional note: the cemetery at St Stephens

Dr Ros Niblett has alerted me to the other Verulamium coin-producing cemetery at St Stephens, the subject of rescue excavations by different excavators between 1984 and 1989. She is at present working on the material in hopes of publication but has very kindly passed on to me the preliminary coin identifications and an outline of the main features of the site. The identified coins of the fourth century have been incorporated in Tables 5.1.1 and 5.1.2 above and more detail is given in Table 5.1.4.

The contrast with the coins and burials at the Abbey site is clear. The concentration of coins and burials here is at the end of the first century AD with two outliers in the mid-third century. The coins associated with burials and a deposit of animal (largely horse) bones may continue a little later, but all the coins are stratigraphically later than the actual horse bones and burials. A preliminary analysis of the find spots of the rest of the coins which were commonly lost in the late third and early fourth centuries suggests that

[8] Site references and numbers come from Reece 1984 and 1999.

Table 5.1.4. Roman coins from the cemetery at St Stephens: preliminary identifications

Date	Associated with burials	Associated with horse bones	General
to AD 96	9	1	5
96 to 193	2	7	10
193 to 260	-	2	5
260 to 296	2	5	38
296 to 317	-	-	2
317 to 330	-	-	2
330 to 348	-	2	25
348 to 364	-	-	2
364 to 378	-	-	-
378 to 388	-	?1	-
388 to 402	-	-	-
Illegible	2	2	56

they overlie a gravel surface, presumably put down in the late third century after burial had ceased, but Dr Niblett warns that this must only be taken as an interim suggestion.

There is therefore a strong difference in the dates at which the two sites, the Abbey and St Stephens, were used for burial, as judged by the coins, yet at both sites burial appears to be terminated by a gravel/cobbled spread on which a number of coins was deposited. This is as far as the numismatist can go; full commentary rests with the excavators.[9]

St Albans Abbey 1978, 1982–4, and 1994–5: composite list of Roman coins

1 Septimius Severus	RIC 53
1 Carus	RIC 29
1 Barbarous Radiate	Reverse from Pax
RIC 7	317–24
2 House of Constantine	?copy of Trier 154 (possibly cut-down Magnentius), early House of Constantine otherwise illegible
HK 330–48 and copies	
1 Constantine I	106
1 Constantius II	132
3 Constantinopolis	as 52, 77, copy of 191
5 Constans	138, as 138, 140, 160, 160 or 164
1 Theodora	as 113
11 House of Constantine	copy as 48 (5), copy as 49, copy as 87 (2), as 137 (2), illeg. (1)
CK 348–64	
3 Constans	35, as 35, 39
9 House of Constantine	copies as 25 (8), as 256
1 Magnentius	?copy as 214
CK 364–78	
3 Valentinian I	388, 514, 1420
3 Valens	as 97 (2), as 528
7 Gratian	as 299, 341, as 364, 378, as 503, 511, 540
13 House of Valentinian	as 96 (5),?copy as 96, as 275 (4), as 296, as 298, as 512
CK 388–402	
2 Valentinian II	562, reverse illegible
2 Theodosius I	as 163, 391
1 Arcadius	395
1 Honorius	806
11 House of Theodosius	as 162 (4), as 562, as 796 (2), as 789, as 1096, as 1105, rev. ill.
15 3rd–4th cent.	Reverses illegible
20 4th cent.	Reverses illegible
3 Late 4th cent.	Reverses illegible
6 Missing	

[9] See the additional note on the cemetery at St Stephens, pp. 407–8.

PART 5

1.ii. MEDIEVAL COINS

by HUGH E. PAGAN

The 1978 excavations produced only two English regal coins of the medieval period: a halfpenny of the 'florin' coinage of Edward III, dating 1344–51, and a halfpenny of Henry VI's annulet coinage of 1422–5. The first of these, of the London mint, had seen much wear prior to its deposit, while the Henry VI halfpenny, of the Calais mint, was generally in good condition with little evidence of circulation. The Henry VI coin was struck from dies not represented in the British Museum collection, as also perhaps was the Edward III coin, but no special significance should be attached to this as each of these coinages was on a considerable scale and no special effort has been made by the museum authorities to obtain a full representation of the dies concerned.

The coins in question may be described as follows:

1. Edward III. Florin coinage 1344–51. Halfpenny, London mint.

   Obv. Inscription not legible. Facing bust of king.

   Rev. [CIVI]/TAS/LON/DON. Cross with three pellets in each angle.

   Weight: 0.43 g. Die-axis: 90 degrees.

   Final phase 38–9, 1850–1900 (P.ph. 643): *RF 1223*.

   Worn and flan crinkled. Small perforation in third quarter of reverse. Obverse die not identifiable because of wear; reverse die not represented in British Museum.

2. Henry VI. Annulet coinage 1422–5. Halfpenny, Calais mint.

   Obv. HENRIC[']xREX[x]ANGLI. Facing bust of king, annulet by each shoulder.

   Rev. VIL/LA⁘/CAL/[IS'⁘] Cross with three pellets in each angle, annulet in centre of pellets in first quarter.

   Weight: 0.47 g. Die-axis: 135 degrees.

   Final phase 35, *c*.1725–*c*.1750 (P.ph. 715): *RF 76*, from F. 257.

   This is Variety 2 of Calais halfpence of annulet type as listed by Whitton (1938–41, 89), with the initial cross designated by him II. Dies not in British Museum.

PART 5

1.iii. POST-MEDIEVAL COINS AND TOKENS

by R. H. THOMPSON

The post-medieval coins from the site of the chapter house consist predominantly of small change, lacking for example any of the common silver sixpences of Elizabeth I. The series begins with Charles I, and may be summarized by centuries as follows:

Seventeenth century (22).	Twenty farthings, including a token, a sixpence, and a shilling.
Eighteenth century (13).	Four farthings, six halfpennies, two pennies, and a Dutch duit, which might have circulated as a farthing.
Nineteenth century (7).	One farthing, five halfpennies, and a countermarked piece.
Twentieth century (7).	One farthing, one halfpenny, a penny, two decimal halfpennies, a sixpence, and a Dutch cent.

The denominations may not all be quite what they seem. Three of the Charles I pieces (Nos 4, 5, 14) are from farthings which appear to have been deliberately divided. In area these fragments are approximately half of the complete coin, and it is not too much to suggest that they were cut to give change of half a farthing. This is a sum of which there was sufficient need for some to consider it worth the trouble of minting, in proposals of 1608[1] and 1651[2] and of perhaps 1636–41.[3]

It cannot be assumed in all cases that the coins had a monetary function when lost. The differing wear on either side of the William III sixpence (No. 20) suggests that in the eighteenth century it was used in a game such as shovel-board. The state of the William III shilling (No. 21), worn to a mere two-thirds of its proper weight of 92.9 grains, indicates that it circulated well into the eighteenth century; it was then bent into a partial 'S' shape, the purpose of which is not clear. The purpose of the countermark (No. 47) is likewise uncertain; possibilities would include a halfpenny token (although the blank is the weight of a farthing), some sort of shop ticket, truck ticket, or receipt, and the unofficial use of a branding-iron.

The weights of several of even the fresh or slightly worn coins fall below those recorded by Peck for British Museum specimens,[4] notably No. 23, where the recorded range is 69.6 to 84.0 grains; yet the shared use of a flawed die removes any doubt about its authenticity. The explanation for the need to extend the weight-ranges, which also appears in the Dunchurch hoard,[5] is that the weight-standard of copper lay not in the individual coin, but in the face-value of the pieces to be made from a pound of copper.

The low weight, however, of Nos 25–6 (recorded range 145.4 to 163.9 grains) and Nos 27–9 (132.6 to 160.3 grains), combined with their appearance and their smallness (recorded range 28.5 to 29.5 mm), points to their being contemporary counterfeits. No. 31, in contrast, is of good weight, but not only is the flan large (recorded range 23 to 24.5 mm), but the figure of Britannia is also larger than on a genuine impression, an effect attributable to casting. These counterfeits were actually made with a worn appearance, which makes them deceptive objects both to distinguish from genuine coins and for assessing the length of time they circulated. The probable total of five counterfeit halfpennies out of six from the eighteenth century is no higher a proportion than some statements of the time suggest: the mint in 1787 found thirty-seven per cent of the copper 'trash', twelve per cent blanks, forty-three per cent 'blatantly inferior', and only eight per cent having 'some tolerable resemblance to the king's coin'.[6]

[1] Snelling 1766, 5, and Appendix IV.
[2] *CSP Dom., 1651*, 313–15, No. 23.
[3] *CSP Dom., 1623/9*, 428, No. 68; Farquhar 1914, 180–1.
[4] Peck 1964.
[5] Robinson 1972, 148–51.
[6] Craig 1953, 253; Robinson 1972, 156.

All the English coins formed part of a nationwide issue. Place of origin is significant only in the case of the seventeenth-century token (No. 46), which was issued in Barnet, nine miles and six furlongs distant on the London/Holyhead road; both St Albans and 'Chipping' Barnet were then market-towns. Although the importation of duits or other copper coins from France or Holland, etc., was forbidden in 1685,[7] the occurrence of the odd piece as an isolated find (No. 48) is hardly surprising.

In the catalogue below information is set out in the following order: number in this report; privy mark or date; references; weight in grains, converted by reference to Caley[8] from the grammes in which the coins were weighed in the Department of Coins and Medals of the British Museum; die axis (the position of the reverse relative to the obverse) in degrees of a circle, except for Great Britain after 1860, when the axis is regularly 360° (gold and silver from 1887); diameter in mm (two dimensions in the case of fragments), except for the period since 1797, when the methods of production have resulted in flans of standard diameter; an assessment (except for denominations still current) of the degree of wear in use, as distinct from subsequent damage or corrosion (impossible to distinguish on No. 18), the difference between 'fresh' and slightly worn (abbreviated to 'sw') being somewhat subjective, though circulation in either case must have been short-lived; and context information.

England

Charles I

Copper 'Richmond' farthings, round flan [1625–34], Type 1c

1. Lombardic A as pm; P 134; 7.1 grs; 360°; 16.5 mm; sw; Final phase 37B, 1800–50 (P.ph. 315): *RF 1102*.
2. Horseshoe pm; P 176; 6.6 grs 180°; 16 mm; fresh; Final phase 37B, 1800–50 (P.ph. 315): *RF 9*.
3. Lion passant pm; P 179; 5.9 grs; 360°; 17 mm; sw; Final phase 36–7B, *c*.1750–1850 (P.ph. 590): *RF 1574*. Harp with six strings; reverse from worn die.
4. Unknown pm; P 134–94; 2.2 grs; 180°; fragment 15 x 8 mm; sw; Final phase 37B, 1800–50 (P.ph. 315): *RF 1097*.
5. Unknown pm; P 134–94; 2.0 grs; 360°; fragment 12.5 x 7.5 mm; sw; Final phase 37A, *c*.1775–1800 (P.ph. 604): *RF 1509*.

Copper 'Rose' farthings [1636–?44]; Type 2f. None have brass inserts.

6. Crescent/Crescent pm; P 340; 11.9 grs; 15°; 13.5–14 mm; sw; Final phase 37B, 1800–50 (P.ph. 315): *RF 8*. Found with No. 7.
7. Crescent/Crescent pm; P 340; 10.8 grs; 345°; 13.5–14 mm; sw (obverse corroded); Final phase 37B, 1800–50 (P.ph. 315): *RF 10*. Found with No. 6.
8. Crescent/Crescent pm; P 340; 12.6 grs; 360°; 13–14 mm; sw; Final phase 37B, 1800–50 (P.ph. 315): *RF 1099*.
9. Crescent/Crescent pm; P 340; 11.2grs; 345°; 13–14 mm; fresh; Final phase 37A, *c*.1775–1800 (P.ph. 605): *RF 1567*.
10. Crescent/Mullet pm; P 343; 10.6 grs; 345°; 13 mm; sw; Final phase 37B, 1800–50 (P.ph. 315): *RF 1100*.
11. Mullet and crescent pm/Crescent pm; Not in P; Rogers 1925–6, 115; 15.0 grs; 360°; 12.5–14 mm; sw; Final phase 43–6, 1940–82 (P.ph. 673): *RF 1026*. The mullet is punched into the obverse die more deeply than the crescent; cf. P 118, 119,?194, for altered privy marks.
12. Mullet/Crescent pm; P 344; 12.9 grs; 360°; 13–14 mm; sw; Final phase 37B, 1800–50 (P.ph. 610): *RF 1433*.
13. Mullet/Mullet pm; P 345; 15.7grs; 360°; 13–14 mm; sw; Final phase 37A, *c*.1775–1800 (P.ph. 604): *RF 1615*.
14. Mullet/? pm; P 344–5; 6.4 grs; 360°; fragment 12 x 6.5 mm; fresh; Final phase 37B, 1800–50 (P.ph. 315): *RF 1098*.

Charles II

Copper farthings

15. 1672; P 519; 92.7 grs; 180°; 22 mm; sw; Final phase 37B, 1800–50 (P.ph. 351): *RF 1202*.
16. 1673; P 522; 82.1 grs; 180°; 22–23 mm; worn; Final phase 43, 1940–60 (P.ph. 730): *RF 51*; Stops on obverse and reverse.
17. 1674; P 527; 82.7 grs; 180°; 22 mm; fresh; Final phase 42, 1937–40 (P.ph. 728): *RF 62*. Reverse from clashed die (with outline of king's bust).
18. [1672–9]; P 519–31; (49.9 grs); 180°; 22 x 18 mm; corroded fragment; Final phase 37B, 1800–50 (P.ph. 315): *RF 1068*.

William III

Copper farthings, Type 1.

19. 1697; P 659; 82.5 grs; 180°; 22 mm; fresh; Final phase 37B, 1800–50 (P.ph. 721): *RF 68*.

[7] Ruding 1840, II, 22.
[8] Caley 1965.

Copper halfpenny, Type I or II.

19a. 1698; Type I (P 651) or II (P 674). Not seen; although listed in the RF register as a 'penny', for this year it can only have been a halfpenny. Unstratified, *RF 3093*.

Silver sixpences, 1st bust, early harp and large crowns.

20. [1695–6]; ESC 1532–3; MCE 888–9; 40.5 grs; 180°; 20.5–21 mm; obverse worn, reverse very worn; Final phase 38, 1850–80 (P.ph. 725): *RF 56*. Stops on obverse.

Silver shillings, 1st or 3rd bust.

21. [1695–8]; ESC 1077–1112; MCE 847–77; 62.0 grs; 180°; 24 mm; very worn and bent into partial 'S' shape; Final phase 38, 1850–80 (P.ph. 346): *RF 1203*.

Great Britain

George I

Copper farthings, 2nd issue

22. 1724; P 828; 69.1 grs; 180°; 22.5 mm; sw; Final phase 36–7A, *c*.1750–1800 (P.ph. 329): *RF 32*.

George II, Young head

Copper farthings

23. 1733; P 860; 61.7 grs; 180°; 23 mm; sw; Final phase 40–1, 1900–37 (P.ph. 402): *RF 1120*. Obverse flaw between II, as on a British Museum specimen.
24. 1737; P 866; 70.4 grs; 180°; 23–23.5 mm; worn; Final phase 37B, 1800–50 (P.ph. 721): *RF 71*. Small date figures.

Copper halfpennies

25. 1729; cf. P 830; 128.7 grs; 180°; 29 mm; of worn appearance; Final phase 37B, 1800–50 (P.ph. 721): *RF 78*. Stop on reverse. Probably a (struck) counterfeit.
26. 1734; cf. P 847; 140.6 grs; 180°; 28 mm; of worn appearance; Final phase 37B, 1800–50 (P.ph. 723): *RF 1953*. Stops on obverse. Probably a (struck) counterfeit.

George II, Old head

Copper halfpennies

27. 1747; cf. P 877; 108.0 grs; 180°; 26.5–27.5 mm; of worn appearance; Final phase 41, 1920–37 (P.ph. 727): *RF 58*. Cast counterfeit reading GEORGIVS.
28. 1747?; cf. P 877; 101.1 grs; 180°; 27–27.5 mm; of worn appearance; Final phase 38, 1850–80 (P.ph. 642): *RF 1804*. Cast counterfeit reading GEORGIVS, with attempt at grained edge.
29. 1748?; cf. P 878; 122.2 grs; 180°; 27.5–28 mm; of very worn appearance; Final phase 37B, 1800–50 (P.ph. 315): *RF 1067*. Probably a (struck) counterfeit.
30. 1754; P 884; 136.8 grs; 180°; 28–29 mm; sw; Final phase 38, 1850–80 (P.ph. 725): *RF 52*.

George III

Copper farthings (1st copper issue)

31. 1773; cf. P 911, 913; 74.1 grs; 180°; 25 mm; of worn appearance; Final phase 37B, 1800–50 (P.ph. 352): *RF 1432*. Stops on obverse and reverse. Cast counterfeit.

Copper pennies (2nd copper issue)

32. 1797; P 1132; 433.4 grs; 180°; fresh; Final phase 37B, 1800–50 (P.ph. 721): *RF 79*.
33. 1797; P 1132; 425.8 grs; 180°; sw; Final phase 37B, 1800–50 (P.ph. 343): *RF 1435*.

Copper halfpennies (4th copper issue)

34. 1806; P 1376; 142.3 grs; 180°; sw; Final phase 42, 1937–40 (P.ph. 728): *RF 11*. No line beneath SOHO, no berries on olive branch.
35. 1806; P 1377; 137.8 grs; 180°; worn; Final phase 43, 1940–60 (P.ph. 675): *RF 1023*.
36. 1806; P 1377; 152.1 grs; 180°; fresh; Final phase 38, 1850–80 (P.ph. 382): *RF 1057*.

Victoria, Young head

Copper farthings

37. 1839; P 1554; 69.6 grs; 360°; sw; Final phase 42, 1937–40 (P.ph. 96): *RF 1189*.

Bronze halfpennies

38. 1862; P 1776; 85.0 grs; sw; Final phase 46, 1978–82 (P.ph. 687): *RF 1.*
39. 1862; P 1776; 84.1 grs; sw; Final phase 46, 1978–82 (P.ph. 687): *RF 2.*

George V

Bronze farthings

40. 1917; P 2329; 42.3 grs; fresh; Final phase 42, 1937–40 (P.ph. 97): *RF 1217.*

Bronze pennies

41. 1918; P 2252; 145.3 grs; fresh; Final phase 46, 1978–82 (P.ph. 469): *RF 1002.*

George VI

Bronze halfpennies

42. 1943; P 2436; 86.4 grs; fresh; Final phase 44, 1960–70 (P.ph. 444): *RF 1000.*

Elizabeth II

Cupro-nickel sixpences, 2nd issue

43. 1956; ESC 1838K; 42.6 grs; Final phase 44, 1960–70 (P.ph. 444): *RF 1001.*

Bronze new halfpennies (decimal coinage)

44. 1975; Seaby 1978, 4250; 27.3 grs; Final phase 46, 1978–82 (P.ph. 687): *RF 1003.*
45. 1976; Seaby 1978, 4250; 26.9 grs; unstratified: *RF 1014.*

Tokens

Barnet, Herts.: Drapers' Arms: Burges, James, fl. 1659–65.

Copper [farthings]

46. Rosette pm; Norweb iii. 2116; BW Herts. 25–6; 10.5 grs; 270°; 16–16.5 mm; sw; Final phase 37A, *c.*1775–1800 (P.ph. 605): *RF 1271.*

Countermarked pieces

47. [*c.*180–?]; not in Scott 1975; 73.6 grs; 27 mm; fresh; Final phase 37B, 1800–50 (P.ph. 315): *RF 1101.* Copper blank punched 'W·H' in crude unserif'd letters 4.5 mm high, in relief within serrated rectangular indent; cf. Scott 1975, Appendix 2: 'W R' on 1797 penny, 'I.W' on 1806–7 halfpenny, 'W.W' on 1811 penny token.

Netherlands

Gelderland (Duchy)

Copper duits

48. 1767; Verkade 1848, 108; Craig 1976, A2b; 43.7 grs; 360°; 22 mm; sw; Final phase 43, 1940–60 (P.ph. 731): *RF 17.*

Juliana

Bronze cents

49. 1962; Yeoman 1974, 57; 30.4 grs; 180°; Final phase 46, 1978–82 (P.ph. 112): *RF 1015.*



4 (*RF 1097*)



5 (*RF 1509*)



14 (*RF 1098*)



46 (*RF 1271*)



47 (*RF 1101*)

Illus. 5.1.2. Post-medieval coins and farthings (2:1).

PART 5

1.iv. JETTONS

by the late STUART E. RIGOLD

1. Jetton, brass. Unplaced Central Group or ?South German, late fifteenth century.

   Obv. *ABCDEFGHIKLMNOPQ (alphabetical legend). Mitred bust of prelate holding sword and sceptre. Three groups of three pellets in field.

   Rev. *A AN DTISIUDS (meaningless legend?). St George on horseback, killing dragon below horse's feet. Star as initial mark. Star and annulet in field.

   Weight: 1.25 g, Diam. 21 mm, Die-axis: 45 degrees. Small perforation through prelate's chest.

   Final phase 31, 1539–*c.*1550 (P.ph. 562): *RF 1840*.

Note by Hugh Pagan

This is an interesting jetton of the second half of the fifteenth century. Stuart Rigold and George Berry, the recognized experts on the series, would both place it early in the fifteenth-/sixteenth-century jetton series, but Mr Rigold inclines to a date in the third quarter of the fifteenth century and Mr Berry to a date nearer 1500. The occurrence of stars and annulets in the legend associates it with similar pieces of south German origin but the particular type appears to be unrecorded.

2. Jetton, probably Tournai, late 15th cent.
   Obv. Briquet (fire-steel), flint and flames (a ducal badge); cross initial mark. Cinquefoil stops: legend: VIVE. LE. DUC VIVE. LE. DUC.

   Rev. Short cross with terminal lys, crowns in quarters: GETTES SUREMENT GETTES

   Well worn. Diam. 26 mm, but looks a little chipped. Temp. Philip the Good or Charles the Bold (*c.*1450–77). Lost *c.*1500? Certainly of superior workmanship; for the Burgundo-Netherlandish market, but not made for an individual lord or official.

   Final phase 38–40, 1850–1920 (P.ph. 726): *RF 63*.

Nuremberg jettons, brass, mid-late series

'Normal' type: *Reichsapfel* (orb) in trilobe/three crowns and three lys. Garbled Lombardic legend.

3. Diam. 26 mm. 'Normal', but reverse not visible; garbled Lombardic legend; large orb, coarse; *c.*1525. Attached to plain disc (Diam. 28 mm) to make some sort of button? Final phase 35, *c.*1725–*c.*1750 (P.ph. 592): *RF 1835*.
4. Diam. 26 mm (pierced five times). 'Ship type' (ship/lozenge of four lys). A coarse, late specimen; garbled mixed letter but reads:

   Obv. HANS SCHULTES (Hans Schultes became a master in 1553, d.1584, but this is one of his first efforts *c.*1555).

   Final phase 37A, *c.*1775–1800 (P.ph. 604): *RF 1662*.

5. Diam. 25 mm (pierced). 'Normal' garbled, late with small orb, *c.*1540–55 (battered, lost later). Final phase 33–4, 1600–*c.*1725 (P.ph. 713): *RF 1831*.
6. Diam. 25 mm. 'Normal' garbled, late with small orb, *c.*1540–55 (battered, lost later). Final phase 38, 1850–80 (P.ph. 725): *RF 67*.
7. Diam. 24 mm. 'Normal' garbled, late with small orb, *c.*1540–55 (battered, lost later). Final phase 38, 1850–80 (P.ph. 621): *RF 1224*.
8. Diam. 25 mm. A cut quarter. 'Normal' garbled, late with small orb, *c.*1540–55 (battered, lost later). Final phase 37B, 1800–50 (P.ph. 723): *RF 70*.
9. Diam. 24 mm. Pierced twice. 'Normal' garbled, late with small orb, *c.*1540–55 (battered, lost later). Final phase 38, 1850–80 (P.ph. 725): *RF 66*.

Nuremberg jettons, brass, late series

'Normal' Hans Krauwinckel, with various texts as: GOTT ALLEIN DIE EERE SEI, etc. All quite fresh, made and lost *c.*1600 ±15. There was more than one Hans Krauwinckel, the first began *c.*1586: these are his products, common to *c.*1615, possibly later.



Illus. 5.1.3. Jetton 1, Unplaced Central Group or ?South German, late 15th cent. (*RF 1840*; 2:1).



Illus. 5.1.4. Jetton 2, probably Tournai *c.*1450–77 (*RF 63*; 2:1).

10. Diam. 25 mm. Bent. Final phase 37A, *c.*1775–1800 (P.ph. 605): *RF 1566*.
11. Diam. 20 mm. Final phase 37A, *c.*1775–1800 (P.ph. 604): *RF 1810*.
12. Diam. 20 mm. Final phase 37A, *c.*1775–1800 (P.ph. 605): *RF 1490*.
13. Diam. 20 mm. Final phase 37A, *c.*1775–1800 (P.ph. 605): *RF 1503*.
14. Diam. 20 mm. Final phase 35, *c.*1725–*c.*1750 (P.ph. 286): *RF 34*.
15. Diam. 20 mm. Final phase 43–5, 1940–78 (P.ph. 103): *RF 1214*.

Discussion

The only two thoroughly medieval jettons are Nos l and 2. They are in very different condition. No. l is not worn: these unplaced central pieces extend back to about the 1440s, but this one looks later in technique, though not near the Nuremberg style. I would tend to put it not too late in the second half of the fifteenth century rather than later. No. 2 which should safely be put about the third quarter of the fifteenth century is very worn (there was no duke but a duchess for 1477–81: after that it might refer to Mary's dreadful child, when there was a regency problem).

One cannot say much from two specimens, but I would have guessed they were both lost *c.*1500 or even earlier. The context of No. 1 supports this.

No. 3 is a 'singleton', especially if it is really joined to its blank plate. It is a pretty low-grade Nuremberg in execution.

Nos 4–9 are battered late pieces that had been around for some years since they were struck, but whether long enough to be in the same context as Nos 10–15 is difficult to say. Was the Chapter House used as a school? The Coventry Whitefriars, which was certainly used as a school, produced dozens of such jettons. Date of loss, perhaps 1580s, but every one seems to have got into a secondary, often very recent context.

Nos 10–15 are a new lot, but could be in use when Nos 4–9 were still around, if they are as early as about 1580s. These Krauwinckels and similar ones are the last common jettons in England; they certainly go on until *c.*1615 or later, but many of them, although commonly placed at this sort of date, could be earlier. In fact, all but one come from eighteenth-century contexts (four of them in F. 227), so these must be derived *en bloc*, together with No. 4 above.

PART 5

1.v. LEAD OR LEAD-ALLOY CAST TOKENS OR COUNTERS

by the late GEOFF EGAN

These seven tokens or counters have crudely executed linear designs on one face only. The diameters given are the widest points in the case of irregular flans. The weights given were obtained using an Oertling analytical balance, but were taken subsequent to the application of a thin protective layer to the pieces as a conservation measure.

1. Cross-hatching. Worn, 20 mm diameter, 3.66 g (cf. Dean's Type 4).[1] Final phase 37B, 1800–50 (P.ph. 315): *RF 1103*.
2. Design reminiscent of a double axe. Worn, 19 mm diameter, 1.84 g (cf. Dean's 'wheel' type).[2] Final phase 38–9, 1850–1900 (P.ph. 644): *RF 1241*.
3. ID, ?fleur de lys below. Little wear, 19 mm diameter, 3.28 g. Final phase 40, 1900–1920 (P.ph. 655): *RF 1060*.
4. I ?F, dots in centre and dotted border. Some wear, 18 mm diameter, 3.12 g. Final phase 37B, 1800–50 (P.ph. 721): *RF 69*.
5. IH or HI, dotted border. Little wear, 23 mm diameter, 5.31 g. Final phase 37B, 1800–50 (P.ph. 318): *RF 1321*.
6. A ?B to the sides of a central device, which is in outline reminiscent of Dean's 'wheatsheaf' type,[3] although here the representation may be of a horse's curb-bit, cross below. Some wear, 70 mm diameter, 5.80 g. Final phase 38–9, 1850–1900 (P.ph. 647): *RF 1274*.
7. W ?H, toothed border. Some wear, 22 mm diameter, 5.79 g. This piece has a more regular flan than the others here. Unstratified: *RF 913*.

The central dots of 3 and 4 may be from turning marks on the moulds used to produce these pieces. Several explanations of the function of similar objects have been advanced, most recently summarized by Dean.[4] The most likely one for the present pieces is that they were privately-issued tokens with a local circulation, used for purchases that involved smaller fractions of a penny than the official coinage catered for. Such tokens were widely used in the sixteenth and early seventeenth centuries.[5] It is possible that the pieces recovered represent more than one phenomenon.

Note by Pat Howe[6]

David Thorold[7] comments that such tokens were mostly used by farmers to reward temporary labour and appear to have been in use between the thirteenth and nineteenth centuries. This date-range includes that of the sixteenth and early seventeenth centuries suggested by Geoff Egan on the basis of the script. On this dating, and supposing that the pieces originated from St Albans, one might suggest that Token 7, with the letters I ?F, might belong to Joan Fitch, a very successful farmer from *c.*1649–84. According to her inventory she had a shop where the tokens might easily have been exchanged for goods.[8]

[1] Dean 1977.
[2] ibid.
[3] ibid.
[4] Dean 1977, 141–2.
[5] Grierson 1975, 165–6.
[6] Co-ordinator, Seventeenth-century Research Group, St. Albans and Hertfordshire Architectural and Archaeological Society.
[7] St Albans Museum Service.
[8] Hertfordshire Archives and Library Service (HALS), A25/4141.



1 (*RF 1103*)



2 (*RF 1241*)



3 (*RF 1060*)



4 (*RF 69*)



5 (*RF 1321*)



6 (*RF 1274*)



7 (*RF 913*)

Illus. 5.1.5. Lead cast tokens 1–7, see p. 417 (1:1).

PART 5

2. PAPAL BULLA

by TIM PESTELL

Lead papal bulla of Clement VI (1342–52). *RF 649*, Trench 3, unstratified.[1] 37 mm in diameter and 4–5 mm thick; weight 42.128 g. Clement VI was himself a Benedictine monk and was said to have confirmed Thomas de la Mare's abbacy 'without difficulty'. While at Avignon, Thomas secured papal privileges, granting him the right to appoint the prior of Tynemouth and confirming the subjection of the dependent priory to the authority of St Albans.[2]

The obverse contains the legend CLE/MENS/PPVI. Five-petalled rosettes precede the initial C: two are above the L, one precedes the PP, and another follows the I. The reverse is of the standard design depicting Sts Paul and Peter contained within almond-shaped pelleted aureoles, with a cross upon a standard between them and the abbreviation SPA·SPE above. The reverse is sealed at 348° to the obverse, an unusually loose orientation. The openings for the two silk or hemp threads that once ran through the middle of the bulla to secure it to the original document are well preserved.

Discussion

Authentication of papal charters in the medieval period was provided by the use of a lead seal, a practice that had been maintained by the papacy since at least the early seventh century, and which drew upon the use of such lead seals in the Byzantine court of antiquity. The use of these *bullae* was to lead to the papal documents themselves being called 'bulls'. In appearance they were remarkably conservative and for most of the medieval period they featured a standardized design with a reverse depicting Sts Paul and Peter either side of a cross. The dies used to produce this side were only occasionally changed and would thus appear on the bullae of various successive popes before the cutting of a new one was considered necessary. The generic obverse design was similarly long-lived, the names and numbers of popes from Paschal II (1099–1118) to Pius II (1458–64) all appearing in three lines. Over time, however, the lettering style for various popes became more ornate and occasionally motifs were added. The first pope to do this was Clement VI who used five-petalled rosettes, here with the large one before the initial C of his name.

The chief interest of this bulla is its variant design from that which seems to be more normally encountered on Clement's bullae. That has a single rosette above the L of Clement and another single rosette centred beneath the P and the V of PPVI.[3] In fact, Clement appears to have had at least three different obverse dies as another example, sadly unprovenanced, has been observed by the present writer with a single rosette above the L, no rosette before the initial C, and two rosettes beneath the P and V of PPVI (Illus. 5.2.3). The use of more than one obverse die by a pope is not unknown; Williams defines four types for Gregory IX (1227–41),[4] while Innocent IV (1243–54), Alexander IV (1254–61), and Honorius IV (1285–7) each had at least two.[5] Indeed, the papal chancery, the department of the *curia* that issued documents, was extremely prolific from an early date. One historian, for example, estimated that Boniface VIII (1294–1303) issued more than 50,000 letters per year.[6] In such circumstances, it is perhaps a wonder that more duplicate dies were not regularly needed and a future research question will be to identify further variant dies used by other popes and their dates of use.

The discovery of a bulla in the excavations at St Albans is not surprising given the ecclesiastical nature of the site, although an ever-increasing number are now known from across the countryside and on secular sites through recording by the Portable Antiquities Scheme. Clement VI's bullae are relatively common, with 11 now known from the diocese of Norwich which has

[1] The bulla was recovered from spoil in a dumper truck; the spoil was apparently excavated outside of the north wall of the chapter house, attributed in the site notebook to Trench 3, Layer 531, F. 473, Final phase 21–3 (Provisional phase 528), an E–W ditch along the north side of the wall, with a context date of 1183–1235. While there is no good reason to doubt the location outside the north wall, the layer is either wrongly phased, given the 14th-cent. date of the bulla, or the find wrongly attributed to Layer 531. In either case, the location outside the north wall of the chapter house might suggest that the bulla derives ultimately from reworked grave fill in the monks' cemetery.

[2] Preest and Clark 2019, 773, 780.

[3] Serafini 1910, I, Tav. K, 10.

[4] Williams 1993, 65.

[5] For illustrations of which, see de Gray Birch 1900, VI, nos 21774–97 and 21833–9.

[6] According to the historian Fawtier, see Lawrence 1973, 429.



Illus. 5.2.1. Papal bulla from St Albans Abbey chapter house: scale 2:1.



Illus. 5.2.2. Bulla from Oxborough, Norfolk (HER 50137): scale 2:1.



Illus. 5.2.3. Unprovenanced bulla probably from Norfolk: scale 2:1.

good metal-detector liaison. Judging by the numbers of bullae now recorded, there appears to have been a resurgence in the issuing of bulls by the curia in the mid-fourteenth century, with a peak for those of Clement VI and his successor Innocent VI, possibly associated with the Black Death. Furthermore, excavation is increasingly showing that bullae were buried with the dead, a practice explicable by a belief in them as a talisman (perhaps because of their associations with the Holy City) or, more probably, because they were buried attached to documents which have since rotted away. An example using a bulla of Clement VI is Bishop Trilleck of Hereford (d.1360) whose grave was excavated in 1813. Found attached to his preserved crosier was 'by a skein of silk, in a perfect state, the bull of Pope Clement VI, as the inscription shows'. Here, it was speculated that the bulla had been attached to 'the instrument which had appointed the deceased to the see'.[7] If a bulla does indicate the former presence of a document buried with an individual, perhaps the most plausible type of papal letter usually incorporated would have been an indulgence; it would be easy to see

[7] Havergal and Haddon 1869, 148.

why the spiritually worried and superstitious might increasingly want such documents buried with them during, and in the aftermath of, the Black Death.[8] Certainly, the authority of indulgences sealed with the papal bulla are made apparent in the rubric to prayers in some English manuscript collections as noted by Duffy:

To all thilke that seyn this orison, xx days contynewyng there is graunted to hym playn remission as hit is retyn at Rome in the mynster of Seynt Peter under a bul of led.[9]

The burial of bullae is known from St Albans itself, recent excavations in the exterior angle of the presbytery and south transept revealed examples in a grave identified as that of John of Whethamstede (*c.*1390–1465), abbot of St Albans 1420–40 and again from 1451–65. Remarkably, three bullae, all of Martin V (1417–31), had been buried with John, possibly the bulls granted to the abbot in 1423 at the Council of Pavia/Siena.[10] As was speculated for Bishop Trilleck, these suggest the importance of taking papal charters other than indulgences to the grave; it also points to the importance of the authenticating bullae being retained as much as the documents to which they were attached.

While it is unknown whether our present example was originally buried with an individual and subsequently detached, or was simply a stray find that had found its way into the earth, we will clearly never know. However, given the amount of reworking of soil typical in medieval cemeteries, this must remain at least a strong possibility.

[8] For a discussion and listing of such finds, see Gilchrist and Sloane 2005, 94–6 and Tables 5 and 6.

[9] Duffy 1992, 291

[10] It is the narrative account given in the so-called *Annales* attributed to John Amersham that describes Whethamstede's encounter with Martin V and the granting of the three privileges with which these bullae may be associated. The identification of the burial as Whethamstede by the presence of the bullae was made by James C. Clark when Martin Biddle asked him to consider the placement when the burial was first uncovered.

PART 5

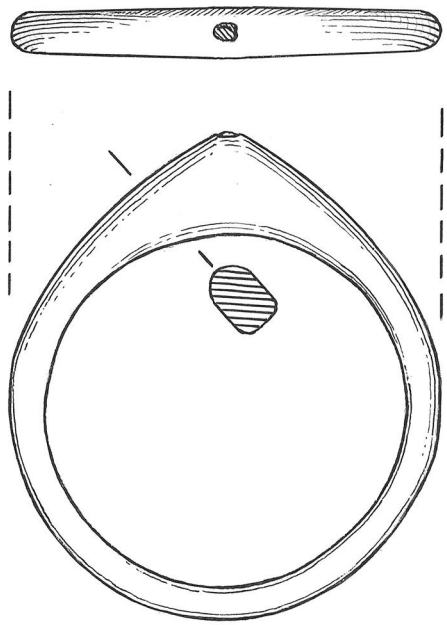
3. STIRRUP-SHAPED GOLD RING

by JOHN CHERRY

The gold ring (*RF 1788*) is from Final phase 34, 1650–*c*.1725 (P.ph. 584). It was found in the upper fill of F. 321 (Trench 3, Layer 324), which is a feature related to the robbing of the graves of six abbots (the last d.1214). The ring could have come from any of these.

This gold ring has a stirrup-shaped hoop set with a small green emerald (Illus. 5.3.1). The ring (external diameter 19 mm) has a remarkably pure metal content (95% gold, 1.5% silver, and 3.5% copper). The gold content is high, but it may be paralleled by the analysis of the thirteenth-century stirrup-shaped ring found in Hatfield Forest, Essex. Its composition was 95.5% gold, 2.2% silver, and 2.5% copper.[1]

Stirrup-shaped rings are so called since the shape of the ring is thought to resemble that of the stirrup; the bezel of the ring representing the loop of the stirrup. The use of the name is a Victorian invention. The evidence for the beginning of the use of this shape in the twelfth century is two-fold. An example was found in a grave attributed to Bishop Hilary of Chichester (d.1169) and secondly the history of a stirrup-shaped ring at St Albans Abbey given by Matthew Paris suggests that it was made in France, in the twelfth century.[2] Although the Chichester evidence is not very reliable, the evidence of Matthew Paris is much stronger. Fine examples of stirrup-shaped rings found at Wittersham and Windsor have been repeatedly assigned to the late twelfth and early thirteenth centuries. In smaller sizes the stirrup-shaped ring is one of the most common types of decorative rings. There are 55 examples in the British Museum and six examples in Charles Oman's *Catalogue of Rings in the Victoria and Albert Museum*.[3] There is no satisfactory evidence for the date of the ending of production of this type of ring which may have gone on until the beginning of the early fourteenth century.



Illus. 5.3.1. The stirrup-shaped gold ring (2:1).

Most rings of this type are set with either a sapphire or ruby and the use of an emerald is unusual, which is paralleled by only one other example in the British Museum.[4]

The context of the finding of most of these rings is not known. One at least has been found in a secular context at Kings Lynn.[5] Others such as the gold ring recently found at the Dominican Priory, Oxford, have been found in ecclesiastical associations.[6] The find of the St Albans ring in the chapter house strengthens the ecclesiastical associations of this type of ring and raises the possibility that it might have been worn by an abbot and produced at the abbey.[7]

[1] BM Reg. No. 1980, 12-2, 1; Ward *et al.* 1981, 64, No. 125.

[2] The Chichester ring is published by Waterton 1863, 235. A recent discussion of the drawings of the St Albans rings and a comparison with the Wittersham ring may be found in Ward *et al.* 1981, 62.

[3] BM 1976, 264, No. 462. The Windsor ring is published by Oman 1930, No. 251. Stirrup-shaped rings are also discussed in Battke 1953, 52, No. 61.

[4] Dalton 1912, No. 1808.

[5] Clarke and Carter 1977, 287, Fig. 30, No. 2.

[6] Lambrick and Woods 1976, 214, Fig. 11, No. 1.

[7] Clark 2020: there is good evidence of goldsmiths present at St Albans in the witness lists of the charters contained in the sacrists' cartulary, as well as references in *Gesta abbatum.* Also see *Liber Additamentorum* (printed by Luard in vol. 6 of *Chronica maiora*). See Ogden 2021 for a detailed account of the types of gems in use at St Albans and their terminology.

PART 5

4. GOLD THREAD FROM THE GRAVE OF ABBOT WARIN OF CAMBRIDGE

by the late ELISABETH CROWFOOT[1]

RF 620 Mass of broken fragments, very fine spun-gold thread.

RF 621 Small fragments of thin beaten gold adhering to soil, no sign of any spinning or textile use, apparently scraps of deteriorated gold leaf.

Both from Final phase 35, *c.*1725–*c.*1750 (P.ph. 65), from the robbing of G. 12, the grave of Warin of Cambridge, abbot 1183–95 (Trench 1, Layer 272, F. 300). For the grave and the other finds from its robbing, see above.[2]

The only recognizable textile remains from the tomb of Abbot Warin are the mass of small fragments of very fine 'spun-gold' thread, i.e. threads made with a strip cut from very thinly beaten and drawn out gold, wound by spindle round a fibre core of thread, most commonly of silk or flax. The strip is rarely pure gold, but the colour of these pieces suggests a high percentage;[3] the fibre core has completely disintegrated. The strip, originally wound closely edge to edge, about two wraps to the mm, is evenly cut, in most fragments *c.*0.5 mm. wide, though a few pieces vary from 0.35–0.4 mm. Pressure points left on the gold by the passage of fibre threads that bound it down are still visible on all the scraps.

These threads must come from gold patterns, either woven (brocaded) or embroidered on a ground fabric, or on braids used to decorate items of the abbot's vestments such as stole, maniple, or the orphrey of a chasuble.[4] Owing to the disturbance of the tomb in the seventeenth century, there is no record of the position of the gold, and it is impossible to reassemble such broken-up fragments. In less disturbed burials braids often retain their shape even when the fibre threads have disappeared, and in a few scraps here the gold threads lie side by side in two or three folds over a width of 8–9 mm; but the pressure-marks left by the warp threads of gold-brocaded braids, and the embroidery threads holding down the laid gold threads of surface couching are very similar.

The famous *opus anglicanum*, with gold backgrounds couched in geometric patterns, appears from the twelfth century onwards, but in this technique the embroidery thread does not show on the surface, but is used to pull a tiny loop of the laid gold thread through the background fabric; surviving gold threads are left with a distinctive series of loops, instead of simply the indentation left by the thread in surface couching. If, then, these threads come from embroidery, the technique would be the same as in the most famous of early English vestments, the stole and maniple made by Queen Ælfflæd given to the shrine of St Cuthbert at Durham in the tenth century, where the silk-embroidered saints have haloes of spun-gold threads, couched in bricked, zigzag, and trellis patterns with visible red silk threads.[5]

The spun-gold threads from Abbot Warin's grave are, however, extremely fine, far finer than those used in the Durham embroideries. It is easier to pass a fine brocading weft through the warp ends, and beat it close to the previous thread, than to lay it on the surface of a fabric and sew it down by hand. One well-known early use of gold brocading is on tablet-woven silk braids, and the only gold threads of comparable fineness of this period are from two such braids from Winchester, usually described as from the tomb of William Rufus, but perhaps more likely to have belonged to Bishop Henry of Blois, buried in the cathedral in 1171.[6] This braid-weaving technique has a long history in England, from examples brocaded with flat strips of beaten gold in Anglo-Saxon graves, probably royal, of the sixth–seventh centuries,[7] through the remains from secular and ecclesiastical burials of the ninth–tenth

[1] We are grateful to Frances Pritchard for kindly reviewing and where necessary updating the terminology used in Elisabeth Crowfoot's report.
[2] See above, pp. 364–7.
[3] Plenderleith 1956.
[4] Extensive lists of the abbey's vestments (including those dating from the twelfth century) survive in Matthew Paris' and Thomas Walsingham's compilations.
[5] Plenderleith 1956, Fig. 4, Pl. XXVIII.
[6] Crowfoot 1990, Cat. Nos 1072, 1075. The gold in these two braids has the highest percentage (91%) of any tested from Winchester and Durham.
[7] Crowfoot and Hawkes 1967.

centuries,[8] including the wide braids, the 'girdle' and 'wrist-bands', and narrow ones edging the stole and maniple at Durham,[9] to many later medieval examples from ecclesiastical sources.

It seems perhaps most probable that these threads are all that remains of a fine silk braid with a gold-brocaded pattern 8–9 mm wide, used to decorate the edge of one of Abbot Warin's vestments.

[8] Crowfoot 1990, Cat. Nos 1031–8, 1069–76.
[9] Crowfoot 1956.

PART 5

5. IVORY CROZIER OF ABBOT WARIN OF CAMBRIDGE

by PAUL WILLIAMSON

RF 103 (Fragment B) and *RF 104* (Fragment C), both from Trench 1, Layer 185; *RF 741* (Fragment A), *RF 742* (Fragment D) and *RF 2414* (miscellaneous small fragments), from Trench 1, Layer 272. All the ivory comes from Final phase 35, *c*.1725–*c*.1750 (P.ph. 65), the robbing of G. 12, the burial of Warin of Cambridge, abbot 1183–95. For the grave and the other finds from its robbing, see above,[1] and for possible ferrule of the crozier, see below.[2]

Parts of the volute of a crozier

These fragments (B–D) almost certainly originally formed part of the volute of a crozier. Existing twelfth-century croziers show that the volute could have been carved in one, as a single, unbroken crook, but several examples were constructed with two or more joined sections, dowelled or glued together.[3] The most significant fragment is B: this not only has a curved, worked, and facetted lower surface, clearly indicating the shape of the inner face of the volute, but has a rounded groove at one end. The latter served as a constructional aid, so that the adjoining curved section of the volute could be fitted and glued firmly to it. The slight protuberance on the inner face of Fragment D may be the remains of part of the decorative scheme at the centre of the volute, which could have consisted of foliate sprays, an *Agnus Dei* or other animals, as reconstructed in the accompanying drawing, although this must remain conjecture (Illus. 5.5.1).[4]

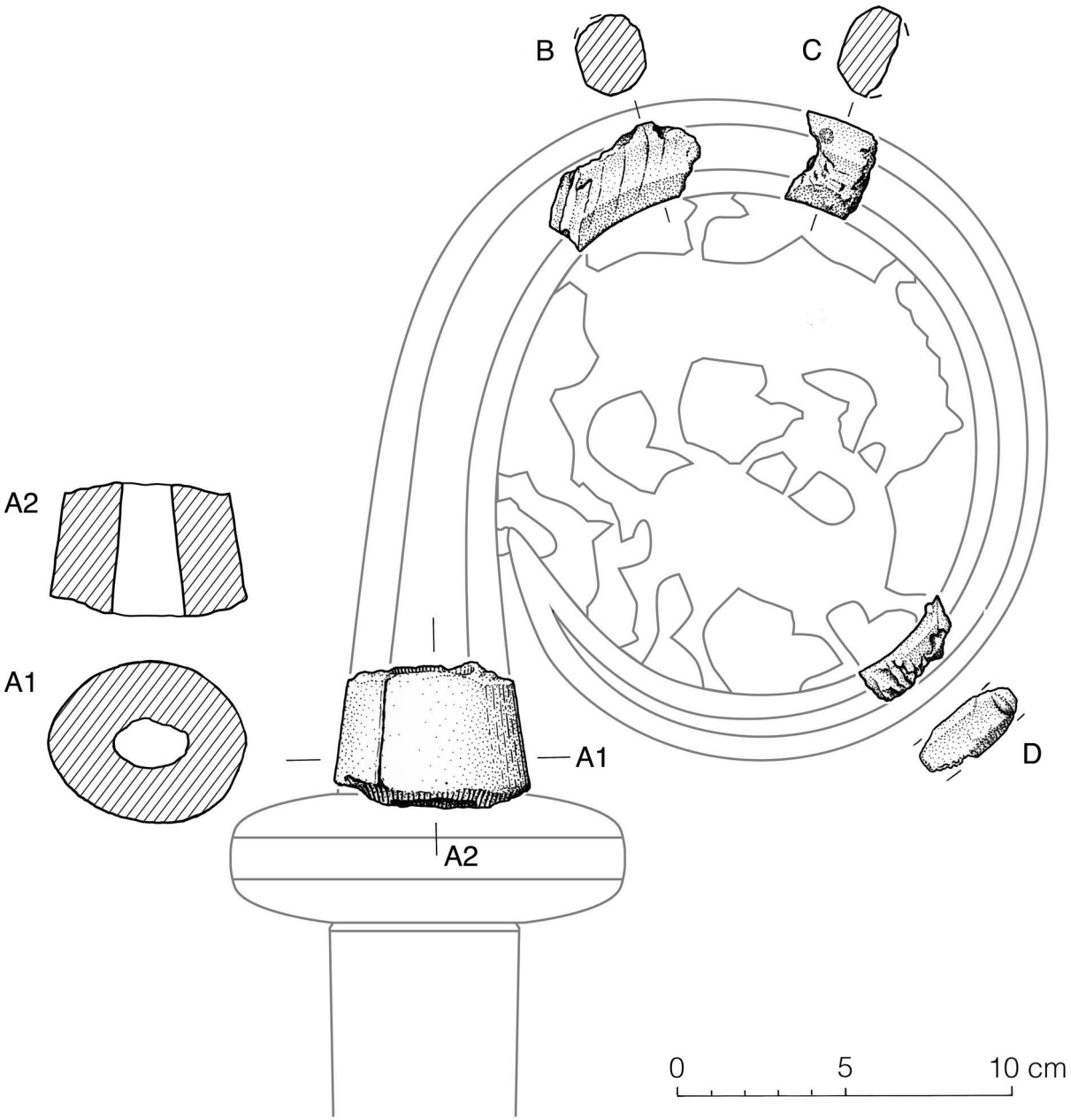
Large cylindrical piece of ivory

The cylindrical shape and size of this chunk of ivory (Fragment A, identified as 'probably walrus ivory' by The Natural History Museum, London, in 1980) might allow the suggestion that it formed the knop separating the stem of the volute from the shaft of the crozier (Illus. 5.5.1). The problem is that the piece has laminated, rather like an onion, to the extent that it is impossible to be sure that the existing outer profile reflects it original shape. The drawing shows the piece in its present state, oval (A1) and tapering upwards with slightly concave sides (A2). The upper face appears to be broken, while the lower appears to have a finished surface and to be convex. As drawn here this would allow an alternative interpretation of the chunk as the bottom of the volute of the crozier (cf. Illus. 5.5.2), at the point where it fitted into a concavity on the top of the knop, the shaft, knop, and volute held together by a long, probably wooden dowel passing through the central hole. But certainty is impossible, given the condition of the piece.

Ivory croziers, the pastoral staves required for all abbots and bishops in the twelfth and thirteenth centuries, are on occasion mentioned in English inventories. In the 1245 and 1295 inventories of St Paul's Cathedral in London, for instance, there are references to *Baculi duo, quorum cambucae sunt de ebore, et pomellum* ('two pastoral staves, whose crooks are of ivory, and the knop'), and to a *Baculus cum cambuca eburnea, continente agnum* ('a staff with an ivory crook containing a lamb').[5] The popularity of the Lamb of God as the central feature of a crozier is further evidenced by a reference in the inventory of the vestry of Westminster Abbey, taken in 1388, where a description of the ivory *Agnus Dei* crozier follows that of one of gilded copper with images of the Church and Synagogue: *Baculi quoque pastorales sunt duo quorum unus de cupro deaurato continens in curvitate ex utraque parte ymaginem ecclesie sancte et sinagoge alter eburneus continens in curvitate agnum dei* ('There are also two pastoral staves, one of gilded copper has within its curve on both sides an image of Holy Church and Synagogue, the other of ivory with the Lamb of God within its curve').[6]

More significantly in the present connection, ivory croziers have been found in the coffins of two distinguished prelates: that of Abbot Alexander (d.1226) in Peterborough Cathedral, now in the British

[1] See above, pp. 364–7.
[2] See below, p. 437, no. 20 and Illus. 5.10.2.
[3] For a sample of mostly Italian examples, see Cott 1939, Pls 60–4.
[4] This is based on the late twelfth-century crozier in Vannes Cathedral, for which see Cott 1939, Cat. no. 163, Pl. 63, and Gaborit-Chopin 1978, Fig. 186.
[5] Sparrow Simpson 1887, 472; Dugdale 1818, 316; see also Williamson 1994, 190–1, 194.
[6] Wickham Legg 1890, 275.



Illus. 5.5.1. The ivory crozier: fragments in a reconstruction.

Museum, which has a foliate centre; and the walrus ivory example that belonged to Archbishop Walter de Gray (d.1255), in York Minster, which also has a foliate design.[7] Although now reduced to a small number of indistinct fragments, Abbot Warin's crozier may once have been of comparable type to these or those mentioned in the inventories, even if its exact design remains unclear.

[7] Dalton 1909, Cat. no. 247, Pl. LXX; for Walter de Gray's crozier see Ramm *et al.* 1971, 108, 125, Pls XLVII–LII.



Illus. 5.5.2. Ivory crozier head, twelfth-century, with later metal additions (1:2) Ashmolean Museum, Oxford, Acc. No. AN1685A.600.

PART 5

6. PEWTER CHALICE FROM THE GRAVE OF ROBERT OF THE CHAMBER (d.1154 x 1160)

by PETER NORTHOVER *and* MARTIN BIDDLE

RF 281. Pewter chalice from Final phase 17, 1154/9–66 (P.ph. 17A), G.23, the grave of Robert of the Chamber (d.1154 x 1160), the father of Nicholas Breakspear, Pope Adrian IV (d.1159). For the grave, see above.[1]

The chalice survived only as an area of blue-grey powder and tiny fragments lying on the right side of the chest of the skeleton (see Illus. 4.2.1). The area of débris measured approximately 140 mm from south to north and 120 mm across, and was just sufficiently defined to suggest that the base of the chalice lay against the inside of the upper right arm with its mouth almost touching the spine (see Illus. 4.2.1). On excavation traces of the stem were recorded as preserving some of its form: the one surviving fragment, possibly from near the base, suggests a diameter of about 80 mm, well within the normal range of variation.[2] Other fragments hint at curvature, but all other form is lost.

Chalices of various materials, sometimes accompanied by a paten, are found in graves known to be those of priests;[3] graves with chalices but not otherwise identified are also assumed to be those of priests.[4] The earliest pewter chalices found at Winchester came from graves assigned to the late thirteenth or early fourteenth century,[5] but written sources show that pewter chalices were in regular use before then, and were permitted by Anglo-Saxon practice.[6] The chalice in the grave of Robert of the Chamber, who can be presumed from his burial in the chapter house to have died after the election of his son as pope in 1159 but probably before about 1160, appears to be one of the earliest pewter chalices yet known.[7]

[1] See above, pp. 343.

[2] Biddle and Kjølbye-Biddle 1990b, 793–9, Figs 231–3.

[3] Oman 1990.

[4] Biddle and Kjølbye-Biddle 1990b, 791–3. A chalice with simple moulding and a round stem was excavated on the site of the Dominican Priory in Oxford, see Lambrick and Woods 1976, 217,

[5] ibid., 794, nos 2453–5.

[6] Oman 1990, 789–90.

[7] I suspect pewter chalices were skeuomorphic, that is, placed in a grave instead of real silver chalices, in the same way that often metal rings rather than gold rings were buried. Martin Henig, pers. comm..

PART 5

7. GILT COPPER-ALLOY DISC PROBABLY FROM A BROOCH

by STEVEN ASHLEY *and* PETER NORTHOVER

Discovery and context

RF 2351: Diam. 32 mm; Th. 5 mm. Unstratified, from the backfill of the contractor's trial pit in his area E–F/3–6, between ditch F. 500/501 to the west and ditch F. 571 to the east, defined by *c*.205/500–502.5 to the west and 212.50/500–502.5 to the east. This area was fully excavated in 1978, revealing the pre-chapter house cemetery shown on Illus. 2.2.4, but the brooch might have come from an unexcavated portion of one of the graves of Final phase 6–9 (*c*.1000–77), or possibly from the pre-chapter house soils of Final phase 5 (*c*.800?–*c*.1000).[1]

Description and discussion by Steven Ashley

Late Saxon gilt copper-alloy disc-brooch, with cast counter-relief decoration on the front face comprising a central quatrefoil within a concave-sided lozenge from each of the four corners of which spring two outward-turning spirals forming an elaborate cross. There is a small triangle at the outer end of two of the four arms. The triangles on the other two arms are obscured by two of three secondary dome-headed iron rivets in a line. The third rivet pierces the central quatrefoil. There are multiple notches around the outer edge of the disc. An 8 mm wide band of discolouration on the flat reverse of the disc corresponds with the line of rivets and indicates the position of a missing arrangement for attachment, probably originally comprising a strip *c*.6 mm wide with integral pin and catch-plate such as can be seen on a ninth-century brooch from Beeston Tor.[2]

The object is small, and the size and decorative motif is broadly similar to that found on escutcheons from hanging bowls of the seventh or eighth centuries; see for example plates from Morden, Surrey, and Lighthorne, Warwickshire.[3] But discoidal escutcheon plates are more often than not set within frames, which in the case of this object would have rendered the notched decoration on the outer edge unnecessary. Other factors against the identification of this disc as an escutcheon plate include both its flatness and the lack of enamelling. On the other hand, if the rivets are secondary, it is not impossible that the object has been reused either from a disc from a hanging bowl, or even from the head of a disc-headed pin. However, the separately riveted fixings are absolutely characteristic of late Anglo-Saxon brooches such as that seen on a silver and niello example from Beeston Tor, Staffordshire,[4] a gilt copper-alloy find from Ixworth, Suffolk,[5] a tinned copper-alloy item from Evington Brook, Leicester,[6] silver gilt and niello brooches from the Pentney hoard,[7] and on a fragmentary silver and niello brooch from Elmsett, Suffolk,[8] all of which belong to the eighth or ninth centuries. Others can be found on the database of the Portable Antiquities Scheme.[9] All of these have cross-shaped or cross-derived decoration, but none is an exact parallel for the much smaller St Albans brooch, the size and decoration of which are closer to two small unpublished probably tenth-century brooches from Norfolk.[10]

Analysis by Peter Northover

As this object could be accommodated whole in the electron probe micro-analyser a small area of the surface was cleaned mechanically and analysed quantitatively. Four 50μ square areas were examined.

[1] The brooch was previously illustrated in Biddle and Kjølbye-Biddle 1980, Fig. 15, and in Biddle and Kjølbye-Biddle 2001, Fig. 14b.

[2] Webster and Backhouse 1991, no. 245(a), BM 1925,0114.1; Wilson 1964, 120, Fig. 9.

[3] Bruce-Mitford 2005, Corpus nos 20 and 94.

[4] Webster and Backhouse, no. 245(a), BM 1925,0114.1; Wilson 1964, no. 2.

[5] BM 1927,1212.23; Wilson 1964, no. 25.

[6] Ashmolean Museum; Webster and Backhouse 1991, no. 186.

[7] Webster and Backhouse 1991, no. 187; BM 1980,1008.1–6.

[8] Private Collection; West 1998, Fig. 24, 6.

[9] Portable Antiquities Scheme (PAS) website (http://www.finds.org) numbers: DENO-EF72B3, LIN-833322, LIN-9B7487, NARC-E11208, NCL-771FB5, NLIN-01DE95, SF-B07BB0, WMID-054B67.

[10] From Postwick (Norfolk Historic Environment Record 31087) and Sutton (HER 51664, NMS-908E97), both with integral pin-lug and catch-plate.



Illus. 5.7.1. Gilt copper-alloy disc brooch (2:1).



Illus. 5.7.2. Gilt copper-alloy disc brooch (2:1).

All showed a substantial, but variable, concentration of gold ranging from 1.9% to 35%. This would suggest that the surface had originally been gilded; the area with as little as 1.9% gold would suggest that the alloy of the basic brooch did not contain gold. The brooch alloy contained low levels of tin, zinc, and lead, that of lead being just within the limits to permit successful mercury gilding. Assuming that all the copper detected came from the brooch and that the gilding metal was free of copper the probable alloy content of the brooch is: 3.6% Sn, 0.7% Zn, 1.5% Pb.

This is typical of many alloys from Anglo-Saxon times onwards. The segregation recorded during analysis would indicate that the metal was essentially in the as-cast state. There were also Ni, Bi, Sb impurities; As was not sought in this analysis because of interference from lead. All analyses showed around 1% silver; it is probable that much of this derives from the gilding metal which would then contain around 4–6% silver although the copper alloy could well have had a silver impurity. No attempt was made to ascertain the nature of the gilding process.

PART 5

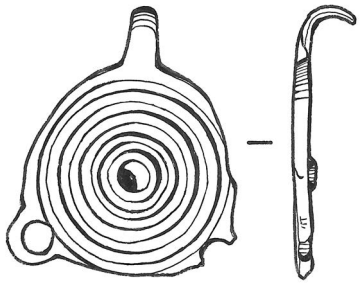
8. COPPER-ALLOY HOOKED FASTENER

by MARTIN BIDDLE *and* BIRTHE KJØLBYE-BIDDLE

This copper-alloy hooked fastener or tag (*RF 284*) from Final phase 8, *c.*1000–77 (P.ph. 6) was found below the right pelvis of G. 36 in the monastic cemetery sealed beneath the floor of the eleventh-century chapter house.

RF 284 has a circular plate with two small projecting attachment holes, one of which is broken partly away. It is decorated with deeply incised concentric circles around a central depression which has been pushed in so far as to create a boss on the otherwise flat back. The hook is quite sharp, though its extreme end may be broken. Hooked fasteners or tags are common seventh- to eleventh-century objects.[1] They have a variety of shapes of plate, often incised with ring-and-dot, but although circular plates are less common than triangular ones, there is as yet no criterion for dating tags either by shape or ornament.[2]

A pair of large triangular hooked tags of silver found at the knees of Anglo-Saxon grave 67 (mid to late 9th cent.) in the Old Minster at Winchester had presumably been used as garter hooks,[3] but a high medieval example in Medieval grave 155, also triangular, was found at the neck.[4] The hooked tag from St Albans, found below the right hip might have come from the right wrist, the bones of which lay immediately above. Like the hooked tags found with a hoard of Anglo-Saxon coins at Rome, this St Albans tag might have closed a purse or other container of textile or leather.[5]



Illus. 5.8.1. Copper-alloy hooked fastener (2:1).

[1] Dickinson 1973; Hinton 1990.
[2] For a close parallel from Winchester, see Hinton 1990, 552 (1424), Fig. 149.
[3] ibid., 549 (1407), Fig. 148, Pl.XLV*a*.
[4] ibid., 549 (1420), Fig, 148.
[5] Graham-Campbell 1991, 222–5.

PART 5

9. OBJECTS OF COPPER ALLOY AND GOLD

by MARTIN BIDDLE[1]

Of the 56 objects of non-ferrous metal listed here, two (nos 5–6) came from Anglo-Saxon contexts predating the chapter house. Six (nos 1 and 7–11) came from medieval contexts. The remaining 48 came from dissolution (nos 12–15), and later deposits (nos 2–4 and 16–56), but in some cases are residual, dating typologically to the period of use of the chapter house.

The presence of the four book clasps (Illus. 5.9.1) is significant in view of the monastic context (nos 1–4). The finding of No. 1, together with leather strips, in the grave of Adam the Cellarer (G. 11) suggests that he was buried with a book.

Articles of dress, which would form a large proportion of the finds on a secular site, are hardly represented. The 21 buttons (nos 36–56), all from post-medieval contexts, are treated separately below.

(Objects illustrated are asterisked *)

Book clasps (in Final Phase order) (Illus. 5.9.1)

1. * Book clasp. Looped and decorated with traced lines. Some leather remains between the plates. A fragment of leather thong in the copper-alloy loop which passes through all thicknesses of the metal would have been used to hold the book closed. Final phase 20, 1166–83 (P.ph. 26): *RF 250*, from G. 11 (Adam the Cellarer, d.1167 x 1176). Also in the grave were leather straps *RF 257*, *259*, *262*, and *275–6*.[2]
2. * Book clasp. W: 8 mm, with a splayed and notched end and two holes (one with surviving pin). A more common type than nos 1 or 3. A complete example from Basing House, Hants, may date from before *c.*1531.[3] Final phase 36, *c.*1750–*c.*1775 (P.ph. 634): *RF 1968.*
3. * Book clasp. Looped, with a trefoil-shaped opening in the upper plate. A similar, but larger, clasp was found in a fifteenth-century context in Church Street, St Ebbes, Oxford. The same shaping occurs on a strap-end from fifteenth- to sixteenth-century levels at East Haddlesey, West Yorks.,[4] and on a buckle plate dated to the sixteenth century from Chelmsford (Essex).[5] Final phase 37B, 1800–50 (P.ph. 721): *RF 1299.*
4. * Book clasp. Similar in form to No. 2, but with repoussé decoration. A comparable but undated clasp comes from Exeter.[6] Final phase 45–6, 1970–82 (P.ph. 734): *RF 18*.

Objects other than book clasps, the thin sheet white metal flask, and buttons (in Final Phase order) (Illus. 5.9.2)

5. Sheet Fragment. Folded and ?featureless. Final phase 3, *c.*400?–*c.*800? (P.ph. 123a): *RF 2311*, from F. 579.
6. Strip, bent through a right angle. Featureless. Final phase 4, *c.*800?–*c.*1000 (P.ph. 123b): *RF 985*, from F. 543.
7. Tapered cutting. Featureless. L: 38 mm. Final phase 18, 1154/9–66 (P.ph. 170): *RF 666*, from F. 444.
8. Strip with peg-like projection at one end and notched decoration, probably part of a Late Roman bracelet of Lankhills Type D1, mid-late 4th cent.[7] L: 15 mm. Final phase 27, 1396–1402 (P.ph. 52): *RF 230*, from G. 13 (Abbot John de la Moot).
9. Headless nail. L: 13 mm. Final phase 27, 1396–1402 (P.ph. 52): *RF 232*, from G. 13 (Abbot John de la Moot, d.1402).
10. Thin rectangular plate. No attachment holes. ?Gilt. L: 64 mm. W: 25–26 mm. Th. <0.5 mm. Final phase 28, 1402–*c.*1450 (P.ph. 543): *RF 581*.

[1] Alison Goodall's MS draft list with sketch drawings of the objects is in the Project Archive at the St Albans Museum, as are the finds themselves. Only those objects of intrinsic interest have been included here: a further twenty-seven objects, consisting of fragments, strips, rings, etc., are listed in the MS report. Other copper-alloy and non-ferrous metal objects published in this volume (apart from coins, tokens, and a lead bulla) are: a gold ring, gold thread, a copper-alloy disc-brooch, and a copper-alloy hooked tag (see above, pp. 422, 423, 429–30, and 431), and lead objects (see below, pp. 439–40).

[2] See above, pp. 362–4.

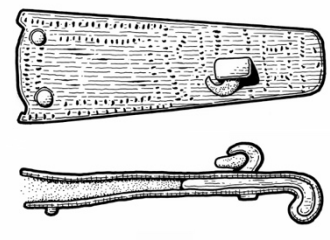
[3] Moorhouse 1971, 59, Fig. 25.162.

[4] Goodall 1973, 93, Fig. 37.1.

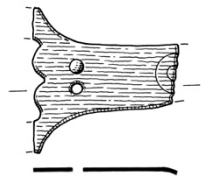
[5] Drury 1974, 56, Fig. 7.8.

[6] Goodall 1984, 341, Fig. 191.143.

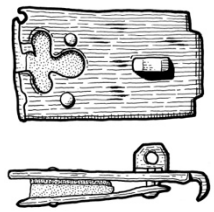
[7] Clarke 1979, 304–6, Fig. 37.



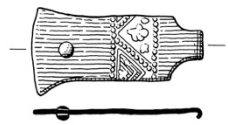
1 (*RF 250*)



2 (*RF 1968*)



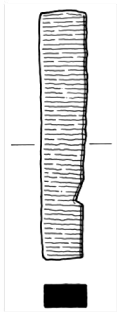
3 (*RF 1299*)



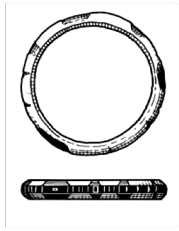
4 (*RF 18*)

Illus. 5.9.1. Book clasps (1:1).

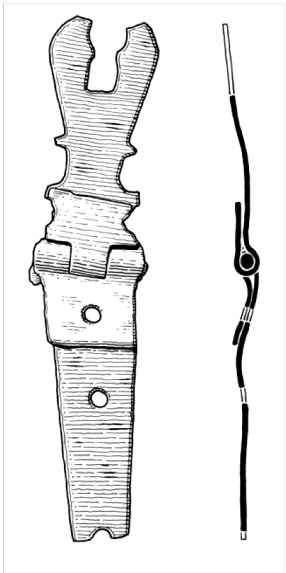
11. Thin plate with seven rough attachment holes. A repair plate? Th: <0.5 mm. Final phase 30, *c.*1500–39 (P.ph. 550): *RF 531*, from F. 328.
12. Sewing pin with stamped head of coiled wire. L: 18 mm (broken off towards point). Final phase 31, 1539–*c.*1550 (P.ph. 56): *RF 138*, from F. 338.
13. * Solid, ?cast, rectangular-sectioned ?peg with notch in one side. L: 32 mm. W: tapers 5–6 mm. Th: 4 mm. Final phase 31, 1539–*c.*1550 (P.ph. 229): *RF 916*.
14. Final phase 31, 1539–*c.*1550 (P.ph. 248): *RF 613*, from F. 250.
15. Thin strip. W: 7 to 5 mm. Th: 1 mm. Final phase 31, 1539–*c.*1550 (P.ph. 564): *RF 564*.
16. Narrow D-sectioned strip with white metal plating. L: 42 mm. W: 2 mm. Final phase 32, *c.*1550–1600 (P.ph. 233): *RF 1812*.
17. Broken fragments of thin strip, W: 10 mm, with two piercings and remains of iron 'nail'. Final phase 32, *c.*1550–1600 (P.ph. 566): *RF 1851*, from W. 14.
18. Rolled out rim of a sheet metal vessel. L: 84 mm. Final phase 35–6, *c.*1725–*c.*1775 (P.ph. 288): *RF 1935*.
19. * Finger ring. Ext. D: 19 mm. Int. D: 16 mm. W: 3 mm. White metal or silver foil wrapped round the ring to form a pattern of alternating white and copper metal on the rounded outer face. Rough incisions on the outer edge. Final phase 36, *c.*1750–*c.*1775 (P.ph. 634): *RF 1873.*
20. * Hasp with ornamental shaping, probably from a casket. The arms folding on an iron pin, the ornamental arm with a broken ?keyhole. Date uncertain. Final phase 36–7B, *c.*1750–1850 (P.ph. 717): *RF 1751*.
21. * Scissors. Moulded and rosette-stamped arm and finger-loop (*c.*18 by 15 mm) from a small pair of scissors. Final phase 37A, *c.*1775–1800 (P.ph. 605): *RF 1330*.
22. Thirteen interlocking wire rings with their ends overlapped and riveted; possibly mail. Final phase 37A, *c.*1775–1800 (P.ph. 605): *RF 1565*.
23. Fragment of small decorated and gilded pendant or watch key. Final phase 37B, 1800–50 (P.ph. 315): *RF 1114*.
24. Child's thimble with tapering sides and criss-cross arrangement of pits on the top. Final phase 37B, 1800–50 (P.ph. 346): *RF 1583*.
25. Shoe-buckle frame with remains of iron pin bar. Final phase 37B, 1800–50 (P.ph. 351): *RF 1481*.
26. * Ornamental stud, possibly with an indistinct heraldic design and white metal plating. There are two pin holes at the top and a shank at the back. Final phase 37B, 1800–50 (P.ph. 607): *RF 1332*.



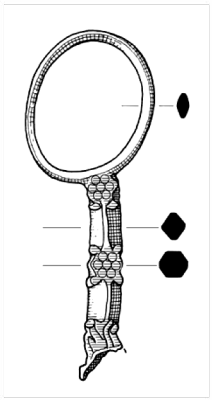
13 (*RF 916*)



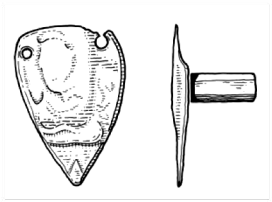
19 (*RF 1873*)



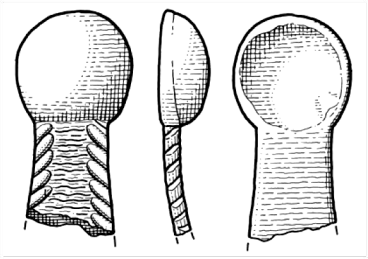
20 (*RF 1751*)



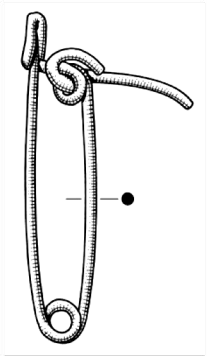
21 (*RF 1330*)



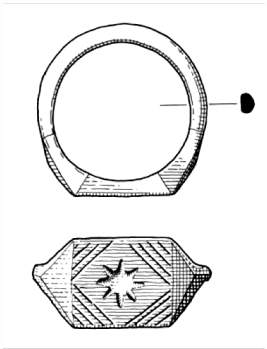
26 (*RF 1332*)



31 (*RF 60*)



32 (*RF 589*)



34 (*RF 911*)

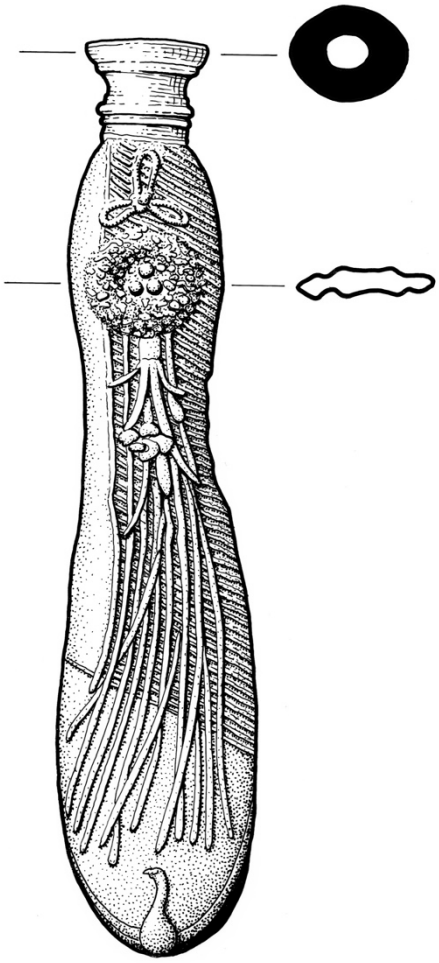
Illus. 5.9.2. Copper-alloy objects 13, 19–21, 26, 31–2, and 34 (1:1).

27. Moulded drop handle from a drawer or casket. Final phase 37B, 1800–50 (P.ph. 723): *RF 1676*.
28. Length of fine, flat, ?gold chain, probably from a necklace. Modern. Final phase 38, 1850–80 (P.ph. 619): *RF 1225*.
29. Rectangular double-looped buckle frame of uncertain date. Final phase 38, 1850–80 (P.ph. 725): *RF 19*.
30. Child's thimble with tapering sides and criss-cross arrangement of pits on the top. Final phase 38, 1850–80 (P.ph. 725): *RF 54*.
31. * Decorative fragment. Final phase 41, 1920–37 (P.ph. 727): *RF 60*.
32. * Wire 'safety' pin with another loop of wire attached. Roman? Final phase 42, 1937–40 (P.ph. 97): *RF 589*.
33. Cane cap decorated with a gun and carriage with a crown over it and the motto below: 'QUO FAS ET GLORIA [DUCUNT]'; from an artillery officer's swagger stick. Final phase 43, 1940–60 (P.ph. 440): *RF 1034*.
34. * Finger ring. Large with triangular shoulders and a rectangular bezel engraved with a star: with gold and white metal plating. Medieval. Unstratified: *RF 911*.

Flask of thin sheet white metal, probably pewter (Illus. 5.9.3)

35. * Flask of thin sheet white metal, probably pewter with elaborate repoussé decoration of a ?phoenix, wreaths, with a spray, and a three-lobed knot. The cap, of a harder white metal with a central hole, is unlikely to be earlier than *c*.1840. It may have contained oil, ointment, perfume, or powder, but probably not gunpowder. Final phase 42, 1937–40 (P.ph. 418): *RF 1007*.

35 (*RF 1007*)



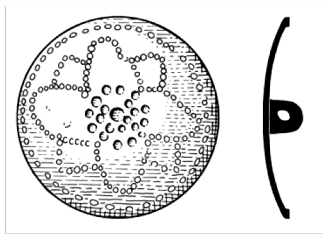
Illus. 5.9.3. Flask of thin sheet white metal, probably pewter (1:1).

Buttons (in Final Phase order) (Illus. 5.9.4)

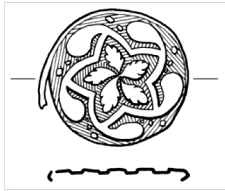
The 21 buttons are treated as a separate category. They come from post-medieval contexts, Final phases 37A (*c*.1775–1800) to 44 (1960–70), and include none of certain medieval type.[8] They are nevertheless useful, like the post-medieval coins and ceramics, in dating the complex succession of robbing and later disturbance to which the chapter house and its site were subject.

36. Domed button with wire loop, 12 mm diameter. Final phase 37A, *c*.1775–1800 (P.ph. 605): *RF 1505*.
37. Composite button with decorated metal cap over bone back, 16 mm diameter. Final phase 37A, *c*.1775–1800 (P.ph. 605): *RF 1510*.
38. Hollow, globular, button with wire loop, 10 mm diameter. Final phase 37A, *c*.1775–1800 (P.ph. 721): *RF 72*.
39. Flat-topped plain silvered button, wire loop missing, 17 mm diameter. Final phase 36–7B, *c*.1750–1850 (P.ph. 67): *RF 1571*.
40. Slightly domed ?button or pin-head, loop or pin missing, 11 mm diameter. Final phase 37B, 1800–50 (P.ph. 315): *RF 1109*.
41. Large flat-topped button of white metal with copper-alloy loop, 31 mm diameter. Final phase 37B, 1800–50 (P.ph. 315): *RF 1462*.
42. * Slightly domed cast button with crudely executed punched dots and rings and a pierced shank, 26 mm diameter. Final phase 37B, 1800–50 (P.ph. 721): *RF 77*.

[8] Biddle and Cook 1990.



42 (*RF 77*)



47 (*RF 75*)



53 (*RF 1209*)

Illus. 5.9.4. Buttons 42, 47, and 53 (1:1).

43. Slightly domed plain button with wire loop, 14 mm diameter. Final phase 37B, 1800–50 (P.ph. 728): *RF 1213*.
44. Flat-topped gilt button. Inscription on back: 'TREBLE GILT', 21 mm diameter. Final phase 38, 1850–80 (P.ph. 725): *RF 53*.
45. Flat button cap, undecorated. ?Gilt. 26 mm diameter. Final phase 38, 1800–50 (P.ph. 725): *RF 65*.
46. Composite button with a thin metal cap fitting over a back of the same metal, the front stamped with the Royal Arms and supporters and the back with 'J.R. GAUNT & SON LTD. LONDON', 17 mm diameter. Final phase 38–9, 1850–1900 (P. ph. 643): *RF 1222*.
47. * Button cap with impressed pattern with star and leaves against hatched background, gilt, 19 mm diameter. Final phase 38–40, 1850–1920 (P.ph. 726): *RF 75*.
48. Button, the edges rolled over, 19 mm diameter. Final phase 41, 1920–37 (P.ph. 660): *RF 1017*.
49. Domed ?button, loop or ?pin missing, 12 mm diameter. Final phase 41, 1920–37 (P.ph. 660): *RF 1053*.
50. Button cap with impressed knot pattern, gilt, 22 mm diameter. Final phase 41, 1920–37 (P.ph. 727): *RF 1215*.
51. Flat-topped white metal button with ?iron loop, 17 mm diameter. Final phase 41, 1920–37 (P.ph. 727): *RF 1602*.
52. Flat-topped button with wire loop, gilt. Inscription on back: 'TREBLE GILDED STANDARD...', 20 mm diameter. Final phase 41–2, 1920–40 (P.ph. 661): *RF 3*.
53. * Flat-topped ?button or stud with copper-alloy ?rivet ?integral on back, 14.5 mm diameter. Final phase 42, 1937–40 (P. ph. 664): *RF 1209*.
54. Flat-topped plain button, wire loop. Inscription on back: 'GILT' with royal crown between stars, flanked by dots, with a finely dotted outer circle. 23 mm diameter. Final phase 43, 1940–60 (P.ph. 731): *RF 1041*.
55. Domed button with ?stone inset and wire loop, 12 mm diameter. Cf. 40 and 49. Final phase 44, 1960–70 (P.ph. 672): *RF 1164*.
56. Flat metal button with rolled edges, and two stitch holes, 20 mm diameter. Unstratified: *RF 557*.

PART 5

10. IRONWORK

by MARTIN BIDDLE[1]

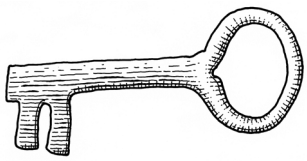
Of the 42 iron objects listed here, six (nos 1–6) came from Anglo-Saxon contexts pre-dating the chapter house and nine (nos 7–15) from later medieval contexts. The remaining 27 came from Dissolution (nos 16–17) and later deposits (nos 18–42), but will in some cases be residual (e.g. no. 20), dating typologically or on other grounds to the period of use of the chapter house.

(The seven objects illustrated are asterisked *)

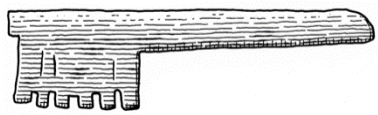
1. Lock plate without mechanism (*RF 217*) and binding (*RF 317*), from Final phase 3, *c.*400?–*c.*800? (P.ph. 123a).
2. Part of a bit (*RF 909*), from Final phase 4, *c.*800?–*c.*1000 (P.ph. 123b).
3. Part of a ?hasp (*RF* 908), from Final phase 8, *c.*1000–77 (P.ph. 132).
4. Hobnail (*RF* 2407), from G. 3, Final phase 9, *c.*1000–77 (P.ph. 133).
5. Flat rove (*RF* 840), from Final phase 2–10, pre-*c.*400?–1077 (P.ph. 3).
6. U-staple (*RF* 822), from F. 502, Final phase 10, *c.*1000–77 (P.ph. 8).
7. Tool with iron collar, broken (*RF 216*), from G. 9, Final phase 13, 1093–*c.*1110 (P.ph. 150).
8. Riveted strip (*RF 714*), from F. 401, Final phase 15, 1151–4/9 (P.ph. 482).
9. Hinge pivot (*RF 814*), from Final phase 27, 1396–1402 (P.ph. 201).
10. * Key, oval bow, hollow stem (*RF 689*), from F. 373, Final phase 28, 1402–*c.*1450 (P.ph. 531).
11. * Key with white metal plating (*RF 690*), from F. 373, Final phase 28, 1402–*c.*1450 (P.ph. 531).
12. * Key (*RF 707A*) from F. 373, Final phase 28, 1402–*c.*1450 (P.ph. 531).
13. * Key (*RF 707B*) from F. 373, Final phase 28, 1402–*c.*1450 (P.ph. 531).
14. * Key (*RF 707C*), from F. 373, Final phase 28, 1402–*c.*1450 (P.ph. 531).
15. Knife blade, fragment (*RF 686*), from Final phase 28, 1402–*c.*1450 (P.ph. 543).
16. Scissor loop (*RF 140*), from F. 338, Final phase 31, 1539–*c.*1550 (P.ph. 56).
17. Lock plate (*RF 41*), from F. 338, Final phase 31, 1539–*c.*1550 (P.ph. 224).
18. Knife (*RF 1978*), Final phase 33, 1600–50 (P.ph. 568).
19. Cross-shaped strap (*RF 568*), Final phase 33, 1600–50 (P.ph. 570).
20. * Iron, ?ferrule (*RF* 633), from F. 300, Final phase 35, *c.*1725–*c.*1750 (P.ph. 65). Found in Trench 1, Layer 272, secondary demolition rubble in G. 12, the burial of Abbot Warin of Cambridge (1183–95), and possibly to be identified as the ferrule from the wooden staff of his ivory crozier, fragments of which were found in the same context.[2] Recorded as ?ferrule when found in fragments, badly shattered, and rusted among broken bones in the east end of the broken Purbeck marble coffin (Illus 2.3.4 and 4.4.2) Length of the largest surviving fragment 60 mm, heavy metal but no intelligible form. Length of second largest fragment 48 mm, curved as if approaching the point, with traces of wood grain lying vertically against the inner curve. One small fragment *c.*15 mm across with ?shank of a rectangular section ?pin with adjacent wood grain. This object was not seen by Ian Goodall and appears not to have been X-rayed; sketched and reconstructed on Illus. 5.10.2.
21. Moon-shaped object (*RF 1941*), from Final phase 35, *c.*1725–*c.*1750 (P.ph. 270).
22. Pinned hinge (*RF 781*), from F. 451, from Final phase 35, *c.*1725–*c.*1750 (P.ph. 284).
23. Pinned hinge (*RF 824*), from F. 451, Final phase 35, *c.*1725–*c.*1750 (P.ph. 284).
24. Triangular block of iron (*RF 1949*), from F. 242, Final phase 35, *c.*1725–*c.*1750 (P.ph. 287).
25. Blade (*RF 1643*), from Final phase 36, *c.*1750–*c.*1775 (P.ph. 306).
26. Buckle, fragment (*RF 1740*), from Final phase 37A, *c.*1775–1800 (P.ph. 605).

[1] The late Ian Goodall's MS draft list with sketch drawings of the objects is in the Project Archive at the St Albans Museum, as are the finds themselves. Only those objects of some intrinsic interest have been included here: nails, fragments, lumps, residues, slag, and doubtful objects are omitted. A further 36 objects, consisting of strips, rings, etc., are listed in the MS report.

[2] For the grave, bones, and coffin, see above, pp. 364–7; for the ivory crozier, above, pp. 425–7.



10 (*RF 689*)



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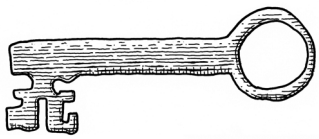
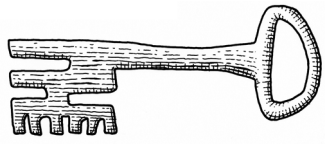
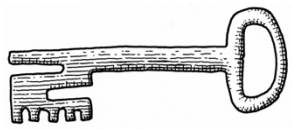


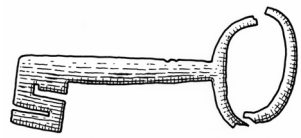
12 (*RF 707A*)



13 (*RF 707B*)



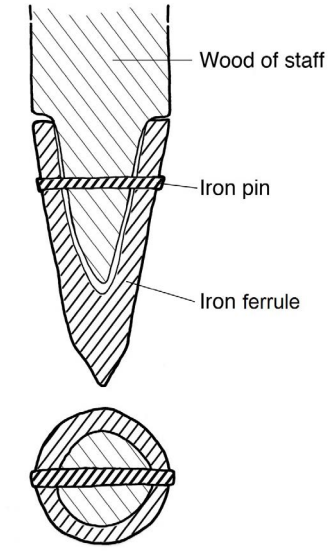
14 (*RF 707C*)



40 (*RF 1705*)

Illus. 5.10.1. Keys (1:2).

27. Sphere, very light (*RF 39*), from Final phase 37B, 1800–50 (P.ph. 351).
28. Rowel spur (*RF 1537*), from Final phase 37B, 1800–50 (P.ph. 607).
29. Horseshoe (*RF 1623*), from Final phase 37B, 1800–50 (P.ph 607).
30. Buckle, rectangular, with pin (*RF 1482*), from Final phase 38, 1850–80 (P.ph. 346).
31. Ferrule (*RF 1534*), from Final phase 38, 1850–80 (P.ph. 374).
32. Penknife (*RF 1440*), from Final phase 38, 1850–80 (P.ph. 382).
33. Gate-post, cast iron (*RF 81*), Final phase 39, 1880–1900 (P.ph. 85). See above, p. $$$.
34. Table fork, two prongs, with whittle tang (*RF 1306*), Final phase 39, 1880–1900 (P.ph. 651).
35. Table knife, bone-handled (*RF 1231*), Final phase 39, 1880–1900 (P.ph. 657).
36. Horseshoe (*RF 1692*), from Final phase 41, 1920–37 (P.ph. 94).
37. Buckle, shoe, post-medieval (*RF 16*), from Final phase 41, 1920–37 (P.ph.727).
38. Knife (*RF 1613*), Final phase 41, 1920–37 (P.ph. 727).
39. Bridle bit, mouth-piece link (*RF 534*), from Final phase 42, 1937–40 (P.ph. 98).
40. * Key, post-medieval (*RF 1705*), from Final phase 42, 1937–40 (P.ph. 100).



Illus. 5.10.2. Iron ferrule (20, p. 437), sketch reconstruction (2:3).

41. Decorated brackets, two, 19th- or 20th- cent. (*RF 934*), from Final phase 43–5, 1940–78 (P.ph. 104).
42. Knife (*RF 929*), from Final phase 46, 1978–82 (P.ph. 112).

PART 5

11. LEAD OBJECTS

by MARTIN BIDDLE *and the late* GEOFF EGAN

Oak-leaf ceiling decoration by Martin Biddle

Triple oak leaves, moulded lead, gilt. Final phase 37B, *c.*1800–50 (P.ph. 721), robbing of W. 20, the S wall of the chapter house: *RF 1801.*

The lead is on average 1 mm thick. The point where the three leaves join is marked at the centre by a small hole which is part of the moulding. Each leaf has a raised central vein flanked by pairs of outward-curving veins, in one case with part of an inner vein between the central and the adjacent curving vein. All three leaves terminate in three lobes, each lobe itself tri-lobed, as in the natural oak leaf. The two lower leaves (as shown in the illustration) are 78 mm in length, measured from the centre, and the upper leaf measures 76 mm, but since the moulding was found folded up, these measurements can only be approximate. The angle between the two lower leaves is 110°, but the angles between the upper leaf and the two lower leaves are 120° (to right) and 130° (to left). Three holes pierce the central area, presumably for small nails, the one nearest the centre is more regular and was perhaps for attaching the moulding to its backing: the two other holes are larger and irregular, possibly for fixing some raised boss over the junction of the leaves.

Moulded and gilded oak leaves of this kind were used to cover junctions between the raised ribs of panelled wooden ceilings of the most expensive kind. The panels could be square or rectangular but the ribs were frequently angled one to another forming complicated patterns. This triple oak-leaf would have been nailed up to cover one such junction, but whether the slightly different angles at which the leaves join are significant seems unlikely. Each of the three angles might be intended to be 120°: this alone indicates a highly complex ceiling.

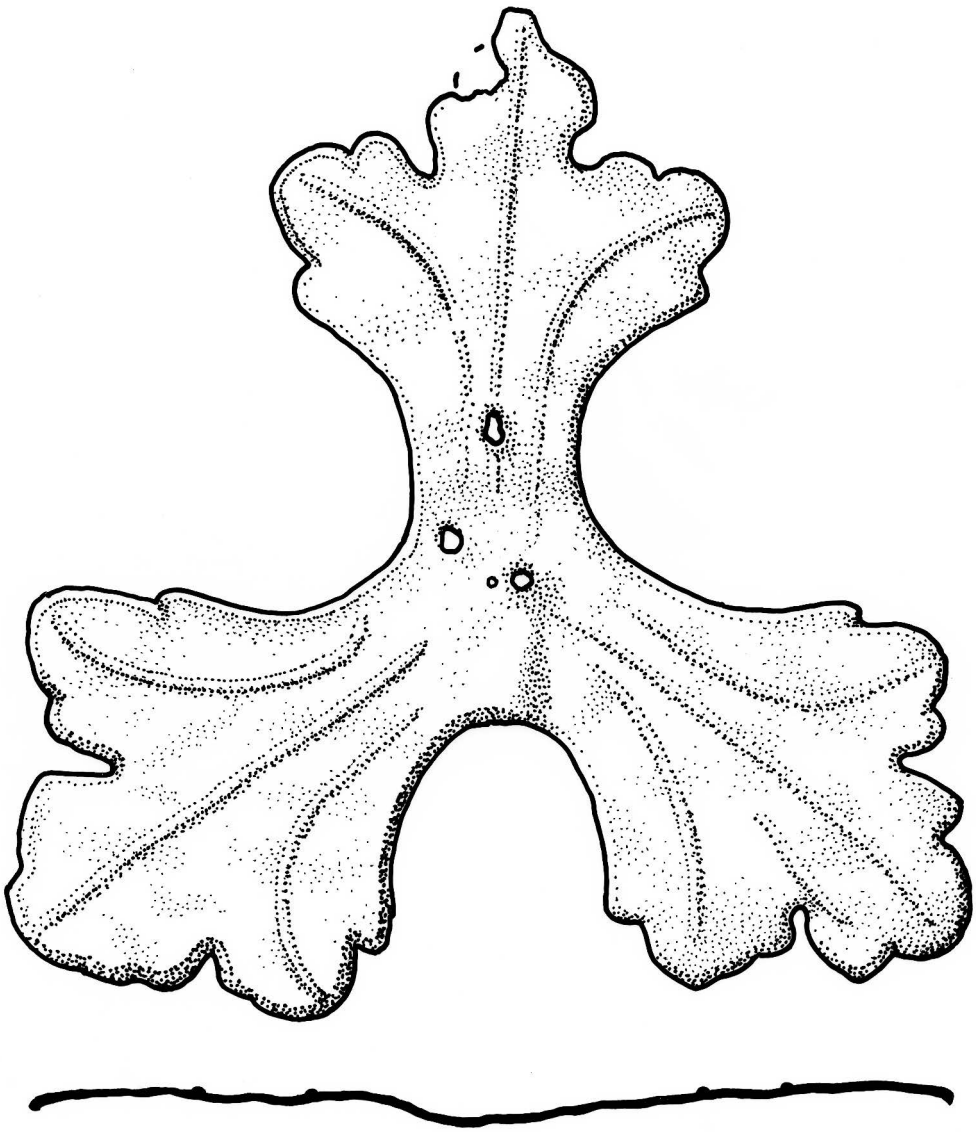
Exactly comparable oak leaves of moulded and gilded lead date to the earlier sixteenth century. Surviving examples at Hampton Court covering the junctions of three ceiling ribs may be the work of Robert Shynck, a German moulder of lead-working there for Henry VIII in the 1530s.[1] Single leaves of the same kind were found at the Manor of the More, only nine miles from St Albans, where Cardinal Wolsey is known to have erected elaborate gilded ceilings in the period 1522–5.[2] Elaborate ceilings like this may have been erected in the previous century, but at St Albans it seems more likely these gilded leaves point to the making at the abbey only shortly before the Dissolution of a panelled ceiling of the highest quality, possibly under the influence of Wolsey who was abbot *in commendam* from 1522–9 and frequently stayed at the abbey. Such a ceiling would have probably been for the decoration of a room elsewhere in the abbey, rather than in the chapter house which was vaulted in stone.[3] The finding of the leaves in an early modern deposit in the robbing of the south wall of the chapter house is significant only in that the leaves were probably among great quantities of lead stripped from the abbey's monastic buildings and brought to the chapter house for melting down during the demolition of the buildings.[4]

Toy watch and discs by Geoff Egan

1. Cast face of a composite toy watch, of poor workmanship. The Roman numerals run only from I to X in anti-clockwise order, and appear in mirror-image. A single hand, pointing to the four, is included in the casting. The reverse appears to have a voided H and I above an indeterminate device. The letters may be the initials of the maker of the mould. Final phase 37A, *c.*1775–1800 (P.ph. 605): *RF 1511.*

Toy watches and watch faces are known from the Thames foreshore in London. One that has been published has been dated to the eighteenth century.[5] Others in the Museum of London and British Museum collections have the full 12 numbers, in the proper sequence; their single hands point to the XII or VI. It seems that in making the mould for the present example, the workman miscalculated the space needed

[1] Thurley 2003, 56 and Figs 48 and 55
[2] Biddle *et al.* 1959, 106, Fig. 20, 8–10, cf. p.197.
[3] See above, pp. 186–238.
[4] See above, pp. 239–42.
[5] Noël-Hume 1974, 315, no. 3.



Illus. 5.11.1. Oak-leaf lead ceiling decoration (1:1).

for the numbers, and did not allow for the reversal of the image. The hand may have been intended to point to the six here, as on similar toys; if so, the mould-maker added it pointing to what appeared to be the correct number. However, when reversed on the cast it appeared between III and V. The minute hand was increasingly included on watches in the later part of the seventeenth century,[6] and was usual by the beginning of the eighteenth century. This may give some clue to the date of these toys unless older watches were used as models.

2. Crumpled disc, crudely scratched on one side. Final phase 34, 1650–*c.*1725 (P.ph. 584): *RF 57.*
3. Crudely shaped disc, with off-centre hole. Final phase 37A, *c.*1775–1800 (P.ph. 604): *RF 1661.*

[6] Bruton 1967, 149.

PART 5

12. BONE OBJECTS

by MARTIN BIDDLE

29 bone objects were recorded: five from pre-conquest contexts; two from late medieval contexts; and 23 from post-Dissolution deposits.

The five pre-conquest objects come from final phases which need not be much earlier than *c*.1077. They include a bone comb (*RF 282*) from the fill of G. 8, a third generation grave in the pre-chapter house cemetery. Of the two pieces from later medieval contexts, one (*RF* 634) is a decorated inlaid bone strip from a ditch outside the north wall of the chapter house. The remaining 23 pieces may include some residual medieval objects, but look typical of eighteenth- to nineteenth-century deposits, especially the group from Final phase 37A of *c*. 1775–1800.

The bone objects were sent out for report but were not returned and can no longer be found.

Final phase 4, *c*.800?–*c*.1000 (P.ph. 123B): *RF 2298*, bone, worked bone object, from F. 543.

Final phase 5, *c*.800?–*c*.1000 (P.ph. 128): *RF 900*, bone object, from F. 545.

Final phase 9, *c*.1000–77 (P.ph. 133): *RF 282*, bone comb, from G. 8.

Final phase 10, *c*.1000–77 (P.ph. 8): *RF 821*, bone toggle, from F. 502; *RF 901*, bone object, from F. 502.

Final phase 26, *c*.1350–96 (P.ph. 39): *RF 788*, bone object.

Final phase 28, 1402–*c*.1450 (P.ph. 531): *RF 634*, decorated strip (inlay), from F. 373.

Final phase 31, 1539–*c*.1550 (P.ph. 219): *RF 35*, bone buckle.

Final phase 32, *c*.1550–1600 (P.ph. 582): *RF 562*, bone or ivory object with cut chevron edge.

Final phase 35–6, *c*.1725–*c*.1775 (P.ph. 589): *RF 1626*, bone knife handle with perforation.

Final phase 37A, *c*.1775–1800 (P.ph. 605): *RF 1519*, bone comb, double-sided; *RF 1554*, bone dice; *RF 1558*, bone ?apple corer, distal end, carved; *RF 1568*, bone knife handle; *RF 1634*, bone tool ? corer.

Final phase 37B, 1800–50 (P.ph. 315): *RF 1108*, bone inlay; (P.ph. 720): *RF 545*, engraved silver-bone button.

Final phase 38, 1850–80 (P.ph. 382): *RF 1441*, bone knife handle; (P.ph. 639): *RF 1436*, bone comb; (P.ph. 725): *RF 1240*, bone handle.

Final phase 39, 1880–1900 (P.ph. 657): *RF 1231*, bone-handled iron table knife.

Final phase 38–40, 1850–1920 (P.ph. 726): *RF 1704*, bone knife handle, 18th cent.

Final phase 41, 1920–37 (P.ph. 415): *RF 1972*, bone, decorated handle; (P.ph. 660): *RF 1036*, bone knife handle; (P.ph. 727): *RF 1608*, bone button.

Final phase 42, 1937–40 (P.ph. 97): *RF 1042*, bone button.

Final phase 44, 1960–70 (P.ph. 450): *RF 1082*, bone pin; (P.ph. 680): *RF 1144*, bone knife handle with incised lines; *RF 1145*, bone or ivory. 17th–18th-cent. double-sided comb.

PART 5

13. NEOLITHIC POLISHED AXE AND WORKED FLINTS

by HELEN M. BAMFORD

20 flakes and implements were recorded from the excavation, all from contexts in which they must be presumed to have been residual. They may be classified as follows:

Retouched implements	5
Intact flakes and blades	7
Broken flakes and blades	7
Irregular, possibly accidental flake	1

Retouched implements

1. A small axe-head, intact apart from a deep notch in the butt end (Illus. 5.13.1). The entire surface has been ground, although many flake scars are incompletely removed, and the cutting edge is highly polished. The axe-head is trapezoid in outline, with straight-sides tapering slightly to a broad, thin, slightly rounded butt. Both lateral edges are ground to a smooth, well-defined facet.

   Length: 105 mm. Breadth (cutting edge): 45 mm. Thickness: 23 mm.

   Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 980*, from F. 579.

2. A D-shaped flake scraper (Illus. 5.13.2). The slightly denticulate scraping edge is fashioned by abrupt retouch along the right-hand side and around the distal and bulbar ends of the flake.

   Length: 51 mm. Breadth: 35 mm. Thickness: 9 mm.

   Final phase 41, 1920–37 (P.ph. 660): *RF 1011*, from F. 54.

3. A notched implement. The small crescent-shaped notch is worked on the ventral face of the right-hand edge of a small blade, broken at the bulbar end.

   Length: 30 mm+. Breadth: 14 mm. Thickness: 4 mm.

   Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 313*, from F. 571.

4. A retouched flake. The thin right-hand edge is blunted by neat, abrupt retouch on the dorsal face.

   Length: 32 mm. Breadth: 25 mm. Thickness: 7 mm.

   Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 309*, from F. 571.

5. A retouched flake, broken at the distal end. The bulbar end is thinned by flaking on the ventral face. The right-hand edge is blunted by minimal abrupt retouch.

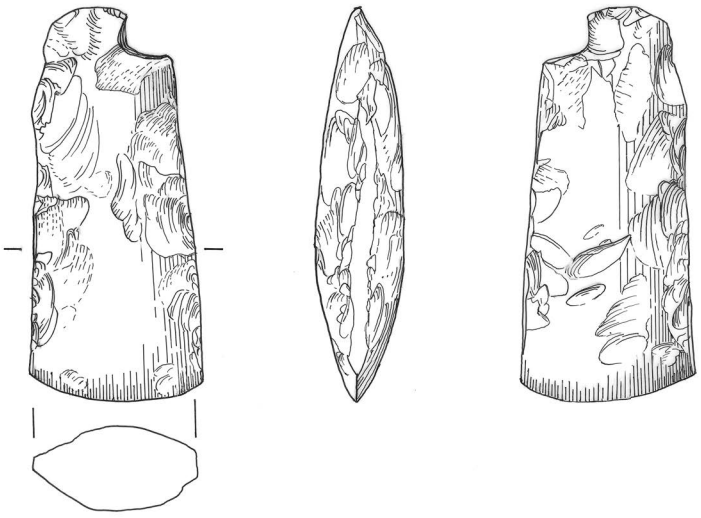
   Length: 31 mm+. Breadth: 26 mm. Thickness: 6 mm.

   Unstratified (from bore-hole 2): *RF 1012*.

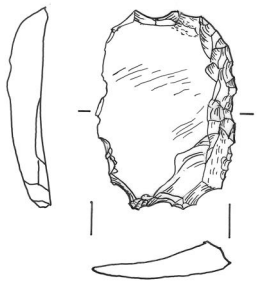
Flakes

The seven intact flakes range in length between 20 mm and 69 mm and all are greater in length than in width. They include one large, parallel-sided blade and three which are of blade-like proportions, having a breadth:length ratio of 2:5 or less. Three of the broken flakes also may be classed as blades or blade-like.

There are no wholly cortical ('primary') flakes; four of the intact flakes are 'secondary', with some cortex remaining on the dorsal face, and three are 'tertiary', without any cortex remaining.



Illus. 5.13.1. Flint axe-head (*RF 980*) (Scale: 1:2).



Illus. 5.13.2. D-shaped flake scraper (*RF 1011*) (Scale: 1:2).

Phasing of flakes

Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 310*, from F. 571; *RF 311*, from F. 571; *RF 312*, from F. 571; *RF 949*, from F. 579.

Final phase 4, *c*.800?–*c*.1000 (P.ph. 123b): *RF 295*, from F. 543; *RF 986*, from F. 543; *RF 991*, from F. 543; *RF 995*, from F. 543; *RF 998*, from F. 543; *RF 999*, from F. 543; (P.ph. 689): *RF 1052*, from F. 16.

Final phase 9, *c*.1000–77 (P.ph. 133): *RF 946*, from G. 8.

Final phase 22, 1195–1214 (P.ph. 183): *RF 2408*, from W. 45; *RF 2409*, from W. 45.

Unstratified (from bore-hole 2): *RF 1013*.

The raw material

Most of the other flakes and implements are of a mid- to light grey-brown translucent or mottled, partly translucent flint. Two pieces are of opaque, granular grey flint. The cortex, where present, is light brown or yellowish in colour and generally thick. Only three pieces show any trace of cortication ('patination') of fracture surfaces. On two of them this amounts to no more than a slight, milky clouding, but on the third it is a dense creamy white. One of the flakes is heavily burnt. The polished axe is of very light grey, faintly banded opaque flint which is different from the rest.

Flint adequate for the manufacture of basic flake tools is readily available almost everywhere in weathered surface deposits and gravels, but large nodules of unweathered flint of the high quality suitable for the manufacture of axes were more difficult to source and seem for the most part to have been mined or quarried directly from the chalk or from derived deposits near to outcrops in the chalk.[1] It is possible that the raw material for this particular axe was obtained locally from the Upper Chalk or associated clay-with-flints, although no such procurement site has been identified. More probably it originated in the form of a roughout brought from a source further afield, potentially as far as the flint mines in West Sussex, where axe roughouts were manufactured in quantity during the earlier Neolithic period: axes of flint identified as from these mines have certainly been found distributed widely across south-east England.[2]

Conclusion

The small size of this assemblage, together with the absence of cores or any obvious working waste, such as primary flakes or very small flakes and chips, does not suggest intensive occupation or industrial activity in the immediate vicinity of the site, and the group is also far too small for the kind of statistical analysis which might establish for certain whether or not it is homogeneous. The blades and blade-like flakes are consistent with an earlier Neolithic date, but production of polished flint axes, which seems on present evidence to have begun early in the fourth millennium BC, continued throughout the later Neolithic into the later third millennium BC.

[1] Gardiner 1990, 119; Pitts 1996, 313–23.
[2] Gardiner 1990, 122.

PART 5

14. ROMAN VESSEL AND WINDOW GLASS

by MARTIN BIDDLE

Eight fragments of Roman or probably Roman glass were recorded, five from vessels and three from window glass. Nos 1–4 came from pre-conquest deposits, including No. 3, which if post-medieval must be intrusive. Nos 5–8 were residual in fifteenth-century and later contexts, but are certainly Roman.

Nos 1–3 came from two of the series of north–south ditches preceding the pre-chapter house cemetery. These ditches contained late Roman pottery but are probably of Middle Saxon date.[1] No. 1 came from the primary fill of the west ditch (F. 500), and Nos 2 and 3 from the primary fill of the middle ditch (F. 571, Illus. 2.2.4). No. 4 came from a generalized pre-chapter house deposit. These four pieces are typical of the late Roman material from these ditches, mostly in very small fragments and presumably derived in the course of agriculture from in-situ late Roman deposits in the vicinity.

1. *RF 837*: thick (4 mm) pale green vessel glass. Small, slightly iridescent fragment, curved in both directions, all edges broken, inner and outer surfaces slightly striated. Max. L. 26 mm, max. W. 17 mm. Roman. *RF 308*: thin (<1 mm) pale green vessel glass. Tiny fragment curved in one direction, all edges broken, slightly striated at right-angles to curve. Max. L. 10 mm, max. W. 5 mm. Roman, ?late, cf. No. 6.
2. *RF 896*: medium thick (*c*.2.5 mm) pale green window glass. Possibly very slightly curved, all edges broken, one surface matt, the other ?smooth, both surfaces dulled by erosion. Max. L. 31 mm, max. W. 22 mm. Roman or ?post-medieval, in which case intrusive.
3. *RF842*: medium thick (*c*.2.5 mm) blue-green vessel glass. Curved in both directions, edges broken, outer surface slightly rough, inner surface smooth. Max. L. 29 mm, max. W. 25 mm. Roman.
4. *RF 561*: medium thick (*c*.3 mm) undecayed flat green window glass. One rounded original edge, smooth surfaces with slight vertical striations parallel to surviving edge. Max. H. (parallel to surviving edge) 52 mm, max. W. (from surviving edge) 46 mm. Roman.
5. *RF 573*: thin (<1 mm) pale green vessel glass. Tiny fragment curved in one direction, all edges broken, slightly striated at right-angles to curve, bubble(s) parallel to curve. Max. L. 15 mm, max. W. 11 mm. Roman, ?late, cf. No. 2.
6. *RF 1715*: thin (1.0–1.5 mm) undecayed light green vessel glass. Part of the neck and shoulder of a vessel, striated parallel to the curve, some small bubbles. Estimated D at shoulder *c*.70 mm, extant L. around shoulder *c*.35 mm, max. preserved H. *c*.13 mm. Roman, possibly 4th cent.
7. *RF 1459*: medium thick (*c*.2.5 mm) flat pale green window glass, one surface matt, the other glossy Max. L. 22 mm. max. W. 15 mm. Roman.

Table 5.14.1. Phasing of Roman vessel and window glass from the site of the chapter house

F.ph.	F.ph. Date	P.ph.	Feature no.	RF
3	*c*.400?–*c*.800?	4	F. 500	837
3	*c*.400?–*c*.800?	123a	F. 571	308
3	*c*.400?–*c*.800?	123a	F. 571	896
2–10	Pre-*c*.400?–1077	3	-	842
28	1402–*c*.1450	531	F. 373	561
28	1402–*c*.1450	531	F. 373	573
37B	1800–50	721	F. 117	1715
39–40	1880–1920	399	-	1459

[1] For the pottery, see below, pp. 460–3. For description and discussion of the ditches, see above, pp. 19–24.

PART 5

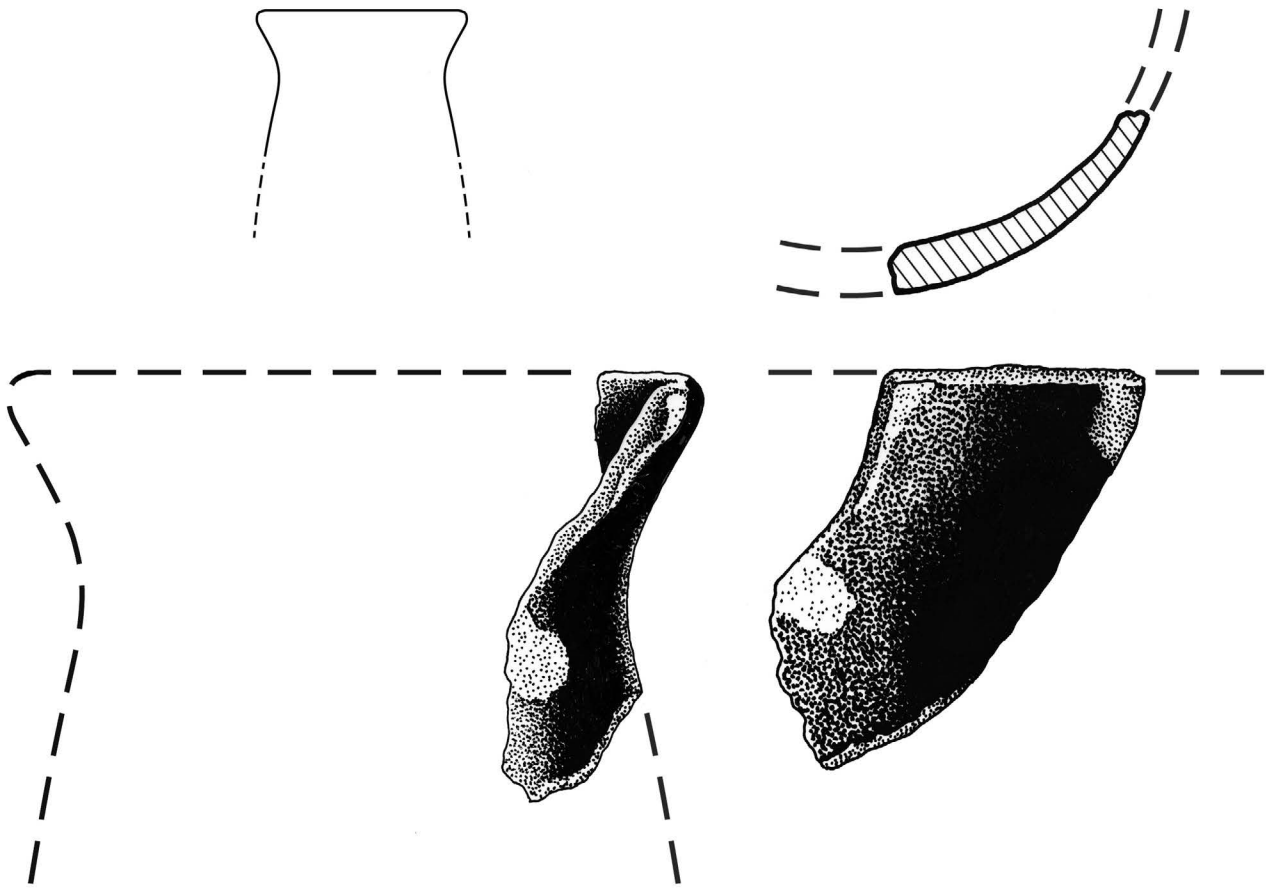
15. MEDIEVAL VESSEL GLASS

by MARTIN BIDDLE

These five fragments come from a bottle (*RF 778*), a flask or flasks (*RF 1865—7)*, and possibly from a drinking glass (*RF 1962*). The bottle and flask or flasks fit well into the late fourteenth to fifteenth century indicated by the phasing. The drinking glass may be, but is not certainly, post-medieval.

The red-glass bottle (*RF 778*) might belong to the category of bag-shaped clear- or green-glass vessels usually regarded as urinals or uroscopes,[1] but the red glass shows that it must be from a bottle, possibly wanded in use, the necks of which were sometimes wrythen.[2] The fourteenth- to early fifteenth-century date of the context of this example from the St Albans chapter house is consistent with the type. The varying thickness of the rim and the distortion of its shape as seen in section suggest that there may have been a pulled-out spout, but the evidence is too slight to suggest more than the drawing shows.

1. *RF 778*: flaring rim and shoulder of a red-glass ?bottle (Illus. 5.15.1). The rim is rounded on top, thickening up to 4 mm; the body is *c*.2 mm thick The surfaces and edges of the breaks devitrified



Illus. 5.15.1. Fragment of red glass bottle (*RF 778*; 1:1).

[1] Charleston 1984, 32–3, Fig. 8

[2] ibid., 33–5, Fig. 9.

to a thin layer of dark brown, but the core red with lighter coloured striations *c*.1 mm wide, *c*.8 mm or less apart, curving upwards towards the rim as if 'wrythen'.

2. *RF 1865*: seven or more small, devitrified, flaking, and opaque fragments of glass *c*.1 mm thick, mostly curving, one fragment rolled through 90-degrees, cf. *RF 1866*.
3. *RF1866*: one fragment of glass, as last, max. L. 29 mm, *c*.1 mm thick, rolled as *RF 1865* through 90-degrees and curved with a diameter of about *c*.120 mm.
4. *RF 1867*: glass, one fragment and a mass of totally devitrified flakes, as *RF 1865–6*. The large fragment has delaminated to reveal a detached pale light green roundel, max. D. 28 mm, flat with a small area of raised wall above, <0.5 mm thick, slightly domed below. Probably the central element of the base of a small flask with a diameter of perhaps 30–35 mm.
5. 5. *RF 1962*: glass, one fragment, max, L. 37 mm, *c*.1 mm thick, devitrified to white surfaces, curved in both directions. Perhaps from the flaring base of a 'wine' glass (or shoulder of a thin-walled flask?). If a base, the glass is separating upwards into two thin layers, not apparently the result of decay, at the point where the base and the wall of the glass might have been formed of two separate parts.

Table 5.15.1. Phasing of medieval vessel glass

F.ph.	F.ph. Date	P.ph.	Feature no.	RF
27	1396–1402	201	-	778
29	*c*.1450–*c*.1500	544	-	1865
29	*c*.1450–*c*.1500	544	-	1866
32	*c*.1550–1600	564	-	1867
35	*c*.1725–*c*.1750	286	F. 241	1962

PART 5

16. ROMAN GLASS BEADS

by MARTIN BIDDLE

Of these three small glass beads, two are certainly and one is probably Roman.[1] The first comes from one of the pre-chapter house ditches (F. 500), which contained late Roman pottery but is probably of Middle Saxon date (see Illus. 2.2.4).[2] The other two came from post-medieval contexts in which the beads were clearly residual.

1. *RF 745*: cylindrical bead, green glass, L. 10 mm; D. 3 mm; perforation, *c.*1mm. Roman.
2. *RF 55*: cylindrical bead, light green glass, L. 3 mm; D. 2.5 mm; perforation, *c.*1.5 mm. Roman.
3. *RF 1113*: flattened spherical bead, turquoise glass, L. 5 mm; D. 6 mm; perforation *c.*1.5 mm. Probably Roman.

Table 5.16.1. Phasing of glass beads

F.ph.	F.ph. date	P.ph.	Feature no.	RF
3	*c.*400?–*c.*800?	4	F. 500	745
36	*c.*1750–*c.*1775	716	-	55
37B	1800–50	315	-	1113

[1] Guido 1978.
[2] See pp. 3–6.

PART 5

17. LAVA AND SANDSTONE QUERNS

by MARTIN BIDDLE

Eight fragments of Rhenish lava querns were found in 1978: four (**1**, **3**–**5**) came from contexts of Final phases 3–5 datable between *c.*400 and *c.*1000, two (**6**, **7**) from post-conquest deposits, and one from the later demolition of the slype (**8**). No fragments of lava querns were found in the work of 1982–4, and only one fragment, unstratified, in 1994–5 (**9**). There was in addition one fragment of what appears to be a quern of a hard insular stone, possibly of sandstone type (**2**).

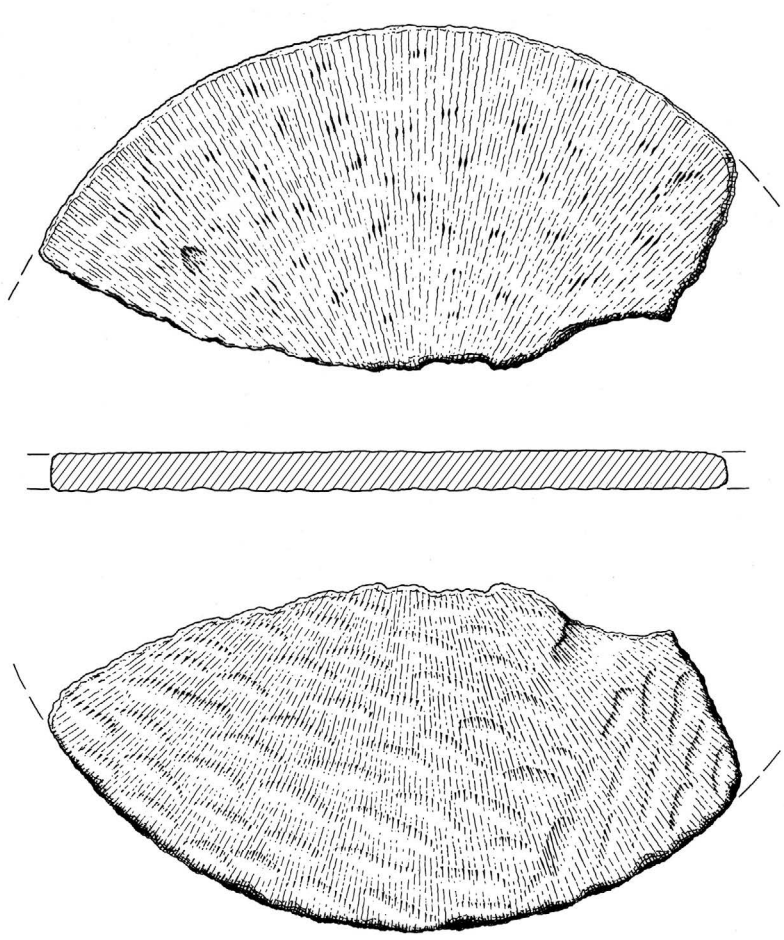
The lava fragments all appear to be from the same kind of relatively thin, flat circular stones, the upper and lower surfaces of which had been dressed. Only the largest fragment (**5**, Illus. 5.17.1) preserved the outer edge; none preserved the hole for the handle set towards one edge of the upper stone or the opening of the central 'hopper'.[1]

Fragments **1**–**3** came from the primary fill and **4** from the upper fill of the central of the series of north–south ditches preceding the pre-chapter house cemetery (Illus. 2.2.4).[2] Fragment **5** came from a pre-chapter house feature, also probably earlier than the pre-chapter house cemetery. These five fragments should thus be seen as deriving from the Middle Saxon use of the site of the later chapter house. Lava and other stone querns of this type are typical imports of the period and their occurrence at St Albans is to be expected.

1. 1.Lava quern, fragment. Not located at time of writing. *RF 950*, from F. 579.
2. 2.Sandstone? quern, fragment of a lower stone. Roughly dressed lower surface, the upper surface polished smooth and rising sharply over a distance of 50 mm from a thickness of 38 mm to 50 mm towards the centre, probably part of the raised collar around a central 'hopper'. *RF 2310*, from F. 579.
3. 3.Lava? fragment, no features. *RF 902*, from F. 579.
4. 4.Lava quern, small fitting fragments of an upper stone, heavily worn to a maximum thickness of *c.*18 mm tapering to 8 mm, the lower face polished by use. *RF 940*, from F. 543.
5. 5.Lava quern, large fragment of an upper stone (Illus. 5.17.1), max. length 372 mm, approximate diam. 540 mm, increasing in thickness from 20 mm at the rim to 23 mm towards the centre. The upper surface roughly tooled, the lower surface rough but polished by use towards the outer edge. No trace of either the handle hole or the central hopper. *RF 864*, from F. 545.
6. 6.Lava quern, fragment of a thick upper stone, increasing in thickness over a distance of 115 mm from 65 mm to 74 mm. The upper surface roughly dressed, the lower only slightly worn. *RF 856*.
7. 7.Lava quern, two fitting fragments with mortar adhering. Possibly from an upper stone, 29 mm thick at what might be the outer edge, tapering to 24 mm over a distance of 100 mm towards the ?centre. *RF 692*, from the core of W. 10.
8. 8.Lava quern with mortar adhering. Not located at time of writing. Not phased, from the demolition of the slype: *RF 3089*.
9. 9.Lava quern, fragment. Not available at time of writing. Not phased, 1994–5, Trenches 10–12, unstratified: *RF 8937*.

[1] For discussion of the source, type, and dating of the large group of Rhenish lava and other querns from Winchester, see Biddle and Smith 1990.

[2] See above, pp. 19–24.



Illus. 5.17.1. Lava quern, Fragment 5 (1:4).

Table 5.17.1. Phasing of lava and sandstone querns

	F.ph.	F.ph. date	P.ph.	Feature or wall no.	RF
1	3	*c*.400?–*c*.800?	123a	F. 579	950
2	3	*c*.400?–*c*.800?	123a	F. 579	2310
3	3	*c*.400?–*c*.800?	123a	F. 579	902
4	4	*c*.800?–*c*.1000	123b	F. 543	940
5	5	*c*.800?–*c*.1000	128	F. 545	864
6	13	1093–*c*.1110	479	-	856
7	29–30	*c*.1450–1539	549	W. 10	692
8	-	-	-	Demo. of slype	3089
9	-	-	-	1994–5, unstratified	8937

PART 5

18.i. IRON AGE POTTERY AND THE PREHISTORIC BACKGROUND

by NICOLA METCALF[1]

Iron Age activity in the vicinity of St Albans Abbey

St Albans Abbey is situated within what was the larger landscape of the Late Iron Age oppidum of Verlamion, which preceded the Roman town of Verulamium. The known Iron Age oppidum comprised a range of enclosures, occupation sites, burial sites (e.g. the ceremonial site at Folly Lane), ditches, and dykes, which have been found running on top of the valley ridge, along the sides, and in the valley floor of the River Ver, including the area of the modern village of St Michael's.[2] On the north side of the River Ver, Iron Age activity extends from the east, from Beech Bottom Dyke, to at least the abbey itself. Not all of this activity is fully understood, nor is it precisely dated.

Within the immediate locale of the abbey there are clear indications of prehistoric activity. South of the abbey in the lower area of what may have been the abbey orchard, a reasonable to large-sized sub-rectangular (trapezoidal) enclosure and other ditches are visible as grass marks on aerial photographs. The enclosure itself is undated, but is thought to be late prehistoric/Iron Age. Recent study of aerial photographs by the author has revealed possible circular features within the enclosure and later rectilinear markings superimposed over the whole enclosure. These findings await further investigation before their precise nature and date can be ascertained, but they may ultimately reveal further information about the immediate area.

Prehistoric pottery has been found at several locations in the vicinity. For example, flint-gritted sherds (date uncertain, but definitely prehistoric) were discovered to the south-west in the foundations of a repaired Victorian rear garden wall on the south side of Orchard Street.[3] Just to the south of the abbey precinct wall, and directly below the aforementioned enclosure on the first terrace of the northern flood plain of the River Ver, excavations in 1975 recovered Late Iron Age pottery in the form of 34 'Belgic' sherds and a fragment of a baked clay 'kiln/fire' bar.[4] This pottery came from residual contexts, having been found within the colluvium (hill wash). There is no direct evidence to link the pottery with the enclosure to the north; however the proximity and upslope location suggests that this may have been the original source. In 1997 further excavation in the area, undertaken as part of an evaluation prior to a potential development scheme, produced a Late Iron Age/Early Roman pit containing 66 sherds of grog-tempered pottery, typical of the Late pre-Roman Iron Age tradition of the area.[5]

To the east of the enclosure (south of the abbey's chapter house and infirmary), and still within the abbey precinct, an excavation in 1968 undertaken by St Albans and Hertfordshire Architectural and Archaeological Society (SAHAAS) also found evidence of Late Iron Age activity.[6] This limited excavation, ahead of the construction of the new Abbey Primary School, revealed a multi-period site with clay pits containing Late Iron Age grog-tempered pottery and a fragment of a coin pellet (or weight) mould found in the south-west corner of the site. Sherds of similar date were also found in the north-west part of the site. Much of the central part remained unexcavated, and has now been built on. Any potential relationship of the finds and features to the enclosure was not established at that time, though their close proximity may be indicative of one and may well suggest high-status activity.

Although the precise nature of the pre-Roman Iron Age activity in the immediate abbey area is relatively ill-defined, it does nonetheless exist, and is evidenced by archaeological finds, a recognizable enclosure, and ditches. These assets currently help to define the beginnings of occupation or activity on this part of the hill slope. Isobel Thompson has suggested that the

[1] Thanks go to Dr Isobel Thompson for her observations on the sherd *RF 289*. Many thanks to Simon West (St Albans City and District Archaeologist) for his support, guidance, and insider information.
[2] Niblett 1999; Thompson 2005a.
[3] Simon West pers. comm.
[4] Saunders and Havercroft 1978, 16.
[5] West 1997.
[6] Christophers 1969, Site 16.

trapezoidal enclosure may actually extend back to the Bronze Age.[7]

Indeed, there is evidence for much earlier prehistoric activity in the area, in the form of flint work. In 1975 Saunders and Havercroft found struck flints, which they regarded as probable Mesolithic/Neolithic.[8] Flintwork had been discovered previously at the Abbey Primary School excavation (Site 16, 1968), namely struck flakes with and without retouch (? Neolithic) and a scraper (? Bronze Age). Further flint debitage and flint-gritted pottery were also found at the Branch Road site, and Folly Lane had both Neolithic or late Bronze Age worked flint, Deverel-Rimbury style pottery sherds, and a late Bronze Age saddle quern and rubbing stone (redeposited).[9] On the east side of Holywell Hill, at the rear of the 'White Hart' (in reasonably close proximity to the abbey), a notable discovery was made of a Late Mesolithic/Early Neolithic round pebble hammer, with an hourglass central hole.[10] In addition, there is the flint work which has been uncovered as a direct result of the excavation below the chapter house.[11] Although the worked flint assemblage 'does not suggest intensive occupation or industrial activity in the immediate vicinity of the site', it does include a specialized polished flint axe-head and other material thought most likely to be Neolithic. The accumulative evidence would seem to suggest a reasonable amount of early prehistoric activity in the vicinity of the abbey, albeit possibly transient in nature.

Given the favourable site, position, and outlook over the river of both the abbey and its precinct on the north slope, it would in fact be surprising if the area were not utilized in the late prehistoric period and possibly earlier. The original construction of the Anglo-Saxon and Norman abbeys and precinct may well have destroyed other probable ephemeral evidence. The more obvious Late Iron Age remains on the top of the opposite upper slope on the south side of the River Ver do not necessarily preclude the existence of occupation/activity on the north side on or near the abbey. The finds considered here, though limited, would seem to support that suggestion. The recent photographic discoveries of features, once properly investigated, may be able to shed further light on the matter.

The Iron Age pottery

There were a few sherds which are identifiable as probable Iron Age, though they are limited in both number and attributes, being relatively undiagnostic small body sherds. However, their fabrics appear distinct enough from other pottery found to warrant description. They were all discovered in residual contexts and with the exception of *RF 289* are abraded.

The fabric of one sherd (*RF 648*, Final phase 3, *c*.400?–*c*.800? (P.ph. 471), from F. 402, weight 7 g) and its conjoining fragment (also *RF 648*) suggest a probable mid-Iron Age date. This is a small, handmade, heavily abraded sherd. It has a reduced black fabric with very shallow red-brown oxidized inner and outer surfaces. The inclusions are fine-medium sand, which is moderately well-sorted; other inclusions are very mixed, ill-sorted, medium, and occasionally larger quartz of various colours, mostly fairly rounded 0.5–2 mm, and additional angular, ill-sorted, pure white quartz/?calcite. Also, a relatively large burnt ironstone? inclusion 3 x 4 mm and a ferrous globule 2 x 4 mm are visible at the break. The sherd tapers slightly and it is possible that this was a simple, slightly inward-sloping blunt rim, but the oxidized surface does not appear to cover what would have been the rim, and the unwashed conjoining fragment is less rounded and less rim-like.

A further sherd (*RF 307,* Final phase 3, *c*.400?–*c*.800? (P.ph. 123a), from F. 571, weight 15 g) cannot be clearly identified. It is fired clay, thick, crude, and handmade, but it is unclear whether it is a very crude pot fragment, or a mould/crucible fragment, or oven/furnace material. The inner surface and overall fabric is reduced black, the outer surface orange-brown. The fabric is not entirely dissimilar to the probable Iron Age sherd *RF 648*, and likewise includes ferrous globules, but not angular white quartz/?calcite, and additionally has an occasional fossiliferous inclusion.

There remains a somewhat contentious sherd (*RF 289*, Final phase 3, *c*.400?–*c*.800? (P.ph. 123a), from F. 571, weight 14 g), which was originally described by Stephen Greep in 1993 as being a sherd of a Late Iron Age/Early Roman shell-tempered storage jar.[12] Greep stated that 'pottery of similar date has previously been recorded in the area', making reference to Saunders and Havercroft's excavation report.[13] Yet the Late Iron Age pottery from the site referred to is described as 'Belgic', and no reference is made in that report to any shelly ware.

This small- to medium-sized sherd (*RF 289*) is handmade. Its form is unclear, but the curve would indicate a large jar or curved vessel; the tapering of the sherd is quite notable given its relatively small size. The fabric is a very dark grey/black with the outer margin and surfaces an oxidized red-brown, the inner surface being a brighter

[7] Thompson 2005b, 19.
[8] Saunders and Havercroft 1978, 16.
[9] Thompson 2005b, 19.
[10] Simon West pers. comm.
[11] See pp. 422–3.

[12] Stephen Greep submitted an archive report on the Roman pottery from the chapter house site to St Albans Museum in 1993, but it cannot now be located. This sherd was numbered AR87 in his report.
[13] Saunders and Havercroft 1978, 16.

red-brown. The piece is very hard, dense, and well-fired, with part-smoothed surfaces that have a soapy feel. The fabric is packed with prolific ill-sorted, variably-sized, fossiliferous shell and occasional foraminifera. Following discussion, it is felt that the sherd is rather too well-fired, hard, and dense to be typical of the Late Iron Age shelly pottery found locally. It is more likely to be Roman in date – indeed the fabric is very similar in description to Late Romano-British Shelly ware (ROB SH). However, it is acknowledged that this sample appears to be handmade, thicker, and more solid than other ROB SH sherds identified from site.

Conclusions

These few sherds do not constitute a dynamic nor a conclusive array of Iron Age pottery. They do, however, provide some evidence for mid- to late prehistoric activity in the immediate vicinity of the abbey and its precinct. I believe this to be the most northerly discovered evidence of its kind found on the abbey slope to date, and as such it contributes to the overall picture of the prehistoric use of the area.

PART 5

18.ii. THE ROMAN POTTERY

by STEPHEN J. GREEP *and* FRANCIS M. MORRIS[1]

Introduction

The excavations on the site of the chapter house produced a small, but significant, quantity of Roman pottery (196 sherds, 3.52 kg). Most of the sherds recovered were small and well abraded, and few vessel types could be identified.

Earlier Roman material

The vast majority of the identifiable Roman pottery sherds from the chapter house site were of late Roman date, although the assemblage included a small sherd from a necked jar of probable earlier Roman date (*RF 885*), and a worn sherd of a hemispherical bowl of earlier Roman date (*RF 697*). Two Verulamium-region white ware vessels found at the site appear to represent a redeposited burial group of the later second or early third century AD.[2] The single sherd of a South Spanish Dressel 20 olive oil amphora (*RF 1939*) could date anywhere between the mid-first century AD and the mid-third century AD.[3] No sherds of samian ware were recovered.[4] Even taking the small size of this assemblage into account, the rarity of first- and second-century material appears to be significant.

Late Roman material

The overwhelming majority of the forms and fabrics represented in the chapter house assemblage fall comfortably into a mid third- to fourth-century date-range and bear comparison with similar groups at Verulamium. Rather surprisingly, however, Black burnished ware (BB1) is absent; BB1 is well represented in late Roman groups at Verulamium and given the size of the chapter house deposit one would have expected the presence of some vessels.[5]

Forms and fabrics

*Note: Verulamium-region white ware (*RF 1700* and *RF 1702*) is excluded from calculation of the proportions.

A. Fine wares

i. Nene Valley colour-coated wares (130 g, 12 sherds)

Nene Valley colour-coated wares are well represented at Verulamium from *c.* AD 250 onwards.[6] The only identifiable form from the chapter house site was a Howe *et al.* 1981, Type F79 (*RF 877*).

Final phase 3, *c.*400?–*c.*800? (P.ph. 123a): *RF 287*, *RF 303*, and *RF 316*, all from F. 571; (P.ph. 697): *RF 761*, from F. 312

Final phase 4, *c.*800?–*c.*1000 (P.ph. 123b): *RF 983*, from F. 543

Final phase 9, *c.*1000–77 (P.ph. 133): *RF 865*, from G. 8

Final phase 2–10, pre-*c.*400?–1077 (P.ph. 3): *RF 843*; *RF 894*

Final phase 13, 1093–*c.*1110 (P.ph. 479): *RF 877*, Howe *et al.* 1981, Type F79

Final phase 17, 1154/9–66 (P.ph. 158): *RF 890*

Final phase 28, 1402–*c.*1450 (P.ph. 543): *RF 681*, from F. 373

Final phase 42, 1937–1940 (P.ph. 96): *RF 1828*

[1] Stephen Greep submitted the original report in 1993. Because the archive report sent at the same time could not now be located, the Roman sherds were re-identified by Francis Morris and the original report revised. Nicola Metcalf, Alison Turner-Rugg, and Simon West provided further advice and identified several sherds of possible Iron Age date (see above, pp. 451–2).

[2] See below, pp. 455–7.

[3] Tyers 1996.

[4] Large-scale importation of Central Gaulish samian ware had ceased by the end of the 2nd cent. AD and East Gaulish samian ware imports had ceased by the mid-3rd cent., Tyers 1996.

[5] Frere 1972, Fig. 135. There are few well-dated, sizeable groups from late Roman Verulamium to be able to assess the frequency of BB1 during this period. At the Verulamium 'black and brown earth' Theatre deposits, for example, the proportion of Verulamium-region white wares was larger than BB1, Geddes 1977, Fig. 20.

[6] Ros Niblett, pers. comm. June 2012. Vessels from Antonine fire deposits at Verulamium (e.g. Frere 1972, Fig. 122, 790–2 and 795–6) have been claimed as of Nene Valley origin (e.g. Howe *et al.* 1981, 7), although most, if not all, the colour-coated wares from the Antonine fire deposits appear to be from Cologne or Colchester (Ros Niblett, pers. comm. June 2012).

Table 5.18.1. Roman pottery from the chapter house site: fabric identifications

Ware	Weight (g)	Proportion by weight (%)*	No. of sherds	Proportion by no. of sherds (%)*
Nene Valley colour-coated	130	6.4	12	8.7
Oxfordshire red-slipped	120	5.9	21	15.2
Possible Hadham red-slipped	50	2.5	5	3.6
Uncertain colour-coated	60	2.9	7	5.1
Fine ware total	360	17.7	45	32.6
Verulamium-region white ware	1,480	-	58	-
Shell-tempered	50	2.5	10	7.3
Misc. oxidized wares	460	22.6	38	27.5
Misc. sandy grey wares	600	29.4	29	21.0
Coarse ware total	2,590	-	135	-
Coarse ware total (excluding the Verulamium-region white ware)	1,110	54.4	77	55.8
Oxfordshire white ware mortaria	150	7.4	4	2.9
Oxfordshire white colour-coated mortaria	120	5.9	7	5.1
Oxfordshire white colour-coated ware (probably mortaria)	20	1.0	4	2.9
Mortaria total	290	14.2	15	10.9
Dressel 20 amphora	280	13.7	1	0.7
Pottery total	3,520	-	196	-
Pottery total (excluding the Verulamium-region white ware)	2,040	100	138	100

ii. Oxfordshire red-slipped wares (120 g, 21 sherds)

Oxfordshire products are the most common late Roman, non-local, fabrics encountered at Verulamium. It is no surprise, therefore, that they were frequently identified amongst the chapter house deposits. Oxfordshire red-slipped wares were not produced until the mid-third century and a number of the chapter house forms are fourth-century types (e.g. C75 and the examples with impressed decoration). A number of forms were identifiable (type numbers refer to Young 1977): C51 (*RF 679*); C51/52/53 (*RF 300*, *RF 597*, *RF 867*); C75 (*RF 2293*), and C75/78 (*RF 1888*).

Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 300*, Young Type C51/52/53, from F. 579; (P.ph. 471): *RF 1956*, with 'stabbed' decoration, from F. 352; (P.ph. 474): *RF 679*, Young Type C51, from F. 372; (P.ph. 697): *RF 724*, with 'rouletted' decoration, and *RF 760*, both from F. 312

Final phase 4, *c*.800?–*c*.1000 (P.ph. 123b): *RF 867*, Young Type C51/52/53, *RF 888*, *RF 987*, and *RF 994*, all from F. 543

Final phase 4–5, *c*.800?–*c*.1000 (P.ph. 5): *RF 834*, from F. 501

Final phase 6, *c*.800?–*c*.1000 (P.ph. 130): *RF 893*, with rouletted decoration, from G. 30

Final phase 10, *c*.1000–77 (P.ph. 9): *RF 832*

Final phase 11, 1077–88 (P.ph. 12): *RF 2290* and *RF 2293*, Young Type C75, both from F. 591

Final phase 13, 1093–*c*.1110 (P.ph. 149): *RF 853*, from F. 520

Final phase 17, 1154/9–66 (P.ph. 156): *RF 845*; (P.ph. 486): *RF 721*, with impressed decoration, and *RF 773*

Final phase 32, *c*.1550–1600 (P.ph. 250): *RF 597*, Young Type C51/52/53

Final phase 37A–37B, *c*.1775–1850 (P.ph. 332): *RF 1888*, Young Type C75/78

Final phase 41, 1920–37 (P.ph. 95): *RF 2564*

iii. Possible Hadham red-slipped wares (50 g, 5 sherds)

Hadham Wares have been recorded from late Roman contexts elsewhere in Verulamium.[7]

Final phase 4, *c*.800?–*c*.1000 (P.ph. 123b): *RF 297*, *RF 301* [joins with *RF 879*], and *RF 880*, with impressed decoration ('Romano-Saxon' ware), all from F. 543

Final phase 13, 1093–*c*.1110 (P.ph. 150): *RF 879* [joins with *RF 301*], from G. 9; (P.ph. 479): *RF 884*, from F. 410

v. Uncertain colour-coated wares (60 g, 7 sherds)

Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 883*, from F. 571; (P.ph. 471): *RF 1957*, from F. 352

Final phase 6, *c*.800?–*c*.1000 (P.ph. 130): *RF 891*, from G. 27

Final phase 2–10, pre-*c*.400?–1077 (P.ph. 3): *RF 841*

Final phase 29, *c*.1450–*c*.1500 (P.ph. 708): *RF 770*, from F. 308

Final phase 35, *c*.1725–*c*.1750 (P.ph. 257): *RF 602*, from G. 5/F. 173

Final phase 37A–37B, *c*.1775–1850 (P.ph. 624): *RF 1955*

B. Coarse wares

i. Verulamium-region white ware (1,480 g, 58 sherds)

The Verulamium-region white wares consist of two vessels *RF 1700* and *RF 1702* (Illus. 5.18.1)

Final phase 37A, *c*.1775–1800 (P.ph. 605): *RF 1700*, comprised of 21 sherds weighing 680 g, and *RF 1702*, comprised of 37 sherds weighing 800 g and associated with cremation *RF 1703*

Although they derive from an eighteenth-century context, the fact that one vessel (*RF 1702*) had cremated bone (*RF 1703*) in association strongly suggests that this is a redeposited burial, disturbed in the post-medieval period. The cremation urn is of a common Verulamium type, most typically decorated with a face. The type may be dated to the mid-second to early third century.[8] The present example has the rilled rim and the lugs immediately beneath the rim, typical of the form, but not the facial decoration (although this may have been lost). A number of similar vessels were recovered from late Antonine deposits at the Branch Road Bath House.[9] The second form (*RF 1700*), a necked jar, is a well-known late Verulamium product.[10] Assuming that this find is indeed redeposited, it clearly represents part of a burial group of the late second or early third century.

The Verulamium-region white ware industry appears to have declined dramatically around the end of the second century, though small-scale production continued down to the fourth century.[11] There is sufficient workshop evidence to demonstrate widespread production of the industry into the last quarter of the second century;[12] locally the fabric is still dominant in groups immediately post-dating the Antonine Fire.[13] The recovery of Verulamium-region white wares in association with shell-tempered vessels in graves at King Harry Lane, as well as in mid third-century deposits at the associated settlement site,[14] and from fourth-century black and brown earth deposits at the theatre site,[15] demonstrates that the industry continued into the third and fourth centuries.

ii. Shell-tempered vessels (50 g, 10 sherds)

Shell-tempered vessels are well recorded at Verulamium and are generally considered to be a late Roman fabric.[16] A small number of vessels were recovered from the chapter house, and two sherds of Frere 1984, Form 2189 were identified (*RF 720* and *RF 988*).

Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 288*, *RF 291*, rilled body sherd from a jar, and *RF 306*, all from F. 571; (P.ph. 471): *RF 698* and *RF 720*, both from F. 402; *RF 710*, from F. 352

[7] Geddes 1977, 9–11; Lyne 1999.

[8] Frere 1984, Fig. 88, 2154; Braithwaite 1984, 108.

[9] Unpublished excavations. Stephen Greep is grateful to Mr C. Saunders for access to this material.

[10] cf. Corder 1941, Fig. 7.

[11] Crouch and Shanks 1984, 67; Lyne 1999, 296–9; Niblett 2005, 131, 158.

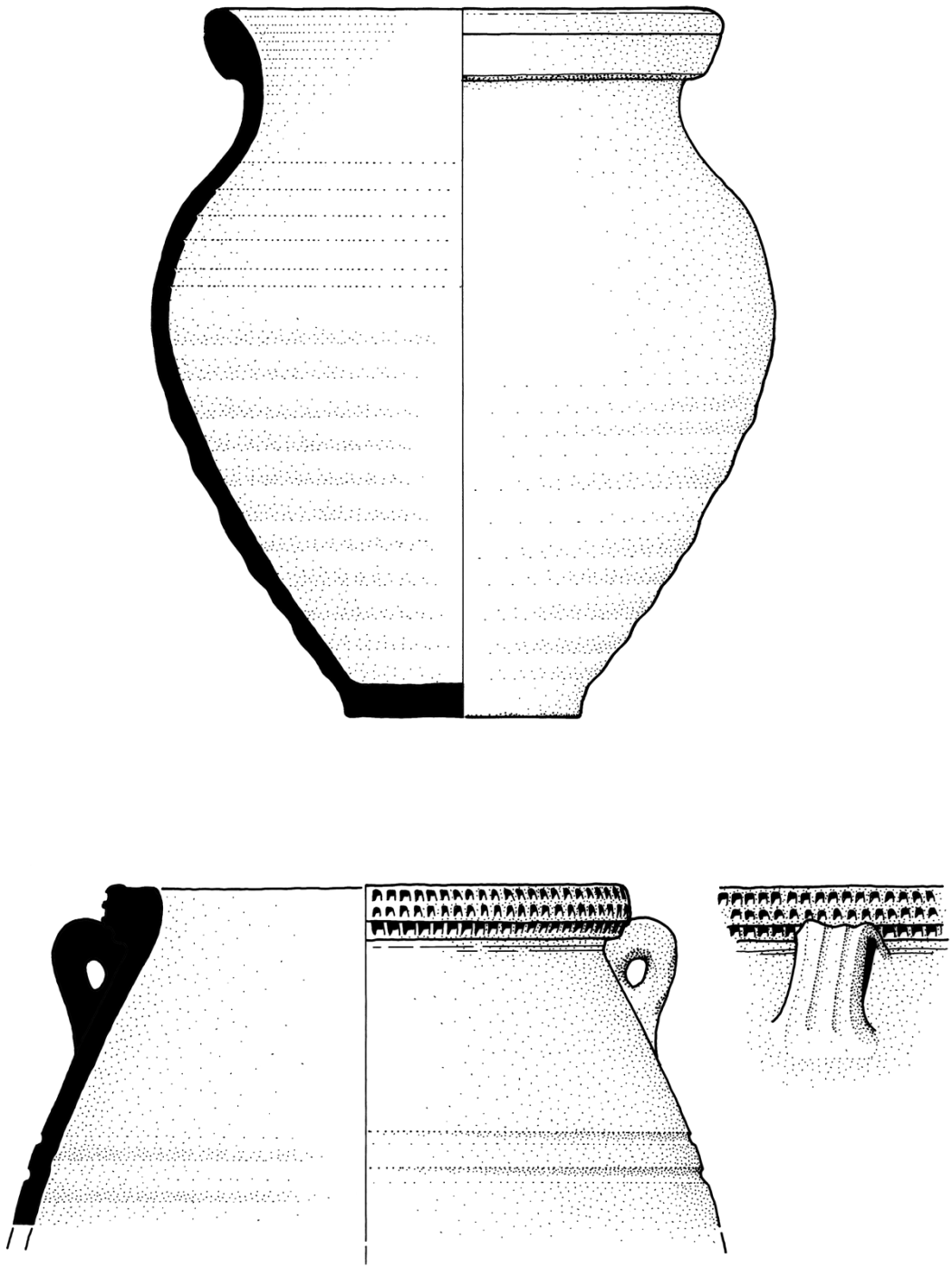
[12] Crouch and Shanks 1984, note 8.

[13] For example the Insula V, Pit 6 group at Verulamium where the contents of the pit included numbers of 'saggars' and 'wasters', evidently debris from some neighbouring kiln. This deposit also included a worn coin of AD 154–5, Corder 1941, 271.

[14] Stead and Rigby 1989, 71, 218

[15] Geddes 1977, Fig. 20.

[16] cf. Stead and Rigby 1989, 218.



Illus. 5.18.1. Verulamium-region white ware vessels, *RF 1700* (top) and *RF 1702* (bottom) (both 1:2).

Final phase 4, *c.*800?–*c.*1000 (P.ph. 123b): *RF 294* and *RF 988*, both from F. 543

Final phase 10, *c.*1000–77 (P.ph. 8): *RF 749*, from F. 498

Final phase 37A–37B, *c.*1775–1850 (P.ph. 624): *RF 1954*

iii. Miscellaneous oxidized wares (460 g, 38 sherds)

Final phase 3, *c.*400?–*c.*800? (P.ph. 122): *RF 992*, from F. 579; (P.ph. 123a): *RF 285*, *RF 873*, and *RF 996*, all from F. 571; (P.ph. 471): *RF 719*, from F. 402; (P.ph. 697): *RF 758–9*, and *RF 762*, all from F. 312

Final phase 4, *c*.800?–*c*.1000 (P.ph. 123b): *RF 298–9*, *RF 321*, *RF 871*, *RF 984*, *RF 990*, and *RF 993*, all from F. 543; (P.ph. 126): *RF 886*, from F. 574

Final phase 4–5, *c*.800?–*c*.1000 (P.ph. 5): *RF 757*, from F. 501

Final phase 5, *c*.800?–*c*.1000 (P.ph. 128): *RF 868* and *RF 887*, both from F. 545

Final phase 6, *c*.800?–*c*.1000 (P.ph. 130): *RF 989*, from G. 26

Final phase 8, *c*.1000–77 (P.ph. 132): *RF 876*, from G. 22

Final phase 9, *c*.1000–77 (P.ph. 133): *RF 315*, *RF 869*, and *RF 885*, all from G. 8

Final phase 2–10, pre-*c*.400?–1077 (P.ph. 3): *RF 895*

Final phase 10, *c*.1000–77 (P.ph. 8): *RF 753–4*, both from F. 498; (P.ph. 9): *RF 833*

Final phase 11, 1077–88 (P.ph. 12): *RF 2284*, *RF 2288–9*, and *RF 2292*, all from F. 591

Final phase 17, 1154/9–66 (P.ph. 488): *RF 830*, from F. 470; (P.ph. 495): *RF 828*

Final phase 29, *c*.1450–*c*.1500 (P.ph. 696): *RF 768*, from F. 307

Final phase 35, *c*.1725–-*c*.1750 (P.ph. 284): *RF 852*

Final phase 37B, 1800–50 (P.ph. 721): *RF* [none given], from F. 117

Final phase 41, 1920–37 (P.ph. 727): *RF 2570*

iv. Miscellaneous sandy grey wares (600 g, 29 sherds)

A number of forms are paralleled in the published Verulamium sequences. In particular, a small number of flanged bowls, typical of the later third and fourth centuries (form numbers refer to Frere 1984): Form 2482 (*RF 617*); Form 2485 (*RF 717*); Form 2519 (*RF 870*).

Final phase 2–3, pre-*c*.400?–*c*.800? (P.ph. 118): *RF 850*

Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 286*, *RF 290* [joins with *RF 302*], *RF 293*, *RF 302* [joins with *RF 290*], and *RF 305*, all from F. 571; (P.ph. 471): *RF 647*, made into a counter, *RF 697*, and *RF 872*, all from F. 402; *RF 713*, from F. 352

Final phase 4, *c*.800?–*c*.1000 (P.ph. 123b): *RF 874–5*, both from F. 543

Final phase 4–5, *c*.800?–*c*.1000 (P.ph. 5): *RF 755–6*; *RF 835–6*, all from F. 501

Final phase 6, *c*.800?–*c*.1000 (P.ph. 130) *RF 889*, from G. 26

Final phase 2–9, pre-*c*.400?–1077 (P.ph. 2): *RF 2281*

Final phase 4–10, *c*.800?–1077 (P.ph. 477): *RF 2283*

Final phase 10, *c*.1000–77 (P.ph. 8): *RF 751*, from F. 498; *RF 839*

Final phase 11, 1077–88 (P.ph. 12): *RF 2287*, from F. 591

Final phase 13, 1093–*c*.1110 (P.ph. 150): *RF 870*, Frere 1984, Form 2519, from G. 9

Final phase 15, 1151–4/9 (P.ph. 482): *RF 717*, Frere 1984, Form 2485, and *RF 718*, both from F. 401

Final phase 26, *c*.1350–96 (P.ph. 38): *RF 746–7* [join to each other]

Final phase 31, 1539–*c*.1550 (P.ph. 251): *RF 604*

Final phase 35, *c*.1725–*c*.1750 (P.ph. 286): *RF 617*, Frere 1984, Form 2482, from F. 241

C. Mortaria

i. Oxfordshire white ware mortaria (150 g, 4 sherds)

Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 314*, from F. 571

Final phase 11, 1077–88 (P.ph. 12): *RF 2291*, from F. 591

Final phase 26, *c*.1350–96 (P.ph. 37A): *RF 725*

Final phase 41, 1920–37 (P.ph. 91): *RF 1899*

ii. Oxfordshire white colour-coated mortaria (120 g, 7 sherds)

Final phase 3, *c*.400?–*c*.800? (P.ph. 123a): *RF 292*, from F. 571; *RF 882* [joins with *RF 982*], from F. 579

Final phase 4, *c*.800?–*c*.1000 (P.ph. 123b): *RF 981–2* [*RF 982* joins with *RF 882*], both from F. 543

Final phase 4–10, *c*.800?–1077 (P.ph. 477): *RF 2282*

Final phase 9, *c*.1000–77 (P.ph. 133): *RF 878*, from G. 8

Final phase 33, 1600–50 (P.ph. 568): *RF 566*

iii. Oxfordshire white colour-coated ware (probably mortaria) (20 g, 4 sherds)

Final phase 4, *c*.800?–*c*.1000 (P.ph. 123b): *RF 866* and *RF 881*, both from F. 543

Final phase 8, *c*.1000–77 (P.ph. 132): *RF 892*, from G. 22

Final phase 25–8, *c*.1300–*c*.1450 (P.ph. 520): *RF 680*

D. Amphora

i. Dressel 20 amphora (280 g, 1 sherd)

A single sherd of a pinky-buff amphora was recovered. It is very probably southern Spanish and from a Dressel 20 olive oil amphora.[17] Final phase 35, *c*.1725–*c*.1750 (P.ph. 280): *RF 1939*, from F. 185

Discussion

The bulk of the Roman pottery came from four ditches (F. 372, 402, 543, and 571) and related deposits (F. 312, 352, 501, and 574) of Final phases 3, 4, and 4–5 (Table 5.18.2). The ditches are of Middle Saxon date and the Roman pottery within them is residual, presumably deriving from otherwise undetected late Roman activity on, or near the chapter house site.[18] Indeed, the overall impression of the Roman pottery from the chapter house site is that there was no significant occupation or activity on the hill top in the area later to be occupied by the abbey until the later part of the Roman period. Only a few sherds of probable early Roman date were recovered. Two late second- or early third-century Verulamium-region white ware vessels appear to have formed part of a cremation group that was dug up, probably in one of the city's Roman cemeteries, and ultimately redeposited in the post-medieval period. The vast bulk of the datable Roman pottery from the chapter house site can be firmly placed in the mid-third to fourth century.

Other excavations in the abbey precinct have generally produced only very small quantities of Roman pottery.[19] But excavations in 1982–4, which took place less than 35 m to the west of the chapter house, produced a notable amount of Roman pottery (718 sherds, with 108 coins and 70 fragments of glass) from on top of a gravel surface that was laid initially towards the end of the fourth century.[20] This surface appears to have been in use, with repairs and relaying, from the end of the fourth century and into the fifth, but for how long we cannot say.[21] Could the material from the chapter house site have ultimately derived from activity related to the use of the gravel surfaces to the west?

Table 5.18.2. Roman pottery from the chapter house site: phasing[22]

F.ph.	F.ph. date	P.ph.	Feature or grave No.	No. of *RF*s	*RF*
2–3	Pre-*c*.400?–*c*.800?	118	-	1	850
3	*c*.400?–*c*.800?	122	F. 579	1	992
		123a	F. 571	18	285–8, 290–3, 302–3, 305–6, 314, 316, 873, 883, 996
		123a	F. 579	2	300, 882
		471	F. 352	4	710, 713, 1956–7
		471	F. 402	6	647, 697–8, 719–20, 872
		474	F. 372	1	679
		697	F. 312	6	724, 758–62
4	*c*.800?–*c*.1000	123b	F. 543	22	294, 297–9, 301, 321, 866–7, 871, 874–5, 880–1, 888, 981–4, 987–8, 990, 993–4
		126	F. 574	1	886

[17] Tyers 1996.

[18] See above, pp. 404–8.

[19] e.g. Saunders and Havercroft 1978, 16; Niblett 1988; Godwin 1992; cf. Niblett 2005.

[20] Biddle and Kjølbye-Biddle 2001, 62.

[21] For the evidence of the coins, see above, pp. 404–8.

[22] Each *RF* represents a single sherd, except for *RF 1700* and *RF 1702* (the Verulamium-region white ware vessels) from Final phase 37A, which are comprised of 21 and 37 sherds respectively. There are two pairs of joining sherds, in which the joining sherds derive from different contexts; these are *RF 301* (from Final phase 4 (P.ph. 123b), F. 543), which joins to *RF 879* (from Final phase 13 (P.ph. 150), G. 9) and also *RF 982* (from Final phase 4 (P.ph. 123b), F. 543), which joins to *RF 882* (from Final phase 3 (P.ph. 123a), F. 579).

Table 5.18.2. Roman pottery from the chapter house site: phasing *cont*.

F.ph.	F.ph. date	P.ph.	Feature or grave No.	No. of *RF*s	*RF*
4–5	*c*.800?–*c*.1000	5	F. 501	6	755–7, 834–6
5	*c*.800?–*c*.1000	128	F. 545	2	868, 887
6	*c*.800?–*c*.1000	130	G. 26	2	889, 989
		130	G. 27	1	891
		130	G. 30	1	893
8	*c*.1000–77	132	G. 22	2	876, 892
2–9	pre-*c*.400?–77	2	-	1	2281
9	*c*.1000–77	133	G. 8	5	315, 865, 869, 878, 885
2–10	Pre-*c*.400?–1077	3	-	4	841, 843, 894–5
4–10	*c*.800?–1077	477	-	2	2282–3
10	*c*.1000–77	8	F. 498	4	749, 751, 753–4
		8	-	1	839
		9	-	2	832, 833
11	1077–88	12	F. 591	8	2284, 2287–93
13	1093–*c*.1110	149	F. 520	1	853
		150	G. 9	2	870, 879
		479	F. 410	1	884
		479	-	1	877
15	1151–4/9	482	F. 401	2	717–8
17	1154/9–66	156	-	1	845
		158	-	1	890
		486	-	2	721, 773
		488	F. 470	1	830
		495	-	1	828
26	*c*.1350–96	37A	-	1	725
		38	-	2	746–7
25–8	*c*.1300–*c*.1450	520	-	1	680
28	1402–*c*.1450	543	F. 373	1	681
29	*c*.1450–*c*.1500	696	F. 307	1	768
		708	F. 308	1	770
31	1539–*c*.1550	251	-	1	604
32	*c*.1550–1600	250	-	1	597
33	1600–50	568	-	1	566
35	*c*.1725–*c*.1750	257	G. 5/F. 173	1	602
		280	F. 185	1	1939
		284	-	1	852
		286	F. 241	1	617
37A	*c*.1775–1800	605	-	2	1700, 1702
37A–7B	*c*.1775–1850	332	-	1	1888
		624	-	2	1954–5
37B	1800–50	721	F. 177	1	[No *RF* given]
41	1920–37	91	-	1	1899
		95	-	1	2564
		727	-	1	2570
42	1937–40	96	-	1	1828

PART 5

18.iii. MEDIEVAL AND FIFTEENTH/SIXTEENTH-CENTURY CERAMICS

by ALISON TURNER-RUGG[1]

A total of 45 out of 59 medieval and fifteenth/sixteenth-century ceramic registered finds ('RF') from the 1978 excavations were located and examined by the author of this report. The finds comprised small, presumably residual, sherds and most, but not all, of them consisted of single sherds. Fourteen finds listed in the finds register were not found. They are listed here as unseen by the author, with their identifications at the finds viewings in 1978 by Martin Biddle as recorded in the finds register. The finds seen by the author consisted of a total of 33 medieval and nine late fifteenth- to sixteenth-century pieces (with the 'unseen' finds the totals are 46 medieval and ten late fifteenth- to sixteenth-century pieces). There were three indeterminate examples which could not be identified. The sherd counts and weights of the various fabrics identified are given in Table 5.18.3. They are all fabrics commonly found in the St Albans area. Some are found in a phase whose date corresponds to the known date of the pottery type itself, others are found in much later deposits.

A. Medieval ceramics

i. Black coarseware, Dark Age? (1 RF unseen)

Final phase 3, c.400?–c.800? (P.ph. 471):

RF 648, abraded sherd (unseen), from F. 402

ii. Grass-tempered ware, Early? (3 RF unseen)

Final phase 3, c.400?–c.800? (P.ph. 471):

RF 699, sherd (unseen), from F. 402; (P.ph. 697)

RF 771, rim sherd (unseen), from F. 312

Final phase 15, 1151–4/9 (P.ph. 482):

RF 673, sherd (unseen), from F. 403

iii. Sand and shell tempered wares, Early? (1 RF, 1 sherd, 1 g)

Final phase 3, c.400?–c.800? (P.ph. 471):

RF 700, body sherd, under 1 g in weight, dark core, pink surfaces, from F. 402

iv. St Neots type wares, late 9th–12th century (22 RF, 23 sherds, 172 g, and 9 RF unseen)

Final phase 9, c.1000–77 (P.ph. 133):

RF 945, body sherd, 22 g, shelly with bryozoa, pinkish-brown surfaces, dark grey core, from G. 8

Final phase 10, c.1000–77 (P.ph. 8):

RF 951, 'St Neots in-turned rim bowl, 2 sherds' (unseen) [see also *RF 951* in P.ph. 9]

RF 952, 'St Neots in-turned rim bowl, 1 sherd' (unseen) [see also *RF 952* in P.ph. 9]

RF 962–3, 'St Neots ware in-turned rim bowl' (unseen)

RF 964, base angle sherd, 22 g, shelly with bryozoa, grey core with pink surfaces

RF 965, body sherd, 4 g, shelly, no visible bryozoa, grey core, pink surfaces

RF 966, body sherd, 17 g, shelly with bryozoa, black core with pink surfaces

RF 967, two joining body sherds, 4 g, shelly, no visible bryozoa, dark grey core, pink surfaces

RF 968, base angle sherd, 8 g, shelly with bryozoa, black core and external surface, pinkish-brown internal surface

RF 969, body sherd, 10 g, shelly with bryozoa, black core with pink surfaces

[1] Detailed report in archive.

Table 5.18.3. Medieval and fifteenth- to sixteenth-century ceramics from the chapter house site: fabric identifications

Fabric	No. of RF seen	No. of sherds	Weight (g)	No. of RF unseen
Black coarseware, Dark Age?	-	-	-	1
Grass-tempered ware, Early?	-	-	-	3
Sand and shell tempered wares, Early?	1	1	1	-
St Neots type wares, late 9th–12th cent.	22	23	172	9
Early medieval sandy ware, 11th cent.	1	1	6	-
Early medieval chalky ware, mid 11th–early 12th cent.	1	1	12	-
Early medieval chalky/flinty ware, mid 11th–early 12th cent.	3	3	15	-
South Hertfordshire Greyware, mid 12th–13th cent.	4	4	102	-
Kingston ware, 14th–15th cent.	1	1	4	-
Medieval Ceramics Total	33	34	312	13
15th–16th cent. Stoneware	-	-	-	1
Stoneware, ?Siegburg, 15th cent.	3	3	25	-
?Martincamp flask, 16th cent.	1	1	9	-
?Overfired 16th-cent. local splash-glazed red earthenware	1	1	11	-
Tudor Red, 15th–16th cent.	4	11	68	-
15th- to 16th-cent. ceramics total	9	16	113	1
Indeterminate sherds	3	3	18	-
Medieval and 15th- to 16th-cent. ceramics total	45	53	443	14

RF 970, body sherd, 10 g. shelly with bryozoa, black core and external surface, pink internal surface

RF 971, body sherd, 10 g, shelly with bryozoa, grey core, pink surfaces

RF 972, very edge of rim (vessel form unidentifiable), 1 g, shelly, no visible bryozoa, black core, pink surfaces

RF 973, body sherd, 2 g, shelly with bryozoa, dark grey core, pink surfaces

RF 974, 'St Neots Ware' (unseen)

RF 975, body sherd, 9 g, shelly with bryozoa, black with pink internal surface

RF 976, body sherd, 6 g, shelly, no visible bryozoa, black core with pink surfaces

RF 977, body sherd, 3 g, shelly, no visible bryozoa, black core, pinkish-grey surfaces

RF 978, body sherd, 2 g, shelly with bryozoa, grey core, black external surface, patchy pink and black internal surface, all from F. 502

RF 958, body sherd, 7 g, shelly, no visible bryozoa, grey core, pink surfaces, from F. 498; (P.ph. 9)

RF 951, 'St Neots in-turned rim bowl, 2 sherds' (unseen) [see also *RF 951* in P.ph. 8]

RF 952, from F. 502, 'St Neots in-turned rim bowl, 1 sherd' (unseen). [see also *RF 952* in P.ph. 9]

RF 953–4, 'St Neots ware in-turned rim bowl' (unseen)

RF 955, 'St Neots ware rim' (unseen)

RF 956, rim edge sherd (jar), 5 g, shelly with bryozoa, black throughout, rim edge worn, diameter 120 mm, 10% circumference

RF 957, body sherd, 2 g, shelly, no visible bryozoa, grey core with pink surfaces

RF 959, body sherd, 6 g, shelly with bryozoa, black, sooted externally, lighter internal surface

RF 960, body sherd, 15 g, shelly with bryozoa, dark grey core with pink surfaces

RF 961, body sherd, 3 g, shelly with bryozoa, black with pink internal surface, all from F. 502

Final phase 35, c.1725–c.1750 (P.ph. 286):

RF 2543, rim edge sherd, vessel form unidentifiable, 4 g, shelly with bryozoa, light pinkish-brown throughout

RF 2546, 'St Neots type shelly ware' (unseen), both from F. 241

v. Early medieval sandy ware, 11th century (1 RF, 1 sherd, 6 g)

Final phase 10, c.1000–77 (P.ph. 8):

RF 2541, rim sherd, cf. EMSW (Early Medieval Sandy Ware), Therfield (Biddle 1964), diameter 120 mm, 10% circumference, reduced firing, from F. 502

vi. Early medieval chalky ware, mid-11th/early 12th century (1 RF, 1 sherd, 12 g)

Final phase 42, 1937–40 (P.ph. 96):

RF 2572, body sherd, dark with pink internal surface

vii. Early medieval chalky-flinty ware, mid-11th – early 12th century (3 RF, 3 sherds, 15 g)

Final phase 15, 1151–4/9 (P.ph. 482):

RF 715, body sherd, 7 g, grey core, pink surfaces, external surface slightly blackened (?sooted), chalk with flint, from F. 401

Final phase 36, c.1750–c.1775 (P.ph. 328):

RF 2544, body sherd, 1 g, contains flint and quartz, grey core with pink surfaces; (P.ph. 634)

RF 2545, jar rim sherd, 7 g, contains some flint and quartz, patchy firing, diameter unmeasurable

viii. South Hertfordshire Greyware, mid 12th–13th century (4 RF, 4 sherds, 102 g)

Final phase 4, c.800?–c.1000 (P.ph. 123b):

RF 2300, rim sherd, jug, 18 g, diameter 160–180 mm, 7.5% circumference, from F. 543

Final phase 9, c.1000–77 (P.ph. 133):

RF 944, base angle sherd, 28 g, from G. 8

Final phase 27, 1396–1402 (P.ph. 49):

RF 136, rim/upper body sherd, jar, 51 g, corrugated decoration, diameter 220 mm, 9% circumference

Final phase 42, 1937-1940 (P.ph. 421):

RF 2302, body sherd, 5 g

ix. Kingston ware, 14th–15th century (1 RF, 1 sherd, 4 g)

Final phase 37B, 1800–50 (P.ph. 315):

RF 1106, body sherd, coarse white ware with green splash-glaze

B. Fifteenth and sixteenth-century ceramics

i. 15th–16th century stoneware (1 RF unseen)

Final phase 27, 1396–1402 (P.ph. 202):

RF 795 (unseen)

ii. Stoneware, ?Siegburg, 15th century (3 RF, 3 sherds, 25 g)

Final phase 31, 1539–c.1550 (P.ph. 561):

RF 578, body sherd, 5 g, unglazed grey stoneware [joins *RF 1916*]; (P.ph. 563)

RF 1915, body sherd, 8 g, pale grey unglazed

RF 1916, body sherd, 12 g, pale grey, unglazed [joins *RF 578*]

All three sherds probably come from the same vessel.

iii. ?Martincamp flask, 16th century (1 RF, 1 sherd, 9 g)

Final phase 31, 1539–c.1550 (P.ph. 562):

RF 576, body sherd

iv. Probably overfired 16th-century local splash-glazed red earthenware (1 RF, 1 sherd, 11 g)

Final phase 45, 1970–8 (P.ph. 461):

RF 1079, body sherd (cf. PGR1, Turner-Rugg 1998–9)

v. Tudor Red, 15th–16th century (4 RF, 11 sherds, 68 g)

Final phase 31, 1539–c.1550 (P.ph. 576):

RF 506, body sherd, 8 g, hard, brick-red earthenware, no glaze

RF 509, body sherd, 3 g, as *RF 506*

RF 1822, body sherd, 8 g, as *RF 506*, but with tiny splash of yellow glaze

RF 1979, 8 body sherds and 1 medial handle sherd (all from same vessel but do not join), 49 g, dull red colour, no glaze visible, 2 of the sherds are possibly slightly burnt

All these sherds probably come from the same vessel.

C. Indeterminate sherds, no date (3 RF, 3 sherds, 18 g)

Final phase 31, 1539–c.1550 (P.ph. 576):

RF 1992, body sherd, 2 g, unglazed, pale grey, with a pale pink external surface

RF 1995, body sherd, 7 g, as *RF 1992*

RF 1996, unidentified, body sherd, 9 g, as *RF 1992*

All three sherds probably come from the same vessel. The fabric is hard, but not vitrified, i.e. not stoneware.

PART 5

18.iv. IMPORTED MEDIEVAL POTTERY

by the late JOHN HURST

Three sherds of Spanish medieval pottery were found, all residual in much later deposits.

1. Probably from the shoulder of a jug or vase, with the typical Islamic type of interlace foliage.[1] This must be Spanish and from the earlier Andalusian Malaga kilns, not fifteenth-century Valencian. The date should be fourteenth-century, but the type lasts throughout the fifteenth century. Final phase 36, *c.*1750–*c.*1775 (P.ph. 298): *RF 636*.
2. Spanish ?olive jar. Final phase 37B, 1800–50 (P.ph. 352): *RF 1645*.
3. Probably from a large dish rather than a bowl. Mature Valencian Lustreware, datable 1425–75, although small and abraded.[2] The fabric should be more pink in the core, but it is certainly too hard for delft. The outside is tin glaze and I think there are patches of both lustre and blue which have dripped on. Final phase 41, 1920–37 (P.ph. 727): *RF 2571*.

A single unstratified sherd of probable Weser ware was also found.

4. The glaze has partly flaked off: the brown is rather dark and the green rather pale, so not typical, but from the pink fabric and the knife trimming the sherd must be Weser ware, 1575–1625. It cannot be Dutch or Rhenish as the fabric would be red. The only slight doubt is seventeenth-century Staffordshire but the green precludes this. Unstratified: No *RF*.

[1] For parallels, see Hurst 1977, esp. 83, No. 13.
[2] Cf. Hurst 1977.

PART 5

18.v. STONEWARE

by ROBIN HILDYARD

For late medieval stoneware sherds, see above.[1]

1. German (Rhenish) sixteenth and seventeenth century[2]

Sixteenth or seventeenth century

Final phase 30, *c.*1500–39 (P.ph. 544b): *RF 582*

Final phase 31, 1539–*c.*1550 (P.ph. 249): *RF 1965*; (P.ph. 563): *RF 501*; *RF 550*

Final phase 32, *c.*1550–1600 (P.ph. 564): *RF 500*; *RF 1853*; (P.ph. 566): *RF 1848*

Final phase 33, 1600–50 (P.ph. 547): *RF 1967*

Final phase 35, *c.*1725–*c.*1750 (P.ph. 65): *RF 540*; (P.ph. 286): *RF 1882*

Final phase 37B, 1800–50 (P.ph. 720): *RF 546*; (P.ph. 721): *RF 1706*; *RF 1717*; (P.ph. 723): *RF 1642*; *RF 1722*

Final phase 38, 1850–80 (P.ph. 375): *RF 1438*; (P.ph. 382): *RF 1576*; (P.ph. 621): *RF 1685*; (P.ph. 725): *RF 1253*; *RF 1698*

Final phase 40, 1900–20 (P.ph. 655): *RF 1059*

Final phase 45, 1970–78 (P.ph. 461): *RF 1080*, could be Siegburg with slight ash glaze; *RF 1672*

Unstratified: *RF 1958*

Probably German, date uncertain

Final phase 31–2, 1539–1600 (P.ph. 527): *RF 655*; *RF 656*

Final phase 33, 1600–50 (P.ph. 583): *RF 693*

Final phase 37A–7B, *c.*1775–1850 (P.ph. 637): *RF 1317*

Final phase 37B, 1800–50 (P.ph. 315): *RF 1111*

Final phase 38, 1850–80 (P.ph. 374): *RF 1267*; (P.ph. 383): *RF 1086*

Final phase 46, 1978–82 (P.ph. 467): *RF 1087*

Bartmann jugs

Final phase 32, *c.*1550–1600 (P.ph. 564): *RF 1868*

Final phase 35–6, *c.*1725–*c.*1775 (P.ph. 589): *RF 1923*

Final phase 35–7A, *c.*1725–1800 (P.ph. 630): *RF 1858*; *RF 1998*

Final phase 36–7B, *c.*1750–1850 (P.ph. 590): *RF 1679*; *RF 1680*; *RF 1841*; (P.ph. 717): *RF 1764*

Final phase 37B, 1800–50 (P.ph. 610): *RF 1911*; (P.ph. 720): *RF 1789*

2. Cologne/Frechen

Final phase 31, 1539–*c.*1550 (P.ph. 248): *RF 802*, 16th–17th cent.

Final phase 33–5, 1600–*c.*1750 (P.ph. 222): *RF 639*, probably 16th–17th cent.

Final phase 37B, 1800–50 (P.ph. 351): *RF 1237*, mid-16th cent., probably large globular mug; (P.ph. 721): *RF 547*, probably 16th–17th cent.

Final phase 38, 1850–80 (P.ph. 364): *RF 1031*, mid-16th-cent. Bartmann; (P.ph. 642): *RF 554*, 16th cent.

Final phase 42, 1937–40 (P.ph. 729): *RF 1234*, 16th–17th cent.

Final phase 46, 1978–82 (P.ph. 112): *RF 1025*, possible Bartmann, head medallion mid-16th cent. (cf. *RF 1031*).

Unstratified: *RF 786*, probably 16th cent.

[1] pp. 62–3.
[2] The standard work on the subject of German stoneware is Gaimster 1997.

3. Frechen

Final phase 35, *c.*1725–*c.*1750 (P.ph. 715): *RF 593*, 17th-cent. Bartmann medallion.

Final phase 36–7B, *c.*1750–1850 (P.ph. 590): *RF 1681*, early 17th cent. Bartmann; *RF 1682*, early 17th cent. Bartmann.

Final phase 38, 1850–80 (P.ph. 382): *RF 1051*, second half 17th cent. Bartmann; *RF 1057*, 17th cent., probably Bartmann.

Final phase 41, 1920–37 (P.ph. 727): *RF 1196*, late 17th/early 18th cent. Impressed stylized masks occur at this late period; *RF 1259*, 17th cent., probably part of armorial medallion; *RF 1260*, 17th cent., probably Bartmann.

Final phase 43–5, 1940–78 (P.ph. 105): *RF 1081*, last quarter 16th cent. Could be Raeren. Base of globular mug or jug.

4. Raeren beer mugs, *c.* AD 1500

Final phase 31, 1539–*c.*1550 (P.ph. 563): *RF 1917*

Final phase 32, *c.*1550–1600 (P.ph. 564): *RF 1756*; *RF 1855*; *RF 1920*; (P.ph. 565): *RF 1846*; (P.ph. 566): *RF 1863*

Final phase 32–3, *c.*1550–1650 (P.ph. 569): *RF 1927*

Final phase 33, 1600–50 (P.ph. 574): *RF 1926*

Final phase 35, *c.*1725–*c.*1750 (P.ph. 286): *RF 1881*; (P.ph. 287): *RF 1948*; *RF 1908*

Final phase 36, *c.*1750–*c.*1775 (P.ph. 325): *RF 1748*

Final phase 36–7B, *c.*1750–1850 (P.ph. 590): *RF 1678*

Final phase 37B, 1800–0 (P.ph. 358): *RF 1539*; (P.ph. 723): *RF 1721*

Final phase 38, 1850–80 (P.ph. 725): *RF 1699*

Final phase 41, 1920–37 (P.ph. 727): *RF 1603*, handle; *RF 1614*

5. Rhineland

Final phase 35, *c.*1725–*c.*1750 (P.ph. 593): *RF 1919*, 16th cent., probably.

Final phase 41, 1920–37 (P.ph. 727): *RF 1599*, late 16th cent.

6. Westerwald

Final phase 36–7B, *c.*1750–1850 (P.ph. 590): *RF 1680*

Final phase 38, 1850–80 (P.ph. 346): *RF 1486*; *RF 1750*

Final phase 43–5, 1940–78 (P.ph. 104): *RF 1005*, last quarter 17th cent.

7. English: London

Final phase 37B, 1800–50 (P.ph. 315): *RF 1104*, base of jar?; *RF 1105*, 18th–19th cent.; *RF 1110*, 18th–19th cent.; (P.ph. 346): *RF 1250*, 18th cent., possibly quart mug.

Final phase 38, 1850–80 (P.ph. 364): *RF 1030*, probably 18th cent.; (P.ph. 725): *RF 1282*, probably 18th-cent. spirit jar.

Final phase 39–40, 1880–1920 (P.ph. 87): *RF 1329*, late 18th-cent. rim of globular or cylindrical jar (could be mid-19th cent.).

Final phase 42, 1937–40 (P.ph. 436): *RF 1089*, 18th–19th cent.

Final phase 44, 1960–70 (P.ph. 672): *RF 1165*, probably 19th cent.; (P.ph. 733): *RF 1004*, probably London, Bristol-glazed ginger beer bottle. Post 1892 (crown cork invented 1892).

Final phase 43–5, 1940–78 (P.ph. 104): *RF 1008*, probably 18th cent.

Eighteenth-century London ale mugs

Final phase 37A, *c.*1775–1800 (P.ph. 605): *RF 1738*

Final phase 37A–7B, *c.*1775–1850 (P.ph. 70): *RF 1773*; (P.ph. 331): *RF 1551*; (P.ph. 332): *RF 1943*

Final phase 37B, 1800–50 (P.ph. 721): *RF 1714*; *RF 1730*

Final phase 38, 1850–80 (P.ph. 78): *RF 1768*; (P.ph. 346): *RF 1423*; (P.ph. 374): *RF 1531*; (P.ph. 382): *RF 1446*; (P.ph. 725): *RF 1284*

Final phase 40, 1900–20 (P.ph. 411): *RF 1461*

Final phase 41, 1920–37 (P.ph. 727): *RF 1598*

Final phase 42, 1937–40 (P.ph. 436): *RF 1475*; (P.ph. 729): *RF 1621*

Final phase 44, 1960–70 (P.ph. 672): *RF 1454*

8. English?

Final phase 42, 1937–40 (P.ph. 436): *RF 1091*, late 19th-/early 20th-cent. salt jar.

9. English: Derbyshire

Final phase 40, 1900–20 (P.ph. 655): *RF 1157*, 19th-cent., bottle?

Final phase 41, 1920–37 (P.ph. 727): *RF 1216*, 19th cent., second quarter. Ginger beer bottle base. Mark could be J. BOURNE - DENBY.

Final phase 41–2, 1920–40 (P.ph. 661): *RF 1010*, 19th cent. Ginger beer.

Final phase 42, 1937–40 (P.ph. 97): *RF 1261*, late 19th cent. Ginger beer.

10. English: Nottingham

Final phase 36–7A, *c.*1750–1800 (P.ph. 329): *RF 1667*, plain beer mug 18th cent.

Final phase 37B, 1800–50 (P.ph. 721): *RF 1765*, plain beer mug 18th cent.

Final phase 38, 1850–80 (P.ph. 725): *RF 1283*, 18th cent.

Final phase 39–40, 1880–1920 (P.ph. 87): *RF 1328*, late 18th-/early 19th-cent. jar or mug. Could be Derbyshire.

Final phase 42, 1937–40 (P.ph. 96): *RF 1585*, 18th cent. Marble, or from rattle; (P.ph. 420): *RF 2573*

11. English: Staffordshire

Final phase 37A, *c.*1775–1800 (P.ph. 605): *RF 1573*, early 18th-cent. small cup handle.

Final phase 38, 1850–80 (P.ph. 374): *RF 1264*, 1700–10. Base of 'capuchine' (coffee cup).

PART 5

18.vi. TIN-GLAZED POTTERY

by MICHAEL ARCHER

Final phase 31, 1539–*c.*1550 (P.ph. 241): *RF 1977*, probably mid-17th cent. Drug jar.

Final phase 37A, *c.*1775–1800 (P.ph. 604): *RF 1635*, date 1680, Bleu Nevers (Persan); *RF 1849*, 17th cent. (second half). Lip of small mug or cup.

Final phase 37B, 1800–50 (P.ph. 599): *RF 1495*, early 17th cent. European or Netherlands. Small drug jar; (P.ph. 616): *RF 1500*, late 17th cent. Probably cup; (P.ph. 721): *RF 1759*, 18th cent. Plate.

Final phase 38, 1850–80 (P.ph. 382): *RF 1123*, mid-17th cent. Probably European, could be Dutch. Part of charger or large dish; (P.ph. 622): *RF 1501*, date 1650. European or Netherlands. Part of dish.

Final phase 38–9, 1850–1900 (P.ph. 643): *RF 1316*, late 17th cent.? Continental.

Final phase 40, 1900–20 (P.ph. 432): *RF 1545*, date 1730–40. Bristol. Chinese figure from bowl.

Final phase 41, 1920–37 (P.ph. 432): *RF 1668*, date 1730–40. Could be Dutch. Possibly coffee cup. Lead glaze overlies tin glaze (known to the Dutch as *kwaart*).

Final phase 42, 1937–40 (P.ph. 97): *RF 1262*, late 17th or early 18th cent. Foot of jug or storage jar; (P.ph. 403): *RF 1439*, date 17th cent. Ointment pot; (P.ph. 728): *RF 1620*, 18th cent. Dish?

Final phase 44, 1960–70 (P.ph. 454): *RF 1062*, late 17th or early 18th cent. Possibly edge of bowl.

Final phase 43–6, 1940–82 (P.ph. 673): *RF 1141*, mid-18th cent. Probably plate.

Other fragments were seen but not worth comment.

PART 5

18.vii. WHITE SALT-GLAZED STONEWARE

by S. J. GREEN

The fragments of white salt-glazed stoneware from the St Albans Abbey excavations represent a range of plain table-wares such as thrown and turned bowls, tankards, and jugs and moulded saucers and plates, all typical of Stoke-on-Trent products made between 1730 and 1770. The majority of sherds belong to vessels made from white clay imported from Dorset or Devon but there are also several fragments of white-dipped salt-glazed stoneware which are distinguished from the white variety by an off-white coloured body which is coated with an engobe of white-firing clay.

Final phase 35, *c.*1725–*c.*1750 (P.ph. 286): *RF 917*, handle of a white-dipped hollow-ware vessel, *c.*1720–30; (P.ph. 287): *RF 1892*, part of a small teabowl or similar, white salt-glaze stoneware, *c.*1730–70; *RF 1945*, same description as *RF 1892* (same vessel).

Final phase 37A, *c.*1775–1800 (P.ph. 604): *RF 1491*, handle fragment of a tankard or similar, white-dipped salt-glaze stoneware, *c.*1720–30; *RF 1842*, part of a small handle of rod section, white salt-glaze stoneware, *c.*1730–70; (P.ph. 605): *RF 918*, rim fragment of a teabowl or similar, white salt-glaze stoneware, *c.*1730–70; *RF 1631*, fragment of a pedestal base of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70; *RF 1745*, two fragments of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70 and rim fragment of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70.

Final phase 37A–7B, *c.*1775–1850 (P.ph. 331): *RF 2548*, body sherd; *RF 2549*, body sherd; (P.ph. 603): *RF 1497*, base/wall junction of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70.

Final phase 37B, 1800–50 (P.ph. 315): *RF 2554*, body sherd; *RF 2555*, plate rim; *RF 2556*, body sherd; (P.ph. 346): *RF 1245*, part of a hollow-ware vessel, fine turned grooves on exterior, white salt-glaze stoneware, *c.*1730–70; *RF 1483*, neck fragment of a hollow-ware vessel, turned grooves on exterior, white salt-glaze stoneware, *c.*1730–70; *RF 1543*, rim fragment of a plate, description of moulded design similar to 1451, white salt-glaze stoneware, *c.*1730–70; *RF 1544*, fragment of a hollow-ware vessel, creamware, late 18th cent.; (P.ph. 352): *RF 1644*, base fragment, white salt-glaze stoneware, *c.*1730–70; (P.ph. 354): *RF 1451*, rim fragment of a plate or similar, moulded design of feather like fronds forming part of a blank panel with moulded squares and stars to the left, white salt-glaze stoneware, *c.*1730–70; *RF 1452*, rim fragment of a teabowl or similar, white salt-glaze stoneware, *c.*1730–70; *RF 1453*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70; (P.ph. 610): *RF 1684*, part of a hollow-ware vessel, probably a tankard, white-dipped salt-glaze stoneware, *c.*1720–30; (P.ph. 615): *RF 1895*, rim fragment of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70; (P.ph. 721): *RF 1707*, base/wall junction of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70; *RF 1708*, fragment of a hollow-ware vessel, turned grooves on exterior, white salt-glaze stoneware, *c.*1730–70; *RF 1709*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70; *RF 1761*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70; *RF 1766*, wall/rim fragment of a plate, moulded square-and-dot design on rim, white salt-glaze stoneware, *c.*1730–70; (P.ph. 723): *RF 1719*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70.

Final phase 37B–8, 1800–80 (P.ph. 368): *RF 1470*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70; *RF 1471*, rim fragment of a hollow-ware vessel, folded-over rim, white salt-glaze stoneware, *c.*1730–70.

Final phase 38, 1850–80 (P.ph. 78): *RF 1769*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70; (P.ph. 360): *RF 1038*, part of a hollow-ware vessel, turned bands on shoulder, white salt-glaze stoneware, *c.*1730–70; (P.ph. 364): *RF 1029*, part of a small hollow-ware vessel, white-dipped salt-glaze stoneware, *c.*1720–30; *RF 1019*, rim fragment of a bowl, white salt-glaze stoneware, *c.*1730–70; (P.ph. 374): *RF 1265*, part of a hollow-ware vessel, white salt-glaze stoneware, *c.*1730–70; *RF 1266*, rim fragment of a large dish



or plate, edge with moulded rope border, white salt-glaze stoneware, *c*.1730–70; *RF 1269*, base fragment, white salt-glaze stoneware, *c*.1730–70; *RF 1270*, base fragment, white salt-glaze stoneware, *c*.1730–70; *RF 1535*, rim fragment of a hollow-ware vessel, turned grooves below exterior rim, white salt-glaze stoneware, *c*.1730–70; (P.ph. 381): *RF 1469*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; (P.ph. 382): *RF 1124*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; *RF 1125*, base/wall junction of a bowl or similar, white-dipped salt-glaze stoneware, *c*.1720–30; *RF 1126*, base/wall junction of a plate or similar, white salt-glaze stoneware, *c*.1730–70; *RF 1127*, base fragment, white salt-glaze stoneware, *c*.1730–70; *RF 1442*, base fragment, white salt-glaze stoneware, *c*.1730–70; *RF 1444*, fragment of a hollow-ware vessel, white-dipped salt-glaze stoneware, *c*.1720–30; (P.ph. 383): *RF 1085*, rim sherd of a bowl or similar, white salt-glaze stoneware, *c*.1730–70; (P.ph. 639): *RF 1153*, base fragment, white salt-glaze stoneware, *c*.1730–70; (P.ph. 725): *RF 1288*, rim fragment of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; *RF 1289*, part of a hollow-ware vessel, turned grooves and bands on exterior, white salt-glaze stoneware, *c*.1730–70; *RF 1290*, base/wall junction of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; *RF 1291*, fragment of a hollow-ware vessel, fine turned grooves on exterior, white salt-glaze stoneware, *c*.1730–70; *RF 1297*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; *RF 1695*, fragment of a hollow-ware vessel, turned grooves on shoulder, white salt-glaze stoneware, *c*.1730–70; *RF 2562*, body sherd.

Final phase 39, 1880–1900 (P.ph. 81): *RF 1027*, rim fragment of a large dish or plate, surface with moulded basket design, white salt-glaze stoneware, *c*.1730–70; (P.ph. 651): *RF 1308*, fragment of a hollow-ware vessel, turned grooves on exterior, white salt-glaze stoneware, *c*.1730–70.

Final phase 38–40, 1850–1920 (P.ph. 726): *RF 1279*, part of a large hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70.

Final phase 40, 1900–20 (P.ph. 432): *RF 1456*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; *RF 1654*, fragment of a hollow-ware vessel, turned groove on exterior, white salt-glaze stoneware, *c*.1730–70; (P.ph. 655): *RF 1158*, base/wall junction of a saucer or similar, white salt-glaze stoneware, *c*.1730–70.

Final phase 41, 1920–37 (P.ph. 432): *RF 1478*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; (P.ph. 660): *RF 1151*, rim fragment of a bowl or similar, turned groove just below exterior rim, white salt-glaze stoneware, *c*.1730–70; (P.ph. 727): *RF 1276*, base/wall junction of a large hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; *RF 1601*, base/wall-fragment of a saucer or similar, white salt-glaze stoneware, *c*.1730–70.

Final phase 42, 1937–40 (P.ph. 96): *RF 1586*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; *RF 1326*, part of a hollow-ware vessel, turned grooves on exterior, white salt-glaze stoneware, *c*.1730–70; (P.ph. 97): *RF 1074*, rim fragment of a plate or bowl, turned grooves close to rim, white salt-glaze stoneware, *c*.1730–70; (P.ph. 418): *RF 2307*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70. Loose fragments. Part of a hollow-ware vessel, turned grooves on exterior, white salt-glaze stoneware, *c*.1730–70; (P.ph. 728): *RF 1619*, part of a large cylindrical hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; *RF 1736*, fragment of a shallow bowl with flanged rim, white salt-glaze stoneware, *c*.1730–70; *RF 2574*, body sherd.

Final phase 43, 1940–60 (P.ph. 465): *RF 1018*, hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70; (P.ph. 730): *RF 766*, hollow-ware vessel, fine turned grooves on surface, white salt-glaze stoneware, *c*.1730–70; *RF 1275*, base fragment, white salt-glaze stoneware, *c*.1730–70; *RF 1597*, rim fragment of a piece of flat-ware, white salt-glaze stoneware, *c*.1730–70; *RF 1650*, part of a large hollow-ware vessel, white salt-glaze stoneware, *c*.1730––70.

Final phase 44, 1960–70 (P.ph. 108): *RF 1687*, fragment of a hollow-ware vessel, white salt-glaze stoneware, *c*.1730–70.

Final phase 43–5, 1940–78 (P.ph. 104): *RF 1021*, rim fragment of a small ointment pot or similar, rolled-rim, fine turned grooves on exterior, white salt-glaze stoneware, *c*.1730–70; *RF 1076*, part of a hollow-ware vessel, fine turned grooves on exterior, white salt-glaze stoneware, *c*.1730–70.

Final phase 45, 1970–8 (P.ph. 462): *RF 1095*, part of a hollow-ware vessel, fine turned grooves on surface, white salt-glaze stoneware, *c*.1730–70.

Final phase 45–6, 1970–82 (P.ph. 734): *RF 1064*, fragment of a hollow-ware vessel with stump of handle terminal on edge, white salt-glaze stoneware, *c*.1730–70.

PART 5

19. CLAY TOBACCO PIPES

by D. R. ATKINSON[1]

Introduction

Much of the material examined is very fragmentary, mostly in the form of plain unmarked stems which cannot be dated closely, except perhaps those pieces from the bowl end of the stem during the period *c.*1680–1720, which exhibit some features that make dating fairly certain. The bulk of the pipes cover the time from Charles II to George I inclusive and there are a fair number of dateable bowls. Of the first half of the seventeenth century there is very little and the same applies to the second half of the eighteenth century. There is a scattering of pieces of the first half of the nineteenth century, but almost nothing after *c.*1860.

Seventeenth century

Bowls are all of the standard London and south-eastern types.[2] Of the very early pipes, *c.*1580–1620, no examples appear at all. One spur and one heel example may be dated by size to *c.*1640 (Illus. 5.19.1, nos l–2) and two or three similar to *c.*1650 (Illus. 5.19.1, nos 3–5). After this there are a few spur bowls of the period *c.*1660–80, the larger the later (Illus. 5.19.1, nos 6–8).

Several late seventeenth-century bowls appear, with spur, small flat projecting base, or heel, *c.*1680–1700 (Illus. 5.19.1, No. 9; Illus. 5.19.2, nos 10–12). There is one more upright spur bowl which is polished, with a thick stem, *c.*1690–1720 (Illus. 5.19.2, No. 13). None of these pipes are marked, though the last mentioned is more of the south-western type which might have had a name or mark impressed on the stem near the bowl.

The very large quantity of plain stems includes a good proportion of seventeenth-century ones. The only guide to dating these is the stem bore, which was much wider in the seventeenth century and, by chance, conveniently, became much narrower on pipes after *c.*1700. This was probably because bowls became much larger around the turn of the century due to tobacco becoming much cheaper, and stems became longer, possibly because a longer smoke caused the pipe to become hotter and a longer stem combined with a narrower bore (which was now necessary anyway) prevented the tobacco burning too quickly. Thus the thick stems with wide bore belong to the late seventeenth-century pipes as the stems undoubtedly became thicker with every decade after *c.*1660. Thinner stems with a wide bore are usually earlier seventeenth century, but wide-bored thin stems which taper towards one end may have come from the end part of the stem of later seventeenth-century pipes. Mouthpieces are easily identified as the end is smoothed around the bore-hole.

None of the seventeenth-century stems examined shows any form of decoration or marking, though one has traces near one end of a milled band running around the stem. This was sometimes applied either for decorative purposes or to indicate the best point of balance for the smoker to hold the pipe.

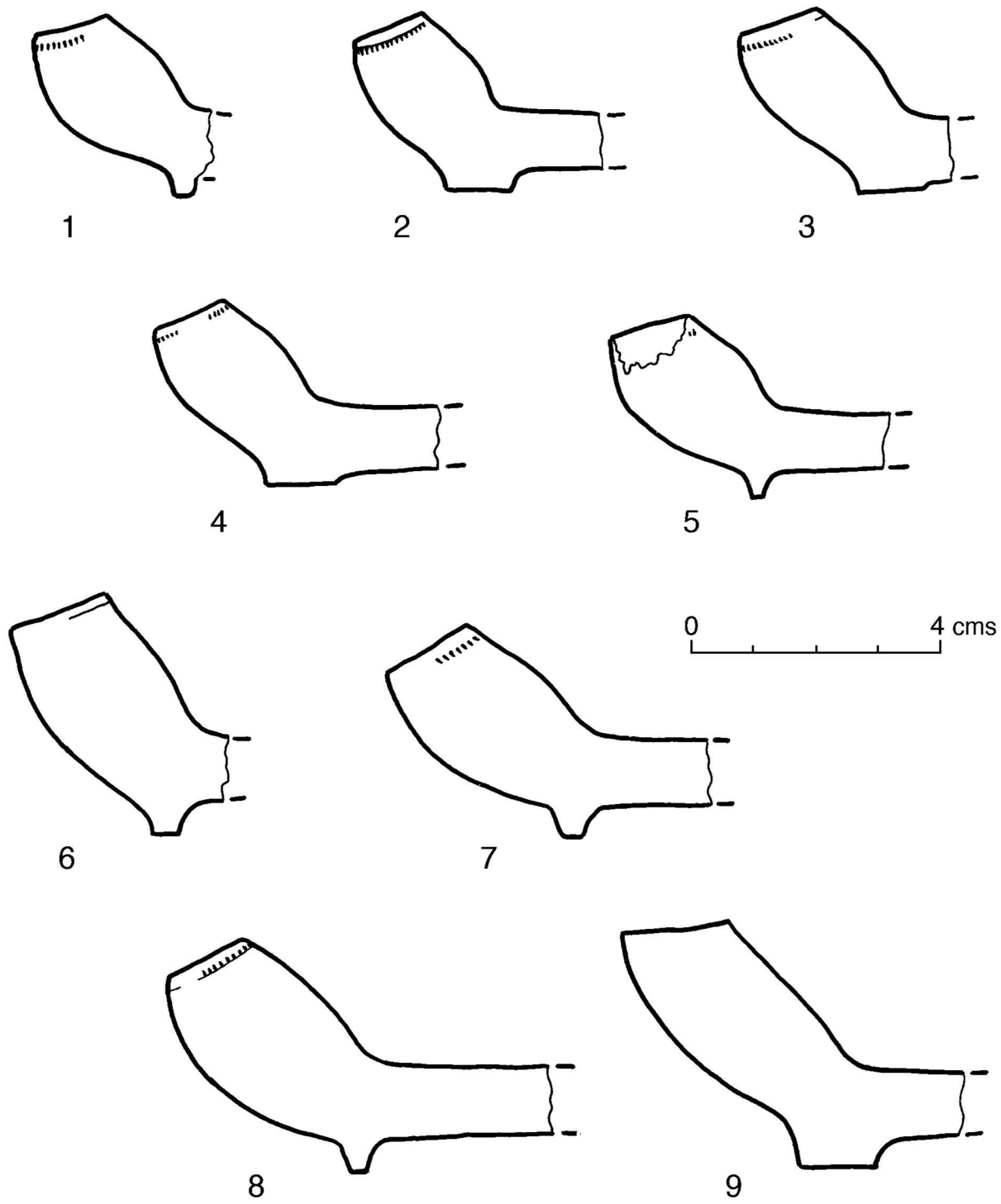
All the seventeenth-century bowls have milling round the lip save one (a poorly finished example on which the upper mould mark has not been trimmed off, typical of a 'country' maker) until *c.*1690, when milling began to be discontinued. None of the late seventeenth-century bowls has moulded initials such as are found on the type in London, Kent and Sussex. One late seventeenth- to early eighteenth-century spur type is known from St Albans with the initials W/R (for William Reynolds) but none appears in the material under consideration (although one heel type by this maker is present – see below).

Eighteenth century

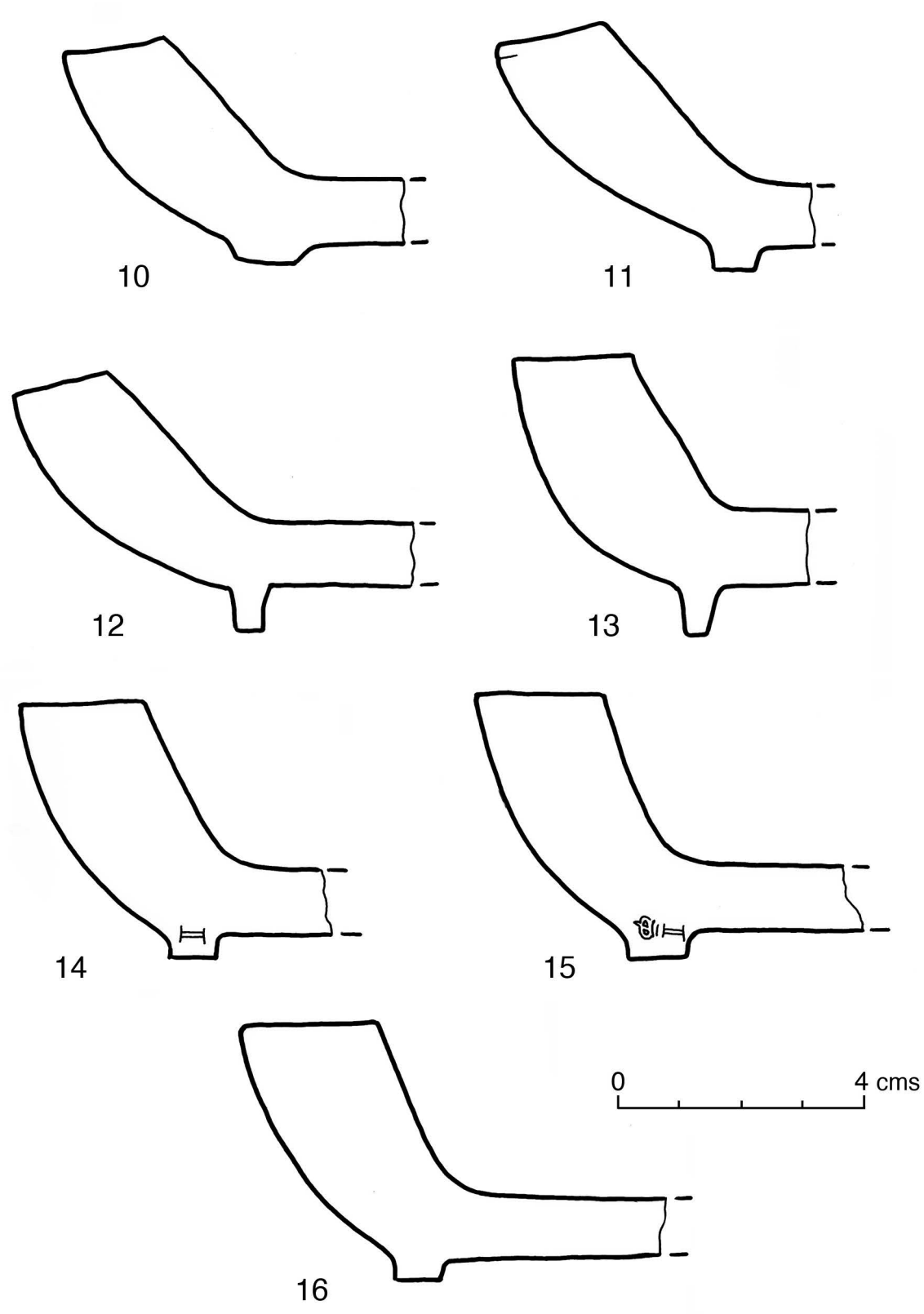
Pipes of the first half of the eighteenth century form a large proportion of the material. These had thick stems at the end near the bowl and a much narrower bore than the pipes of the pre-1700 period. The large number of thin stems with narrow bore are virtually impossible to date closely as the type is found right through from *c.*1760–1880 and even the thin end of stems of the earlier eighteenth-century pipes can appear identical. However, the thin eighteenth-century

[1] This report was originally written by the late D. R. Atkinson in 1978 but was revised and updated by D. A. Higgins in May 2012 and reviewed again in March 2023.

[2] Reference works for pipe material of the types described are as follows: Oswald 1975; Atkinson and Oswald 1969; Atkinson 1977; Freeman 1970.



Illus. 5.19.1. Clay pipes Nos. 1–9 (1:1) These illustrations show the different bowl types and other pieces of particular interest for dating purposes.



Illus. 5.19.2. Clay pipes Nos. 10–16 (1:1).

stems are usually much rounder in section than many of the nineteenth-century stems, which are frequently less carefully finished off.

A fair quantity of the large upright bowls with gently curving sides and round, flat rims so typical of the early eighteenth century in the south-east of England appear here, many with initials moulded at the sides of the base (Illus. 5.19.2, nos 14–16; Illus. 5.19.3, nos 17–18). At least three makers are represented, all of whom appear to have used the Holywell Hill kiln, excavated in *c*.1970. They are represented by pipes marked W/H for William Hunt (working in 1690; d.1731; Illus. 5.19.3, No. 17), W/R for William Reynolds (working in 1713–14; Illus. 5.19.3, No. 18) and I/W for John Wilsher or Wiltshire (working 1711–26; Illus. 5.19.2, nos 14–15). Examples with crowned I/W (Illus. 5.19.2, No. 15) may be the products of John Wiltshire II, apprenticed in 1725 and probably working in the 1730s. The purpose of the crowns over the initials, which are common in the London area from *c*.1690, may have been to distinguish a son's pipes from his father's where the two had the same initials, which was often the case. This would follow the ruling in Holland of the Dutch guild a century earlier, who ordered crowns to be used in marks where they were of the same pattern as that already in use by another maker. No other reason has yet been satisfactorily put forward for the use of the crowns in English marks. They ceased to appear after *c*.1760.

St Albans appears to have been one of the principal pipe making centres in the county during the seventeenth and eighteenth centuries, with the largest number of documented makers having been based there.[3] Archaeological finds confirm this impression, with excavated examples from Hemel Hempstead, some six miles to the west, including quite a number that can be attributed to the St Alban's makers, including W/H and I/W marks similar to those discussed above.[4]

Pipes of the second half of the eighteenth century are almost absent from the material examined, and there are no specimens of the decorated 'armorial' type at all. One spur fragment, with part of the bowl and no initials is the only one which may be dated with certainty to the second half of the eighteenth century (Illus. 5.19.3, No. 19). The four pieces with initials W/W moulded could be late eighteenth-century but as none have the bowl and the type was in vogue from *c*.1780–1820 it is impossible to be more exact in the absence of documentary evidence from this locality as to who this maker was. Similar pipes marked WW (possibly William Walker of Ware) have been recovered from excavations at Hemel Hempstead.[5]

[3] Oswald 1975, 174.
[4] Higgins 1985, 348.
[5] Higgins 1985, Figs. 92–3.

Nineteenth century

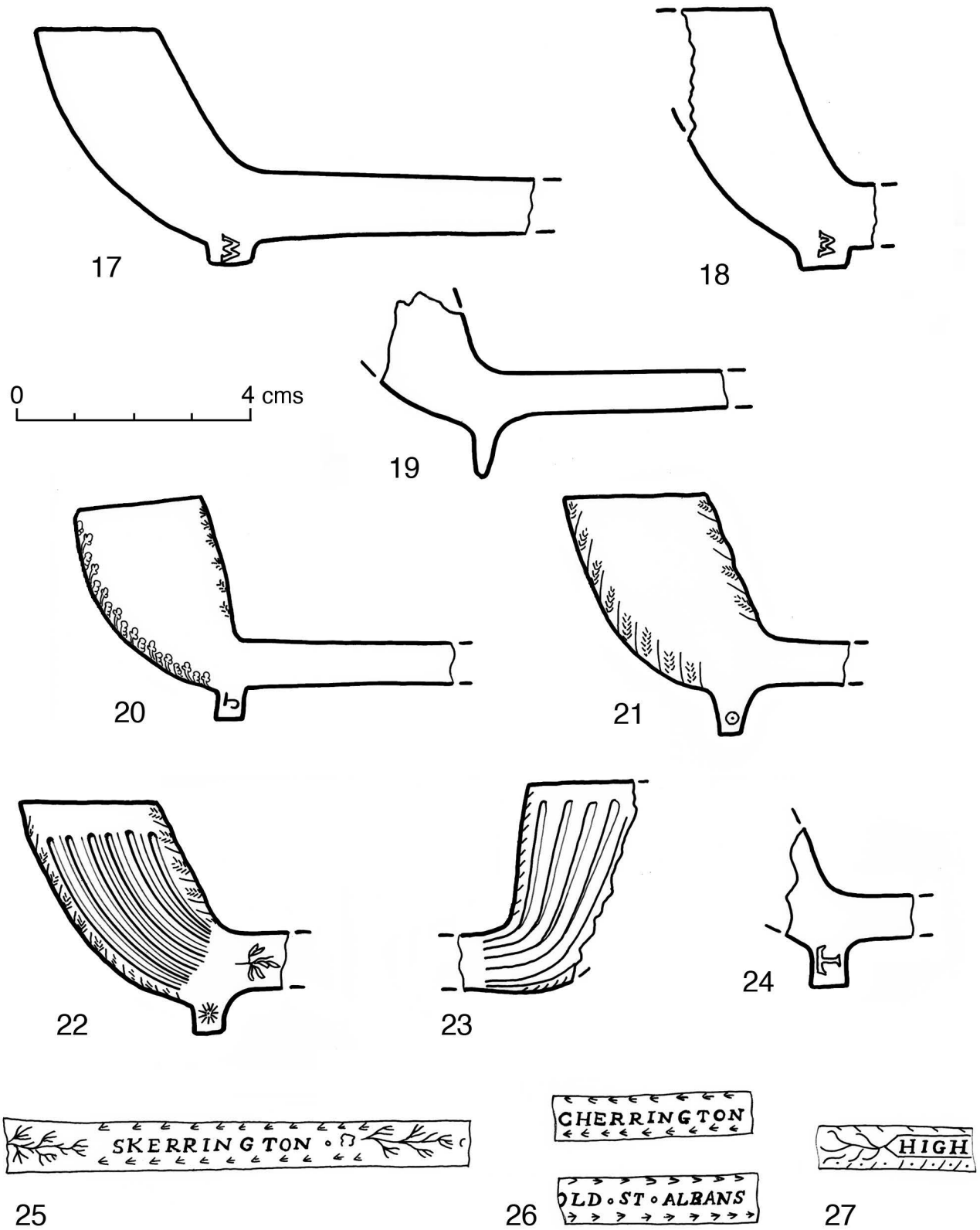
A sprinkling of nineteenth-century stems and bowls appears but most pieces are very fragmentary. The bowls are either decorated up the mould lines with leaves, leaves and acorns, or leaves and fluting, all common south-eastern designs in this century (Illus. 5.19.3, nos 20–3). The heels either have initials (six different sets with only one identified maker) or a small symbol. One rather crude fluted bowl had no heel or spur, which dates it to after *c*.1850 (Illus. 5.19.3, No. 23), but otherwise all the nineteenth-century material covers the first half of the century only.

A few stems show traces of leaf decoration. Others with the inscription ARNOLD.ST.ALBANS/SKERRINGTON (or CHERRINGTON) date from *c*.1839, when a pipe maker named David Arnold is documented (Illus. 5.19.3, nos 25–6). These pipes were probably made by the David Arnold, born *c*.1795 at Ayott St Lawrence, who is recorded as the St Albans Town Hall keeper in the census returns from 1841 onwards. If so, then he is likely to have been pipe making from *c*.1820–40. The design of these stems, with small relief letters enclosed by leaves and arrows, is exactly the same as that used by John Goldsmith at Brighton (1826–46) and shows that makers were obtaining their moulds at this time (if not before) from the same mould-maker, who must have issued standard 'patterns' which could be ordered with the required lettering engraved along the stem. The fluted bowl (Illus. 5.19.3, No. 22) came from one of these pipes. Unfortunately none of the pipe mould-makers' advertising literature has survived for this early period, though price lists and even catalogues are known for the period *c*.1875–1914.

One stem, with another 'standard' pattern of decoration common in London *c*.1840, has part of a word beginning with 'HIGH' on one side but is not identifiable (Illus. 5.19.3, No. 27).

The only recognized nineteenth-century initials are those of John Corley, who was born at St Alban's in 1819 and is recorded working as a pipe maker there from at least 1841 until his death in 1894. He is recorded in the census returns at various addresses during the 1840s–60s, when he may have been working on his own account, and then during the 1880s–90s in Albert Road, where he was most likely working for George Kiff. Corley made the pipe decorated with leaves and acorns and J/C on the heel (Illus. 5.19.3, No. 20). Another variant marked J/C with leaves and acorns on the front seam but with a plain seam facing the smoker example can be seen in St Albans museum.[6] The pipes marked J/C are most likely to date from before Corley moved to Albert Road, i.e., *c*.1840–75.

[6] Higgins 1985, Fig. 137.



Illus. 5.19.3. Clay pipes Nos. 17–27 (1:1).

Six examples with T/B on the heel of what were fluted bowls (*c.*1830–40) indicates local manufacture but no maker with these initials is recorded at present at St Albans (Illus. 5.19.3, No. 24). Similar pipes marked T/B have also been found at Hemel Hempstead,[7] while complete examples of two different styles of fluted T/B bowl can be seen in St Albans Museum.[8] By chance one heel of *c.*1830–40 has the initials W/H which match those of William Hunt (early eighteenth century) but the pipes cannot possibly be confused. Once again there are parallels from both Hemel Hempstead and in St Albans Museum.[9] As noted above, there must have been a maker with the initials W/W working in the locality around 1800 as four examples of these initials appear on small, square flat-based heels. The other unidentified marks are both single examples of *c.*1830–40, one reading W/C and the other H/I.

The only pipe which may be dated to the second half of the nineteenth century is that shown as Illus. 5.19.3, No. 23. The workmanship is crude and the finish poor, while the pipe was spurless. These did not appear until after *c.*1850 but when they did they became increasingly popular and tended to have short stems and shaped mouthpieces. They were probably intended for workmen and navvies who could conveniently carry them in the pocket.

Quantities and phasing of identified pipes

In the list below identified initials are given followed by the maker's name, the recorded dates of activity, the number of examples (ex.) found and the phasing of these examples.

There are no identified seventeenth-century pipes in the assemblage.

Eighteenth century

I.W. (John Wiltshire, 1711–26), 21 ex.

Final phase 34, 1650–*c.*1725 (P.ph. 584), 1 ex.

Final phase 35, *c.*1725–*c.*1750 (P.ph. 65), 1 ex.; (P.ph. 286), 1 ex.; (P.ph. 287), 1 ex.; (P.ph. 591), 1 ex.; (P.ph. 628), 1 ex.

Final phase 35–6, *c.*1725–*c.*1775 (P.ph. 589), 2 ex.

Final phase 36, *c.*1750–*c.*1775 (P.ph. 716), 1 ex.

Final phase 36–7A, *c.*1750–1800 (P.ph. 329), 3 ex.

Final phase 37A, *c.*1775–1800 (P.ph. 605), 2 ex.

Final phase 37B, 1800–50 (P.ph. 315), 1 ex.

Final phase 38, 1850–80 (P.ph. 382), 1 ex.; (P.ph. 725), 1 ex.

Final phase 38–9, 1850–1900 (P.ph. 647), 1 ex.

Final phase 42, 1937–40 (P.ph. 96), 1 ex.; (P.ph. 665), 1 ex.

Unstratified, 1 ex.

Crowned I.W.(possibly John Wiltshire II, (apprenticed in 1725)), 4 ex.

Final phase 35–6, *c.*1725–*c.*1775 (P.ph. 589), 1 ex.

Final phase 38, 1850–80 (P.ph. 725), 1 ex.

Final phase 42, 1937–40 (P.ph. 96), 1 ex.

Unstratified, 1 ex.

W.H. (William Hunt, 1690–1731, ?also possibly William Hunt II (apprenticed in 1726)), 6 ex.

Final phase 35–6, *c.*1725–*c.*1775 (P.ph. 589), 2 ex.

Final phase 36–7B, *c.*1750–1850 (P.ph. 294), 1 ex.

Final phase 37A–7B, *c.*1775–1850 (P.ph. 332), 1 ex.

Final phase 37B, 1800–50 (P.ph. 723), 1 ex.

Final phase 41, 1920–37 (P.ph. 660), 1 ex.

W.R. (William Reynolds, 1713–14), 1 ex.

Final phase 35–7A, *c.*1725–1800 (P.ph. 630), 1 ex.

NB. All the above appear to have used a kiln at Holywell Hill, St Albans, large numbers of their pipes being found in the excavation (1970).

W.W. (unknown maker. Possibly William Walker of Ware, but his recorded dates are too early (1745–58) for the style of the marked pipes, which are late eighteenth century). 4 ex.

Final phase 37B, 1800–50 (P.ph. 315), 1 ex.; (P.ph. 346), 1 ex.

Final phase 38, 1850–80 (P.ph. 725), 1 ex.

Final phase 41, 1920–37 (P.ph. 727), 1 ex.

[7] Higgins 1985, Figs. 94–5, and 115.
[8] Higgins 1985, Figs. 134–5.
[9] Higgins 1985, Figs. 88 and 133.

Nineteenth century

T.B. (unknown maker, *c.*1830–40), 6 ex.

Final phase 37B, 1800–50 (P.ph. 315), 1 ex.; (P.ph. 721), 1 ex.

Final phase 38, 1850–80 (P.ph. 346), 2 ex.; (P.ph. 725), 1 ex.

Final phase 41, 1920–37 (P.ph. 727), 1 ex.

H.I. (unknown maker, *c.*1830), 1 ex.

Final phase 36, *c.*1750–*c.*1775 (P.ph. 323), 1 ex.

J.C. (John Corley, working from at least 1841 until his death in 1894 but with a production date of *c.*1840–75 for his marked pipes being most likely), 1 ex.

Unstratified, 1 ex.

W.H. (unknown maker, *c.*1830–40), 1 ex.

Final phase 38, 1850–80 (P.ph. 648), 1 ex.

W.C. (unknown maker, *c.*1830–40), 1 ex.

Final phase 35–6, *c.*1725–*c.*1775 (P.ph. 598), 1 ex.

Arnold (David Arnold, 1839 (directory)), 3 ex. (stem or bowl)

Final phase 38, 1850–80 (P.ph. 386), 1 ex.; (P.ph. 622), 1 ex.[10]

Final phase 43–5, 1940–78 (P.ph. 104), 1 ex.

[10] The example from P.ph. 622 is a fluted bowl (Illus. 5.19.3, No. 22) attributed to Arnold by D. R. Atkinson, but which does not bear a maker's name.

PART 5

20. ANIMAL BONES

by PAM J. CRABTREE

Introduction

This report on the animal bone remains from the chapter house at St Albans Abbey is based on research that was carried out in the early 1980s. While the excavations of the chapter house provided a large faunal assemblage that included bones ranging in date from early Anglo-Saxon to post-medieval periods, the bulk of the animal bones were recovered from Anglo-Saxon contexts, especially Final phase 3 (5th–8th/9th centuries) and Final phase 4 (8th/9th cent.). A number of important changes have taken place in medieval zooarchaeology since the early 1980s. In particular, a much wider range of faunal assemblages from early and middle Anglo-Saxon sites have been published in the past 30 years, including the large Anglo-Saxon rural assemblages from Flixborough in Lincolnshire,[1] West Stow in Suffolk,[2] Brandon in Suffolk,[3] West Stow West,[4] and Wicken Bonhunt in Essex.[5] Substantial assemblages have also been published from the middle Anglo-Saxon emporium sites of Hamwic,[6] York,[7] London,[8] and Ipswich.[9] The publication of the faunal remains from these sites makes it possible to set the St Albans Abbey animal bone remains in a broader comparative context. In addition, the increasing use of personal computers for the recording and analysis of faunal remains makes it easier to compare assemblages from different archaeological features and time periods. This will be discussed in greater detail in the following section on materials and methods.

Materials and methods

The animal bones from the chapter house were identified in the summer of 1981, and an initial report was submitted in May 1983. Most of the recording was carried out in St Albans, but the birds, small mammals, and a few unusual specimens were identified at the then Faunal Remains Unit at the University of Southampton. The animal bones were recorded using the protocols that were then in use by the Ancient Monuments Laboratory.[10] However, since access to the AML computer system was not possible, the faunal remains were initially analysed manually. Measurements were recorded following the recommendations of von den Driesch using a Helios dial caliper and an osteometric board.[11] Withers' heights were calculated following the recommendations of von den Driesch and Boessneck.[12] Ageing data were recorded based on both dental eruption and wear[13] and on epiphyseal fusion of the long bones.[14] Traces of butchery and other bone modifications were also recorded.

To update this report for final publication, the data were all entered onto a PC using the FAUNA program, an update of the ANIMALS program.[15] Since the computer makes it easier to group and re-group data, the materials from Final phases 3 to 10, as well as the primary and upper fills of the east, west, and middle ditches were examined. Faunal remains which could not be assigned to a single Anglo-Saxon phase were excluded from further analysis. Rabbit bones were also excluded since they are likely to be intrusive and date from after the Norman Conquest.[16]

Composition of the Anglo-Saxon faunal assemblage

The species identified from all Anglo-Saxon phases (Final phases 3 to 10) are shown below in Tables 5.20.1-5.20.8. The largest faunal assemblages were recovered from Final phase 3 (Table 5.20.1) which is dated to the 5th–8th/9th centuries and Final phase 4 (Table 5.20.2) dated to the 8th/9th centuries. There are several striking features of the Anglo-Saxon faunal assemblages from St Albans Abbey. The first is the large number of pig remains. Pigs substantially outnumber both cattle

[1] Dobney *et al.* 2007.
[2] Crabtree 1990.
[3] Crabtree 2007; Crabtree and Campana 2015.
[4] Crabtree and Campana 2015.
[5] Crabtree 2012.
[6] Bourdillon and Coy 1977; Bourdillon and Coy 1980; Bourdillon 1988; Bourdillon 1994.
[7] O'Connor 1991; O'Connor 1994.
[8] West 1989; Rackham 1994; Rielly 2003.
[9] Crabtree 2012.
[10] Jones n.d.
[11] von den Driesch 1976.
[12] von den Driesch and Boessneck 1974.
[13] Grant 1975; Grant 1982.
[14] Silver 1969.
[15] Crabtree and Campana 1987; Campana 2010.
[16] Sykes 2007.

and caprines (sheep and goats) throughout the Anglo-Saxon period. The caprine bones that were identified to species[17] appear to be sheep, rather than goats, but only a small number of diagnostic fragments were recovered from the Anglo-Saxon features. A second striking feature is the substantial number of deer, especially roe deer. In addition to the deer remains, a small number of badger bones were recovered. A third interesting aspect is the small number of horse, dog, and cat bones.

The bird assemblages are dominated by the remains of domestic chickens and geese, along with small numbers of domestic ducks or mallards. The wild birds identified include the common crane which bred in East Anglia until about 1600 and has recently returned to the area. It is commonly found on Early and Middle Saxon sites in eastern England. Other birds identified include teal, pigeon, woodcock, golden plover, and rook or crow. The Final phase 3 remains also included a heavily concreted partial skeleton of a bird of prey which could not be identified to species (Table 5.20.1).

Table 5.20.1. St Albans Abbey chapter house, Final phase 3: animal species, number of bones identified

Cattle (*Bos taurus*)	138
Sheep (*Ovis aries*)	9
Sheep/goat	73
Pig (*Sus scrofa*)	528
Horse (*Equus caballus*)	1
Red deer (*Cervus elaphus*)	2
Roe deer (*Capreolus capreolus*)	41
Badger (*Meles meles*)	4
Large ungulate 'cattle-sized'	211
Small artiodactyl 'sheep-sized'	271
Unidentified mammal	1,388
Domestic chicken (*Gallus gallus*)	21
Domestic goose (*Anser anser*)	4
Domestic duck/mallard (*Anas platyrhynchos*)	3
Fowl-sized	2
Goose-sized	6
Common crane (*Grus grus*)	1
Golden plover (*Pluvialis apricaria*)	2
Rook/crow (*Corvus* sp.)	1
Unidentified birds	9
Total	2,715

Table 5.20.2. St Albans Abbey chapter house: animal species, number of bones identified from Final phase 4

Cattle (*Bos taurus*)	105
Sheep (*Ovis aries*)	15
Sheep/goat	85
Pig (*Sus scrofa*)	527
Dog (*Canis familiaris*)	3
Cat (*Felis catus*)	4
Red deer (*Cervus elaphus*)	2
Roe deer (*Capreolus capreolus*)	36
Large ungulate 'cattle-sized'	195
Small artiodactyl 'sheep-sized'	335
Unidentified mammal	1,379
Domestic chicken (*Gallus gallus*)	21
Domestic goose (*Anser anser*)	6
Domestic duck/mallard (*Anas platyrhynchos*)	3
Goose-sized	1
Common crane (*Grus grus*)	1
Woodcock (*Scolopax rusticola*)	2
Unidentified birds	7
Total	2,727

Table 5.20.3. St Albans Abbey chapter house: animal species, number of bones identified from Final phase 5

Cattle (*Bos taurus*)	12
Sheep (*Ovis aries*)	2
Sheep/goat	20
Pig (*Sus scrofa*)	112
Red deer (*Cervus elaphus*)	1
Roe deer (*Capreolus capreolus*)	9
Large ungulate 'cattle-sized'	69
Small artiodactyl 'sheep-sized'	33
Unidentified mammal	340
Domestic chicken (*Gallus gallus*)	5
Domestic goose (*Anser anser*)	1
Domestic fowl-sized	1
Common crane (*Grus grus*)	1
Unidentified birds	1
Total	607

[17] Following Boessneck *et al*. 1964.

Table 5.20.4. St Albans Abbey chapter house: animal species, number of bones identified from Final phase 6

Cattle (*Bos taurus*)	14
Sheep (*Ovis aries*)	2
Sheep/goat	6
Pig (*Sus scrofa*)	34
Roe deer (*Capreolus capreolus*)	7
Large ungulate 'cattle-sized'	19
Small artiodactyl 'sheep-sized'	17
Unidentified mammal	124
Domestic chicken (*Gallus gallus*)	3
Domestic duck/mallard (*Anas platyrhynchos*)	1
Domestic fowl-sized	1
Total	228

Table 5.20.5. St Albans Abbey chapter house: animal species, number of bones identified from Final phase 7

Sheep/goat	1
Pig (*Sus scrofa*)	1
Unidentified mammal	1
Total	3

Table 5.20.6. St Albans Abbey chapter house: animal species, number of bones identified from Final phase 8

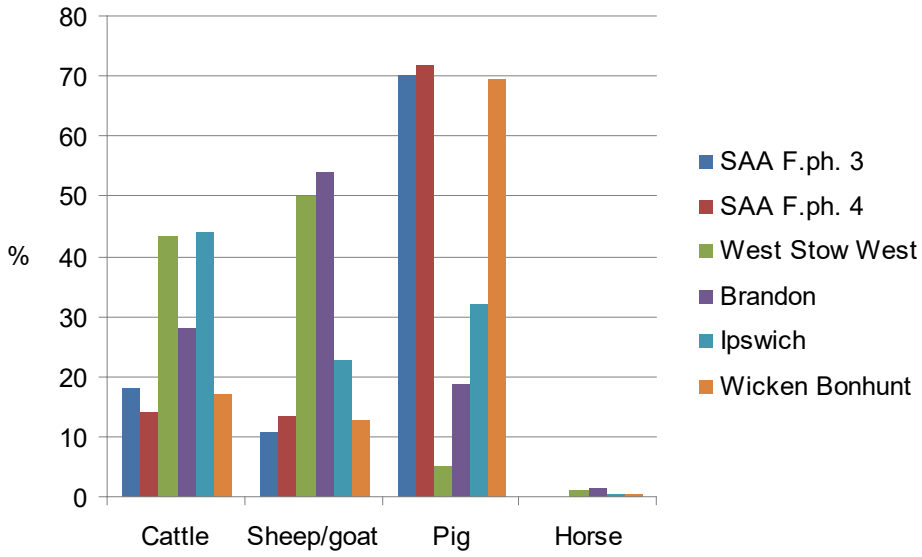
Cattle (*Bos taurus*)	3
Sheep/goat	2
Pig (*Sus scrofa*)	7
Large ungulate 'cattle-sized'	3
Small artiodactyl 'sheep-sized'	6
Unidentified mammal	42
Domestic chicken (*Gallus gallus*)	2
Domestic duck/mallard (*Anas platyrhynchos*)	1
Total	66

Table 5.20.7. St Albans Abbey chapter house: animal species, number of bones identified from Final phase 9

Cattle (*Bos taurus*)	13
Sheep (*Ovis aries*)	1
Sheep/goat	12
Pig (*Sus scrofa*)	90
Roe deer (*Capreolus capreolus*)	10
Badger (*Meles meles*)	1
Large ungulate 'cattle-sized'	21
Small artiodactyl 'sheep-sized'	31
Unidentified mammal	301
Domestic chicken (*Gallus gallus*)	2
Domestic goose (*Anser anser*)	1
Domestic fowl-sized	1
Unidentified birds	2
Total	486

Table 5.20.8. St Albans Abbey chapter house: animal species, number of bones identified from Final phase 10

Cattle (*Bos taurus*)	7
Sheep/goat	9
Pig (*Sus scrofa*)	36
Horse (*Equus caballus*)	1
Roe deer (*Capreolus capreolus*)	16
Large ungulate 'cattle-sized'	23
Small artiodactyl 'sheep-sized'	32
Unidentified mammal	162
Domestic chicken (*Gallus gallus*)	4
Domestic fowl-sized	2
Teal (*Anas creca*)	1
Pigeon (*Columba* sp.)	1
Woodcock (*Scolopax rusticola*)	2
Unidentified birds	2
Total	298



Illus. 5.20.1. Species ratios based on NISP for the large domestic mammals from St Albans Abbey chapter house, Final phases 3 and 4, West Stow West, Brandon, Ipswich, and Wicken Bonhunt.

Table 5.20.9. St Albans Abbey chapter house: species ratios based on NISP for the large domestic mammals from Final phases 3 and 4, and from other Early and Middle Anglo-Saxon sites from eastern England

Site/phase	NISP/%	Cattle	Sheep/goat	Pig	Horse	Total
SAA F.ph. 3	NISP	138	82	528	1	749
	%	18.4	10.9	70.5	0.1	100
SAA F.ph. 4	NISP	105	100	527	-	732
	%	14.3	13.7	72	-	100
West Stow West	NISP	1,394	1,602	167	43	3,206
	%	43.5	50	5.2	1.3	100
Brandon	NISP	13,441	24,652	9,121	702	47,916
	%	28.1	54.1	19	1.5	100
Ipswich	NISP	4,282	2,206	3,130	62	9,680
	%	44.2	22.8	32.3	0.6	100
Wicken Bonhunt	NISP	5,138	3,858	20,954	163	30,113
	%	17.1	12.8	69.6	0.5	100

To assess the relative importance of the large domestic mammal species, species ratios were calculated on the basis of NISP (number of identified specimens per taxon, sometimes referred to as fragment counts) following the recommendations of Lyman.[18] In Table 5.20.9, the species ratios for the Final phases 3 and 4 assemblages from the chapter house at St Albans Abbey are shown along with the data from the new excavations at West Stow West (early Anglo-Saxon) and the middle Anglo-Saxon sites of Brandon, Wicken Bonhunt, and Ipswich. These data are depicted graphically in Illus. 5.20.1.

The composition of the chapter house assemblages most closely resembles the middle Anglo-Saxon faunal remains from Wicken Bonhunt in Essex.[19] Wicken Bonhunt was a middle Anglo-Saxon rural estate centre which appears to have engaged in specialized pork production.[20] In the case of St Albans Abbey, Domesday

[18] Lyman 2008, 81.

[19] Crabtree 2012.

[20] Crabtree 1996; Crabtree 2010.

Book indicates that the abbey owned forests that provided pannage for 7,000 pigs.[21] The high number of pigs in all the Anglo-Saxon phases suggests that the abbey must have owned or had access to substantial forest land from the middle Anglo-Saxon period onwards.

Cattle and caprines make up a small portion of the St Albans Abbey chapter house faunal assemblage. The data suggest that beef and mutton played a smaller role in the abbey diet than they did at Anglo-Saxon sites such as Brandon and West Stow. The striking feature of the chapter house assemblage is the near absence of horse remains. While horse remains generally make up only one to two per cent of the faunal assemblages from most Anglo-Saxon sites, only two horse bones were recovered from the Anglo-Saxon contexts at the chapter house. The near absence of horse bones may relate to the church's ban on hippophagy. In a letter of 732 to St Boniface, Pope Gregory III told him to suppress the consumption of horse, apparently because it was associated with the worship of pagan gods such as Odin.[22] Butchery marks indicate that horse was occasionally consumed at the early Anglo-Saxon site of West Stow, but there is generally less evidence for the consumption of horses during the middle Anglo-Saxon period.[23]

One way to examine the importance of deer hunting in the St Albans Abbey assemblage is to calculate the percentage of deer bones in relation to the number of large domestic mammal (cattle, sheep/goat, pig, horse) plus deer bones.[24] These data are shown in Table 5.20.10 for Final phases 3 and 4 from the chapter house as well as for West Stow West, Brandon, Ipswich, and Wicken Bonhunt. The proportions of deer from Final phases 3 and 4 of the chapter house are substantially higher than the proportions of deer seen in the East Anglian early and middle Anglo-Saxon sites. At St Albans in both Final phases 3 and 4, about five per cent of the large mammal remains are those of deer, while deer make up less than one per cent of the total at the other Anglo-Saxon sites. Sykes has argued that deer hunting had begun to take on elite associations by middle Anglo-Saxon times, and this may, in part, explain the higher numbers of deer in the chapter house assemblages.[25] The other middle Anglo-Saxon site from southern England which has produced substantial numbers of deer remains is Ramsbury (Wilts.), an estate centre engaged in large-scale iron smelting.[26] At the time of the Norman Conquest, Domesday reports that St Albans Abbey also owned a deer park.[27]

Table 5.20.10. St Albans Abbey chapter house: the percentage of deer bones in relation to the number of bones of deer and large domestic mammals for Final phases 3 and 4, and other Anglo-Saxon sites in eastern England

	N LDM*	N Deer	Total	% Deer
SAA F.ph. 3	749	43	792	5.4
SAA F.ph. 4	732	38	770	4.9
West Stow West	3,206	2	3,208	0.06
Brandon	47,916	158	48,074	0.3
Wicken Bonhunt	30,133	159	30,292	0.5
Ipswich	9,680	39	9,719	0.4

*large domestic mammals

Body-part distributions for the cattle, caprines (including sheep and sheep/goat), pigs, and roe deer from the chapter house excavations are shown in Tables 5.20.11 (Final phase 3) and 5.20.12 (Final phase 4). The cattle bones, especially those from Final phase 4, include a large number of meaty upper-limb elements, suggesting that the abbey may have been provisioned with beef. The pig remains from Final phases 3 and 4 include a large number of cranial elements (skull, mandible, maxilla). This is a common feature of many Anglo-Saxon and medieval pig assemblages. However, the St Albans Abbey assemblage includes about twice as many pig mandibles as scapulae and other upper-limb elements. The Wicken Bonhunt assemblage includes about ten times as many mandibles as upper-limb elements. In the Wicken Bonhunt case, the post-cranial bones may have been exported from the site, possibly as barrelled pork. This is much less likely in the case of the St Albans Abbey assemblage. The higher numbers of skulls and mandibles may reflect preservational factors.

Computerization of the St Albans chapter house data allowed an examination of the primary and upper fills of the west, east, easternmost, and central ditches, separately. The west ditch yielded very little bone. The primary fill (F. 500) contained a single cattle humerus, and the upper fill (F. 501) included a pig femur and a sheep/goat scapula fragment. The primary fill of the easternmost ditch (F. 312) contained a single pig molar and an unidentified fragment, while the primary fill of the east ditch (F. 402) produced 16 bone fragments, including two cattle bones and three pig bones.

The primary (F. 500) and upper (F. 501) fills of the middle ditch yielded the bulk of the faunal assemblage. The cattle, sheep/goat, pig, horse, and roe deer fragments identified from these contexts are shown in Table 5.20.13.

[21] Toms 1962, 20.
[22] Buchholz 1993.
[23] Crabtree 1990, 104.
[24] See Crabtree 1994.
[25] Sykes 2010, 178.
[26] Coy 1980.
[27] Toms 1962, 20.

Table 5.20.11. St Albans Abbey chapter house: body-part distributions for cattle, caprines, pigs, and roe deer from Final phase 3

	Cattle	Sheep/ goat	Pig	Roe deer
Skull	14	8	75	3
Horn core	1	1	-	-
Antler	-	-	-	2
Maxilla	-	8	38	1
Mandible	5	9	79	8
Hyoid	2	1	-	-
Atlas	1	1	3	1
Axis	1	2	1	-
Sacrum	2	-	-	-
Vertebrae	3	-	14	-
Ribs	-	-	6	-
Innominate	12	2	18	3
Femur	9	2	11	-
Tibia	18	12	20	2
Fibula	-	-	18	-
Scapula	11	4	43	2
Humerus	10	2	17	1
Radius	11	12	7	2
Ulna	9	1	14	1
Astragalus	4	-	2	-
Calcaneus	7	-	6	-
Carpals	1	-	-	-
Metatarsus	3	7	16	5
Metacarpus	1	5	6	3
Metapodium	1	-	9	-
1st phalanx	2	-	10	-
2nd phalanx	-	-	1	-
3rd phalanx	5	-	-	-
Tooth fragments	-	-	5	-
Loose teeth	5	5	109	7
Total	138	82	528	41

Table 5.20.12. St Albans Abbey chapter house: body-part distributions for cattle, caprines, pigs, and roe deer from Final phase 4

	Cattle	Sheep/ goat	Pig	Roe deer
Skull	1	8	56	2
Horn core	-	1	-	-
Maxilla	-	-	29	-
Mandible	5	11	70	4
Hyoid	-	-	-	-
Atlas	-	1	1	1
Axis	1	1	2	1
Sacrum	1	-	2	-
Vertebrae	3	-	14	-
Ribs	-	-	13	-
Innominate	13	1	9	3
Femur	10	3	17	4
Patella	-	1	-	-
Tibia	9	15	15	3
Fibula	-	-	10	-
Scapula	12	4	38	1
Humerus	10	7	24	3
Radius	9	7	8	3
Ulna	9	-	23	2
Astragalus	3	2	3	1
Calcaneus	5	1	7	1
Carpals	1	-	3	-
Metatarsus	2	4	18	-
Metacarpus	-	-	17	2
Metapodium	-	-	29	3
1st phalanx	3	-	13	-
2nd phalanx	-	-	6	-
3rd phalanx	2	-	5	-
Tooth fragments	1	-	5	-
Loose teeth	5	33	90	2
Total	105	100	527	36

Table 5.20.13. St Albans Abbey chapter house: numbers and percentages of cattle, sheep/goat, pig, horse, and roe deer bones recovered from the primary (F. 500) and the upper (F. 501) fills of the middle ditch beneath the chapter house

	Primary	%	Upper	%
Cattle	131	17	98	14.1
Sheep/goat	82	10.6	93	13.4
Pig	517	67	474	68.2
Horse	1	0.1	-	-
Roe deer	41	5.3	30	4.3
Total	772	100	695	100

Table 5.20.14. St Albans Abbey chapter house: epiphyseal fusion data for pigs from Final phases 3 and 4

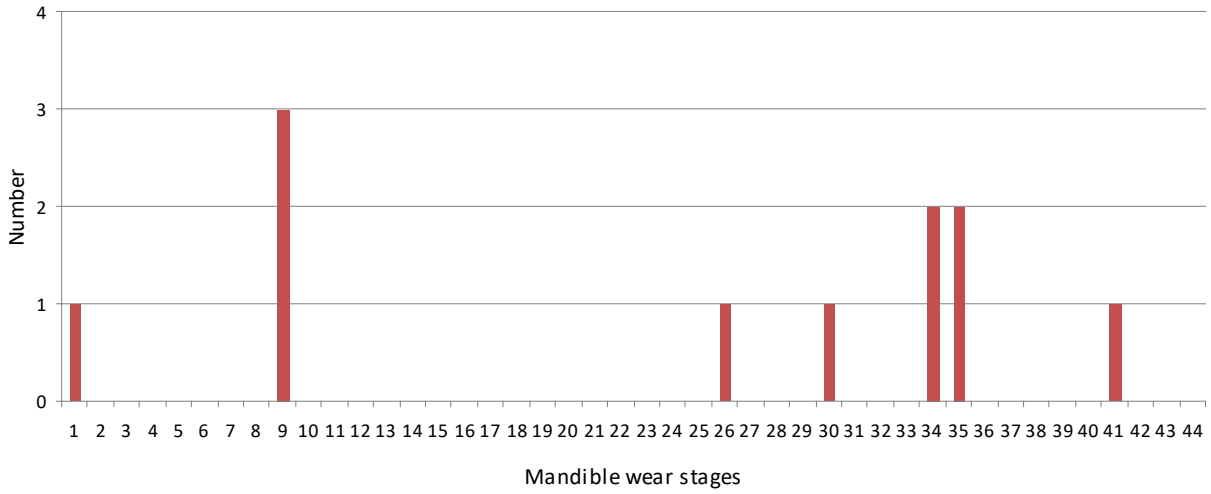
	Fused	Unfused	Total	% Fused	Age of fusion
Humerus distal	6	-	6	100	1 yr.
Radius proximal	11	3	14	78.6	1 yr.
Phalanx 2 Proximal	7	-	7	100	1 yr.
Total early fusing	24	3	27	88.9	
Phalanx 1 proximal	12	7	19	63.2	2 yrs
Metacarpus distal	3	15	18	16.7	2 yrs
Tibia distal	8	8	16	50	2 yrs
Metatarsus distal	7	23	30	23.3	2.5 yrs
Metapodium distal	6	29	35	17.1	2–2.5 yrs
Calcaneus tuber	1	8	9	11.1	2–2.5 yrs
Fibula distal	-	5	5	-	2.5 yrs
Total middle fusing	37	95	132	28	
Ulna proximal	1	9	10	10	3–3.5 yrs
Ulna distal	1	5	6	16.7	3–3.5 yrs
Humerus proximal	-	5	5	-	3.5 yrs
Radius distal	-	1	1	-	3.5 yrs
Femur proximal	1	10	11	9.1	3.5 yrs
Femur distal	1	3	4	25	3.5 yrs
Tibia proximal	1	6	7	14.3	3.5 yrs
Fibula proximal	-	1	1	-	3.5 yrs
Total late fusing	5	40	45	11.1	

Ageing analysis

The animal bones data from Final phases 3 and 4 were combined to provide a larger sample for ageing analysis. The pig ageing data based on epiphyseal fusion are shown in Table 5.20.14. These data suggest that just over ten per cent of pigs were slaughtered during the first year of life, while about seventy per cent were slaughtered by age 2.5. Only about ten per cent of the pigs survived to more than 3.5 years. The number of complete and near complete mandibles recovered from Final phases 3 and 4 is relatively small. The ageing data for these mandibles are presented in Illus. 5.20.2. Pigs of all ages, from neonatal piglets (MWS = 1) to elderly animals (MWS ≥ 40), are represented. While the data are limited, they hint at some seasonal or periodic culling of the pigs.

The faunal assemblage from Final phases 3 and 4 included far fewer ageable cattle mandibles and limb bones. The epiphyseal data are shown in Table 5.20.15. These data suggest that two-thirds of the cattle were adult animals who were older than 3.5 to 4 years when they were slaughtered. Only four ageable mandibles were recovered from the chapter house assemblage, including two market-age cattle and two older adults. No real conclusions can be drawn from these limited data.

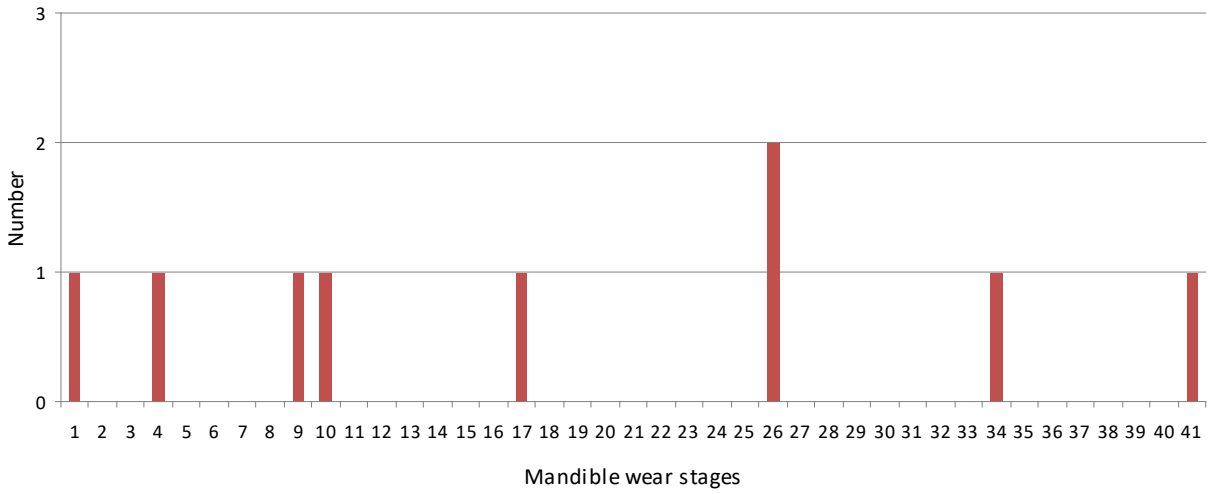
The epiphyseal ageing data for sheep and goats are presented in Table 5.20.16. The numbers of ageable limb bones are quite small, but these limited data suggest that about ten per cent of the caprines were killed during the first year of life. One-third of the sheep and goats had been slaughtered by age 2, and about half



Illus. 5.20.2. Mandible wear stages (MWS, Grant 1982) for pig mandibles from St Albans Abbey chapter house, Final phases 3 and 4.

Table 5.20.15. St Albans Abbey chapter house: epiphyseal fusion data for cattle from Final phases 3 and 4

	N. Fused	N. Unfused	% Fused	Age of fusion
Humerus distal	7	0	100	1–1.5 yrs
Radius proximal	15	0	100	1–1.5 yrs
First phalanx proximal	3	0	100	1.5 yrs
Total early fusing	25	0	100	
Tibia distal	7	1	87.5	2–2.5 yrs
Metatarsus distal	1	1	50	2.5–3 yrs
Metapodium distal	-	1	-	2–3 yrs
Total middle fusing	8	3	72.7	
Femur proximal	4	4	50	3.5 yrs
Humerus proximal	2	0	100	3.5–4 yrs
Radius distal	3	0	100	3.5–4 yrs
Ulna proximal	1	0	100	3.5–4 yrs
Ulna distal	1	0	100	3.5–4 yrs
Femur distal	-	1	-	3.5–4 yrs
Tibia proximal	2	1	66.7	3.5–4 yrs
Total late fusing	13	6	68.4	



Illus. 5.20.3. Mandible wear stages (MWS, Grant 1982) for sheep and goat mandibles from St Albans Abbey chapter house, Final phases 3 and 4.

Table 5.20.16. St Albans Abbey chapter house: epiphyseal fusion data for sheep and goats from Final phases 3 and 4

	N, Fused	N. Unfused	% Fused	Age of Fusion
Humerus distal	5	1	83.3	10 mo.
Radius proximal	7	-	100	10 mo.
Total early fusing	12	1	92.3	
Tibia distal	8	4	66.7	1.5–2 yrs
Total middle fusing	8	4	66.7	
Calcaneus tuber	1	-	100	2.5–3 yrs
Radius distal	-	1	-	3 yrs
Humerus proximal	1	-	100	3–3.5 yrs
Femur distal	1	3	25	3–3.5 yrs
Tibia proximal	1	-	100	3–3.5 yrs
Total late fusing	4	4	50	

survived to more than 3.5 years. Nine ageable mandibles were recovered from the chapter house assemblage (Illus. 5.20.3). They range in age from young juveniles to mature adults with heavily worn permanent molars.

Measurement data

The faunal assemblages from Final phases 3 and 4 were combined to increase the sample of measured bones. Thirty years ago, Maltby showed that the greatest lateral length of the astragalus (GLl) is the measurement that is most commonly recorded on Iron Age, Roman, and Anglo-Saxon assemblages from southern Britain.[28]

Table 5.20.17 shows the chapter house measurements, along with the astragalus GLl measurements from West Stow, Ipswich, Wicken Bonhunt, and Brandon. The St Albans Abbey measurements are generally consistent with the measurements from other early and middle Anglo-Saxon sites in eastern England. A single complete radius (GL = 261.1 mm) provided a withers height estimate of 112.3 cm.

Maltby has shown that the breadth of the distal tibia (Bd) is the most commonly recorded measurement on sheep/goat remains from Iron Age, Roman, and Anglo-Saxon sites.[29] In Table 5.20.18, the distal tibial

[28] Maltby 1981.

[29] Maltby 1981.

Table 5.20.17. St Albans Abbey chapter house: the greatest lateral length (GLl) of the cattle astragali from Final phases 3 and 4 compared to the metrical data from other Early and Middle Anglo-Saxon sites in East Anglia (measurements in mm)

GLl	Mean	Min.	Max.	s.d.	N
St Albans Abbey	59.4	54.5	64.2	4.1	5
Brandon	61.1	53.8	69.7	3.2	269
Ipswich	61.5	53.3	72.4	3.9	108
Wicken Bonhunt	62.4	51.2	67.8	3.8	39
West Stow 5th cent.	61.1	54.2	65.8	3.2	27
West Stow 6th cent.	60.1	53.6	67.2	2.7	61

Table 5.20.18. St Albans Abbey chapter house: the distal breadth (Bd) of sheep/goat tibiae from Final phases 3 and 4 compared to the metrical data from other Early and Middle Anglo-Saxon sites in East Anglia (measurements in mm)

Tibia Bd	Mean	Min.	Max.	s.d.	N
St Albans Abbey	27.2	24.4	28.4	1.6	005
Brandon	25.8	19.5	29.5	1.3	735
Ipswich	26.3	22.4	29.7	1.5	088
Wicken Bonhunt	25.7	22.2	29.1	1.2	136
West Stow 5th cent.	26.2	22.4	27.9	1.7	042
West Stow 6th cent.	26	22.8	29.5	1.5	096

breadths from St Albans Abbey are compared to those from Brandon, Wicken Bonhunt, West Stow, and Middle Saxon Ipswich. The St Albans measurements are generally in line with those from other Anglo-Saxon sites in eastern England. No complete sheep limb bones were recovered, so no estimates of withers heights could be made.

A larger number of measurements were taken on the pig bones from Final phases 3 and 4. Table 5.20.19 shows measurements on the pig humerus, radius, tibia, and lower third molar from St Albans Abbey compared to data from Brandon, Wicken Bonhunt, Ipswich, and West Stow. The pigs from St Albans Abbey chapter house, Final phases 3 and 4, are generally similar in size to those from other Anglo-Saxon sites in eastern England.

A single complete third metacarpal of a horse was recovered from Final phase 3 at St Albans Abbey. The bone had a greatest length of 220.5 mm. This would correspond to an estimated withers' height of 136 cm or just under 13.5 hands.[30] This horse is very comparable in size to the early Anglo-Saxon horses from West Stow, where two complete metacarpi from Phase 1 provided withers' height estimates of 134.48 cm and 134.55 cm.[31]

Butchery

Analysis of butchery marks on archaeological animal bones can reveal consistent patterns of carcass dismemberment. Three types of butchery marks were apparent on the St Albans Abbey chapter house bones: fine knife cuts, heavy chops which were probably made with an axe or cleaver, and axial splitting of the long bones. The 5th–8th/9th-century (Final phases 3 and 4) animal bones included 77 identifiable bones bearing butchery traces. The majority of butchery traces appeared on cattle bones. The anatomical distribution of these marks is shown in Table 5.20.20. Butchery patterns for each species will be discussed separately.

i. Pigs

Head. A single pig skull was axially split, probably for removal of the brain. The posterior portions of two pig mandibles showed chop marks. These marks probably resulted from separating the mandible from the skull. A single atlas and two axis vertebrae showed chop marks which may have resulted from decapitation.

Forelimb. Three distal scapulae showed knife cuts resulting from the disarticulation of the shoulder joint. Two distal humeri showed knife cuts, and one had chop marks. These marks were produced when the elbow joint was disarticulated.

[30] Following Vitt as cited in von den Driesch and Boessneck 1974, 331.
[31] Crabtree 1982, 209.

Table 5.20.19. St Albans Abbey chapter house: measurements on pig bones from Final phases 3 and 4 compared to the metrical data from other Early and Middle Anglo-Saxon sites in East Anglia (measurements in mm)

Humerus Bd	Mean	Min.	Max.	s.d.	N
St Albans Abbey	36.6	33.4	39.5	2.1	9
Brandon	37	33.4	41.8	1.9	107
Ipswich	37.8	26.7	41.5	3.3	23
Wicken Bonhunt	37.3	34.3	43.1	1.7	55
West Stow 5th cent.	38.6	34.1	43.6	2.4	12
West Stow 6th cent.	40	36	43.1	2.1	15
Radius Bp					
St Albans Abbey	26.8	24.8	28.7	1.2	10
Brandon	27.4	23.7	32.3	1.6	134
Ipswich	28.1	25	31.7	1.6	67
Wicken Bonhunt	28.6	24.8	34.7	2.4	17
West Stow 5th cent.	28.6	25.5	31	1.5	10
West Stow 6th cent.	28.7	26.4	30.8	1.5	12
Tibia Bd					
St Albans Abbey	28.9	26.7	32.3	1.9	8
Brandon	28.7	25.2	33.7	1.5	120
Ipswich	29	26.6	32.9	1.5	31
Wicken Bonhunt	33.7	26.3	38.9	1.8	17
West Stow 5th cent.	29.6	27.6	31.7	1.6	10
West Stow 6th cent.	29.4	27.2	31	1.2	11
LM3 Length					
St Albans Abbey	30.3	26.7	32.2	1.6	12
Brandon	32	25.8	38	2.5	95
Ipswich	31.8	28.3	34.1	1.5	28
Wicken Bonhunt	31	25.1	37.2	2.1	418
West Stow 5th cent.	32.9	30	37	2.2	10
West Stow 6th cent.	31.8	29.9	35.1	1.4	11

Hindlimb. Few pig hindlimb bones from St Albans Abbey showed butchery traces. The most common butchery marks resulted from the disarticulation of the hip joint. Chop marks were seen in two pig innominates and a proximal pig femur. Fine knife cuts across the dorsal face of an astragalus resulted from the separation of the hock joint. These cut marks are common on astragali from other Anglo-Saxon sites including the early Anglo-Saxon site of West Stow.[32]

[32] Crabtree 1982, 319.

ii. Cattle

Head. No cut marks were apparent on any cattle skull or mandible fragments. Two axis vertebrae showed chop marks resulting from decapitation. A single hyoid bone showed chop marks along the medial surface. These may have resulted from the removal of the tongue.

Forelimb. Butchery traces are common on cattle forelimb bones. The elbow joint, in particular, seems to be a major point of disarticulation. A single proximal humerus

Table 5.20.20. St Albans Abbey chapter house: Distribution of butchery marks on fifth- to ninth-century animal bones (Final phases 3 and 4)

Anatomical Element	Pig	Cattle	Sheep/goat	Roe deer
Skull	1	-	2	-
Horn Core/Antler	-	-	-	1
Mandible	2	-	-	-
Hyoid	-	1	-	-
Atlas	1	-	1	-
Axis	2	2	-	-
Scapula	3	-	-	-
Humerus	3	5	4	-
Radius	-	9	1	-
Ulna	-	1	-	-
Metacarpal	-	1	-	-
First Phalanx	-	2	-	-
Innominate	2	6	-	1
Sacrum	-	3	-	-
Femur	1	2	-	-
Tibia	-	3	3	-
Astragalus	1	2	-	-
Calcaneus	-	2	-	-
Metatarsal	-	2	-	-
Thoracic Vertebrae	2	-	-	-
Lumbar Vertebrae	1	1	-	-
Ribs	3	-	-	-
Total	22	42	11	2

showed knife cuts, probably from the separation of the shoulder joint. A distal humerus and a proximal radius showed chop marks, and two other proximal radii showed knife cuts. These marks certainly result from the disarticulation of the elbow joint. Chop marks were also seen on a proximal ulna. In addition, two distal humeri and seven proximal radii have been axially split. Axial splitting is a common middle Anglo-Saxon butchery technique which has been seen at Hamwic, Brandon, and the Anglo-Saxon levels at Portchester Castle.[33] These long bones may have been split for marrow extraction.

Hindlimb. Although butchery marks were relatively common on cattle innominates, no clear butchery pattern is apparent. A single example of transverse cut marks below the acetabulum probably resulted from the disarticulation of the hip joint. A chop mark on the medial portion of the proximal femur may have been produced in the same way. Other chop marks on the ischium and pubis presumably resulted from the separation of the rump into roast-sized pieces. Two distal tibiae have been axially split, probably for marrow extraction.

Feet. Knife cuts were seen on the proximal portions of two first phalanges. These were undoubtedly produced by the removal of the toes. One metacarpal and three metatarsals have been axially split for marrow removal. Cut and chop marks on both the astragalus and calcaneus resulted from the disarticulation of the hock joint.

[33] Bourdillon and Coy 1980; Crabtree 2007; Grant l976.

iii. Sheep

Only a small number of sheep bones showed butchery marks. Two skulls were axially split for the removal of the brain. Decapitation produced knife cuts on a single atlas or first cervical vertebra. Cut marks on three distal humeri and a single proximal radius resulted from the disarticulation of the elbow joint. Separation of the shoulder joint produced knife cuts on a single proximal humerus. Chop marks on a distal tibia probably resulted from the removal of the feet. Two additional distal tibiae may have been axially split for marrow removal.

Conclusions

The faunal assemblages from St Albans Abbey chapter house, Final phases 3 and 4, include a high proportion of pig and roe deer bones. Both features are consistent with the interpretation of the site as a high-status ecclesiastical foundation. Data from a wide range of Anglo-Saxon sites indicate that deer hunting had begun to take on elite associations by the middle Anglo-Saxon period. Anglo-Saxon sites with large numbers of pig bones are quite rare, and the presence of so many pigs indicates that the abbey would have had access to large tracts of forest.

The character of the St Albans Abbey faunal assemblage is generally consistent with middle Anglo-Saxon sites in eastern England. While most early Anglo-Saxon sites tend to be relatively self-sufficient in animal products, zooarchaeological data from middle Anglo-Saxon sites provide wider evidence for trade, exchange, and specialization.[34] Sykes has made a similar argument for hunting.[35] While early Anglo-Saxons hunted deer as a way of supplementing their diet, middle Anglo-Saxons saw hunting as an elite activity. Moreover, ecclesiastical foundations were often supplied with meaty limb elements, especially those of the forelimb.[36] It is interesting to note that the Final phase 4 assemblage included a sizeable number of humeri, radii, and ulnae of roe deer.

The butchery practices seen at St Albans Abbey also link it to other middle Anglo-Saxon faunal assemblages in southern England. Splitting of the lower limb bones is a common form of butchery at middle Anglo-Saxon Hamwic and at Brandon. However, it is not seen in the early Anglo-Saxon faunal assemblages from West Stow and West Stow West. I would conclude that the animal bones from Final phases 3 and 4 are most likely middle Anglo-Saxon in date.

[34] Crabtree 2010.
[35] Sykes 2010.
[36] Sykes 2010, 180.

PART 5

21. MODERN COFFIN FURNITURE

by JULIAN W. S. LITTEN

The coffin furniture is of very good quality. The three examples span 70 years of the trade.

V23/3: Cast iron grip from a coffin 19 mm (0.75 in.) in thickness. A circular grip cast with a wreath of berried ivy. Stamped with a registration mark and the name HICKMAN & CLIVE. Hickman & Clive were a Birmingham firm of founders working almost exclusively for the funeral trade; they were taken over in 1888 by the Birmingham company of Cooksey, Ingall and Parsons and were re-named Ingall, Parsons & Clive. The firm survives but is now based in Scotland; they disposed of their records and guard books many years ago. This particular grip dates from *c*.1870–88.

V23/5: Cast iron grip from a coffin 25.4 mm (1 in.) in thickness. A rectangular grip in a revived gothic style with central four-petalled flower and curving stylized leaves. Probably from an adolescent male's coffin. This, as with V23/3, has cotter-pinned bolts and the grip is self-locking. Makers mark on reverse indistinct; probably COOKSEY, INGALL & PARSONS of Birmingham. Probable date *c*.1890.

V23/6: Cast iron grip from a coffin 19 mm (0.75 in.) in thickness. A rectangular grip cast with a central six-petalled flower and curving stylized leaves; the grip is self-locking and fits into cast iron cotter-pinned bolts. Stamped on the back: JNo HANDS No 60 OCTr 2 18--. A somewhat similar set of grips, in ormolu, by Jonas Hands of London, were seen on the outer case of the coffin of Algenon Percy, first Earl of Beverley (d.1830) during the clearance of the vaults beneath St Mary's, St Marylebone, London in 1983. Hands was more of a supplier to the cabinet making trade rather than to the funeral one.

These three examples are of a quality associated with funerals of the gentry; they should be of ormolu, bronze or brass to be of top rank quality. Be that as it may, they are finer than most and have been superbly conserved.

APPENDICES

APPENDIX I

BURIALS IN THE CHAPTER HOUSE

by MARTIN BIDDLE

Text and translation of the early fifteenth-century account of burials in the chapter house
(BL, Harleian MS. 3775, ff. 130r–v+ printed from the MS)
(cf. *Annales monsaterii S. Albani...Johanne Amundesham*, 434–5, Appendix D):
the translation from Lloyd 1873, 7–9.

This description of burials in the chapter house of St Albans Abbey forms part of a longer account of burials throughout the abbey written about 1428, now BL, Harleian MS. 3775, ff. 129r–37v.[1] The document, numbered '16' in red on f. 129r, is one in a collection of St Albans manuscripts bound up together in Harl. MS. 3775. Its text was printed by H. T. Riley in 1870,[2] and a translation with valuable annotation was published by Ridgway Lloyd at St Albans in 1873.[3] The passage describing the burials in the chapter house on ff. 130r and 130v is printed here from the manuscript alongside a revised version of Lloyd's translation. Spelling, capitalization, and punctuation have been modernized. Riley's notes to the text have in general been followed.[4]

[f.130r, line 18[5]] Cetera vero corpora abbatum huius monasterii ante conquestum, rabie Normannorum ubi iacuerunt sunt nobis incognita, sed in capitulo sub relatione antiquorum patrum didicimus[6] veraciter esse recondita. Post conquestum vero abbatum corpora sunt ibidem tumulata. In ostio[7] videlicet ipsius capituli dominus Johannes Moot sub lapide plano marmoreo ipsius media figura et epitaphio decorato. Deinde versus orientalem frontem videlicet eiusdem capituli iacent seriatim [f.130^{v}] corpora quattuor abbatum sub lapidibus marmoreis cum imaginibus et epitaphiis[8] impressis: dominus Garinus, sive Warinus, de Cantebrigia, dominus Radulphus Gobyon, dominus Willelmus Trumpyngton, et dominus Johannes de Hertforde, quorum laudes et merita efferuntur ad poli sidera. [new para]

Ex altera parte analogii ibidem versus orientem iacent corpora sex abbatum seriatim inibi tumulatorum, videlicet domini Pauli de Cadamo normanni, Ricardi de Exaquio normanni, Galfridi de Gorham normanni, et domini Roberti de Gorham, Simonis, et Johannis de Cella, sub lapidibus marmoreis modicum scripturas eorum epitaphia[9] continentibus,[10] quorum laudes et beneficia meruerunt regna caelestia. [new para]

Circa medium vero eiusdem capituli in parte australi iacet Adam Wytnam, quondam cellerarius, forestarius et prior huius monasterii. Ex parte vero opposita ibidem iacet Magister Adam Rows quondam sirurgicus Regis Edwardi a conquæstu tertii. Ex eadem parte prope ostium capituli iacet dominus Adam Cellerarius, dictus antonomasice[11] *Lyons*, sub lapide marmoreo clavibus superimpressis. Antiquo lapide, qui pavimento supereminebat et ob hoc erat transeuntibus[12] offendiculum amoto et in partem seposito, de quo abcidebantur olim scindule in pulverem redacte et potate diversis infirmitatibus iuxta utentium[13] valiture.

In medio claustri, fere ex opposito ostii capituli, iacet dominus Bartholomeus Wendouere, quondam rector de Schaxtone, huius monasterii et operis claustri benefactor precipuus, sub lapide marmoreo eius epitaphio[14] decorato, cuius beneficia precipua libro Benefactorum plenius continentur.

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[1] For the date, see Lloyd 1873, v, cf. pp. 11, 43.
[2] *Annales monsaterii S. Albani...Johanne Amundesham...*, 431–49, with the part about the chapter house on pp. 434-5; discussion in RS 1871, lix–lxii.
[3] Lloyd 1873, with the part about the chapter house on pp. 7–8 and 31–6.
[4] For the individuals and their burials, see pp. 245–83 and Tables 2.3.1, 2.3.2, 4.4.1, and 4.4.2. For further details on the nature of these burials, see Tables 4.1.1–9 and 4.3.1–10.
[5] Not including the two lines above the red rule at the top of the page.
[6] *didissimus* MS.
[7] *hostio* MS.
[8] *ymaginibus et epithaphiis* MS.
[9] There is an hiatus in the MS. before this word.
[10] *continentia* MS.
[11] *athonomatice* MS. I am grateful to Professor Rodney Thomson for his help with this word.
[12] *transiuntibus* MS.
[13] *necessitates* or a similar word is missing.
[14] *ephitaphio* MS.

[The following verses are added at the foot of f. 130^{v}]

Bartholomæus in hoc de Wyndoure monumento

Clauditur; hoc claustrum decoravit qui pavimento

Cum reddetur ei suppreme vita diei

Fac tibi summe Deus communiat Bartholomæus.[15]

As for where the other bodies of the abbots of this monastery before the conquest lay, owing to the rage of the Normans that is unknown to us, but we have assuredly learnt on the authority of the ancient fathers that they were buried in the chapter house. After the conquest the bodies of the abbots were buried there. At the door of the chapter house, for instance, Dom John Moot [lies] under a flat stone of marble adorned with his middle figure [*media figura*] and epitaph. Thence, that is towards the east front of the chapter house, the bodies of four abbots rest in order beneath marble slabs with their effigies and epitaphs impressed [*impressis*]: Dom Garin or Warin of Cambridge, Dom Ralph Gubion, Dom William Trumpington, and Dom John de Hertford, whose praises and deserts are carried to the stars of the firmament.

In the same place, on the other side of the lectern towards the east, lie the bodies of six abbots buried there in order, namely, of Dom Paul of Caen, a Norman; of Richard of Lessay, a Norman; of Geoffrey of Gorham, a Norman; and of Dom Robert of Gorham, Simon, and John de Cella,[16] beneath marble slabs with their epitaphs; whose praises and good deeds have merited the Kingdom of Heaven.

Now about the middle of the same chapter house on the south side, lies Adam Wytnam, formerly cellarer, forester, and prior of this monastery. On the opposite side lies Master Adam Rows, formerly surgeon to King Edward the Third from the Conquest. On the same side near the door of the chapter house lies Adam the Cellarer,[17] known as 'Lyons',[18] beneath a stone of marble with keys engraved thereon. The old stone, which projected above the pavement and was thus something of an inconvenience to those passing by, was removed and put away to the side. Fragments of it used to be chipped off, reduced to powder, and drunk, to serve as a cure for various diseases, according to the needs of those who used them.

In the middle of the cloister, nearly opposite the door of the chapter house, lies Dom Bartholomew Wendover, formerly rector of Shackerstone [Leics.].[19] A great benefactor to this monastery and to the work of the cloister, he lies under a marble stone adorned with his epitaph, but the chief of his good deeds are contained more fully in 'The Book of Benefactors'.[20]

[The following verses are added at the foot of the page]

Bartholomew of Wendover is enclosed in this monument,

who decorated this cloister with a pavement.

When he is restored to life at the last day,

Grant, O God Most High, that Bartholomew may be in communion with you.[21]

[15] These four lines are in the hand which wrote the verses about the hermits Roger and Sigar on f.130r.

[16] Also known as John of Wallingford, of which cell of St Albans he was prior 1191–5, before becoming abbot of St Albans. 1195–1214: see above, pp. 339–40.

[17] See *Gesta Abbat.*, I, xiv–xvi, 206–7; *Gesta Abbat.*, III, 390, 567 (index).

[18] Perhaps Lyons-la-Foret in Haute Normandie, formerly known as 'Saint-Denis-en-Lyons', under English rule until 1202.

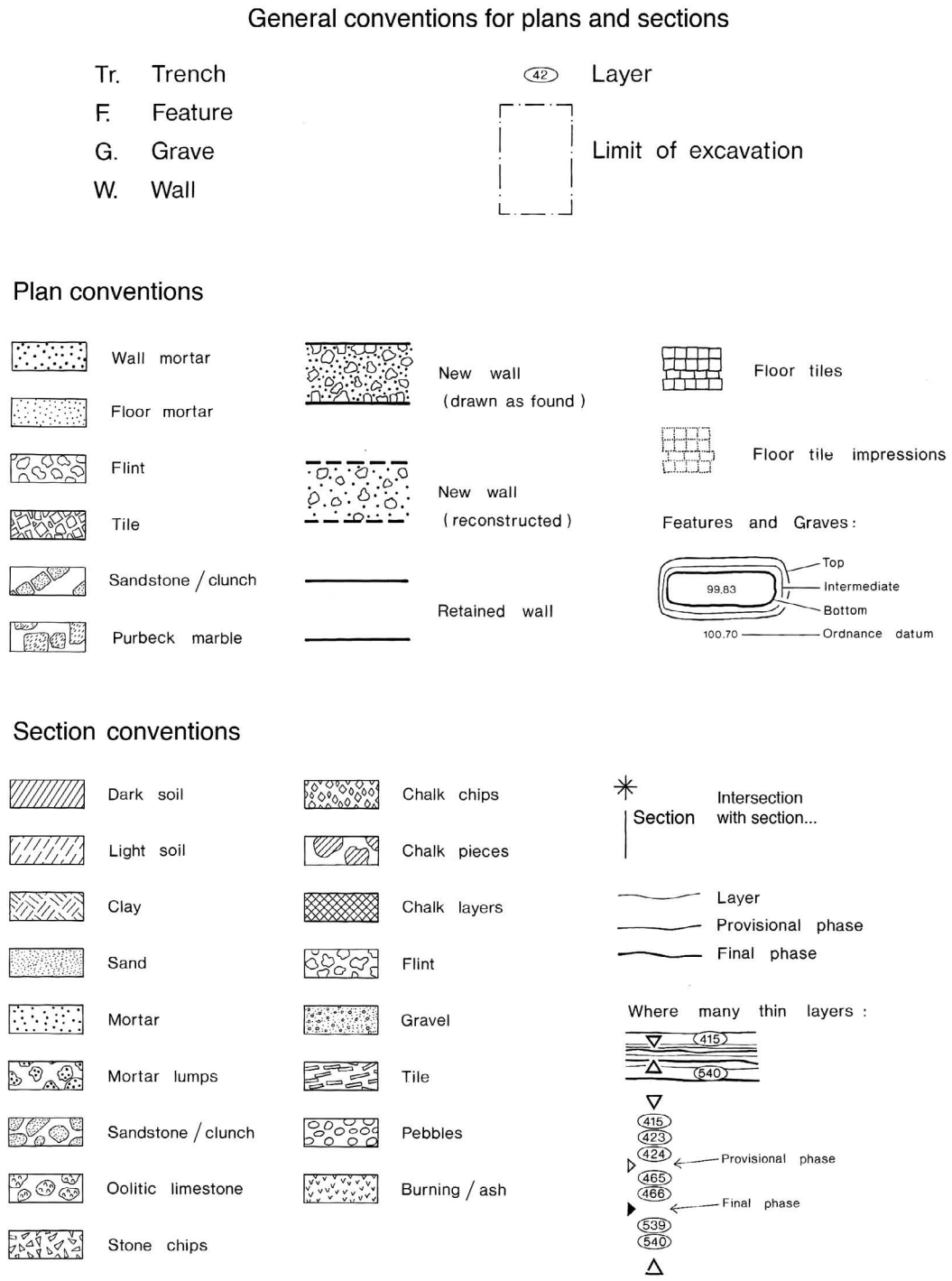
[19] Wrongly identified by Lloyd (1873, 435) as Caxton (Cambs.) where a Bartholomew [de] Wendover, otherwise Bartholomew the clerk, was apparently rector by 1260: *VCH Cambs*, 5, 26–35, at n. 126.

[20] *HA*, 454–5; see above, p. 344.

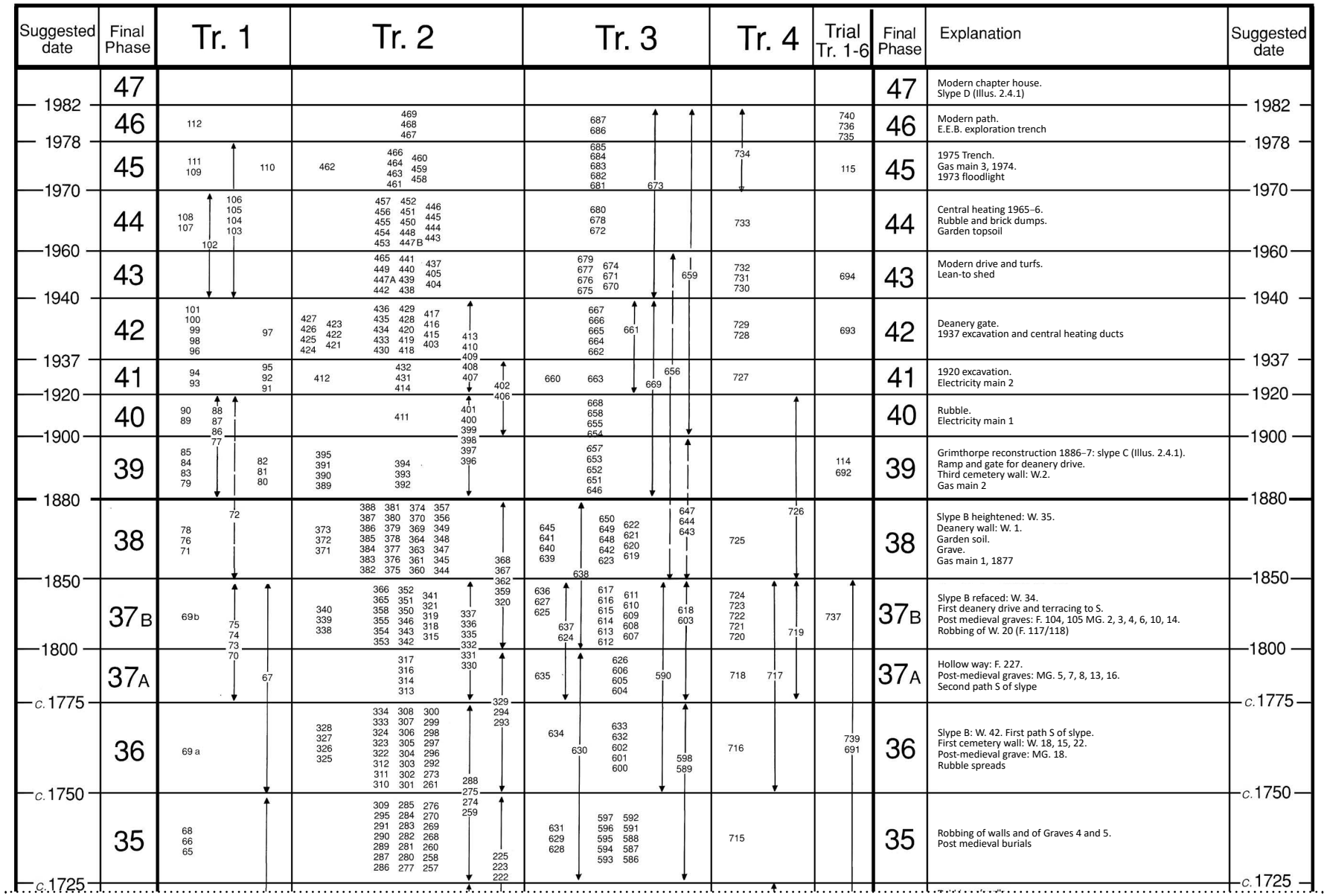
[21] These verses might have been written by either Thomas Walsingham or John Wheathampstead: Clark 2002, 836.

APPENDIX II

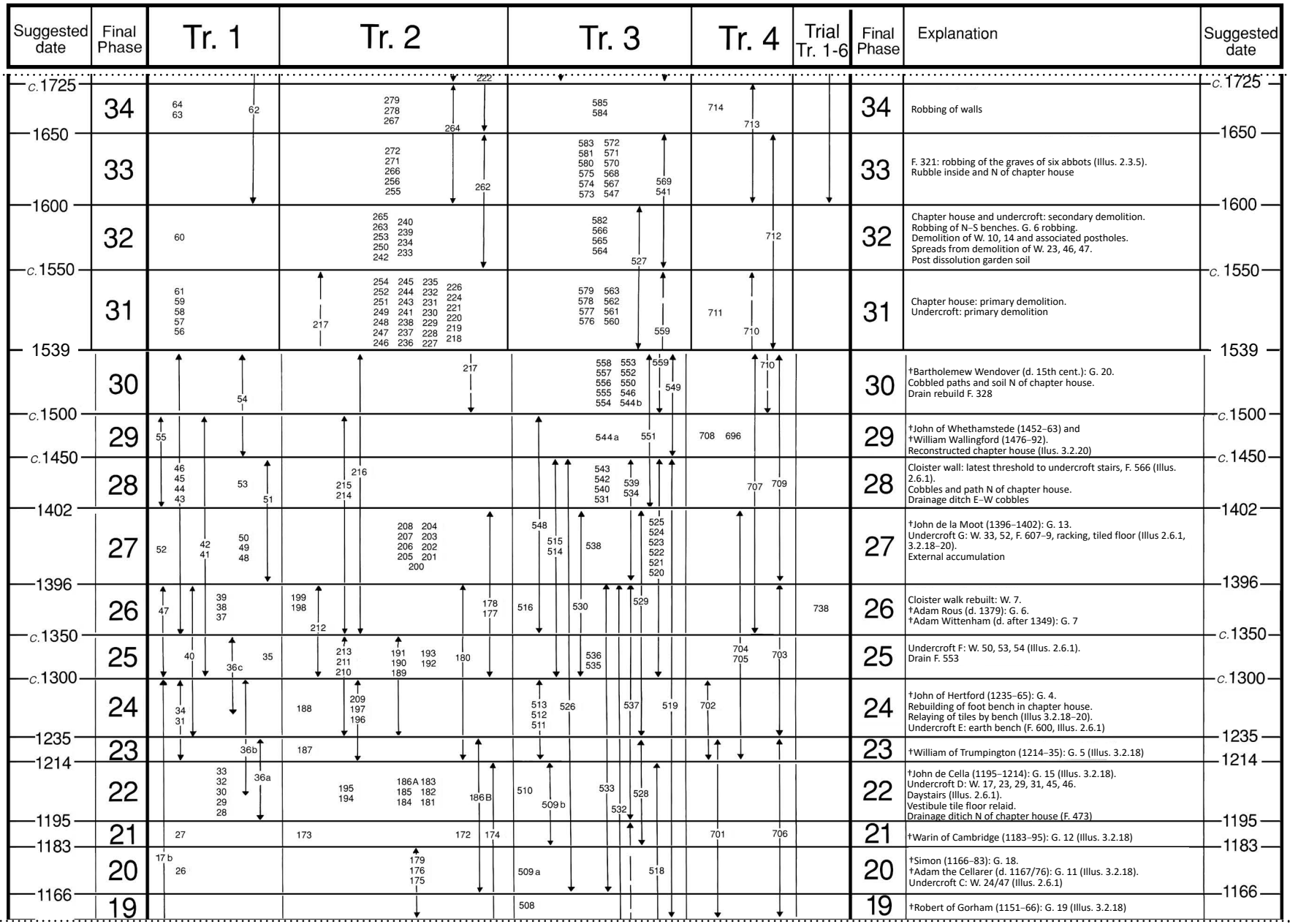
SECTIONS AND PLANS



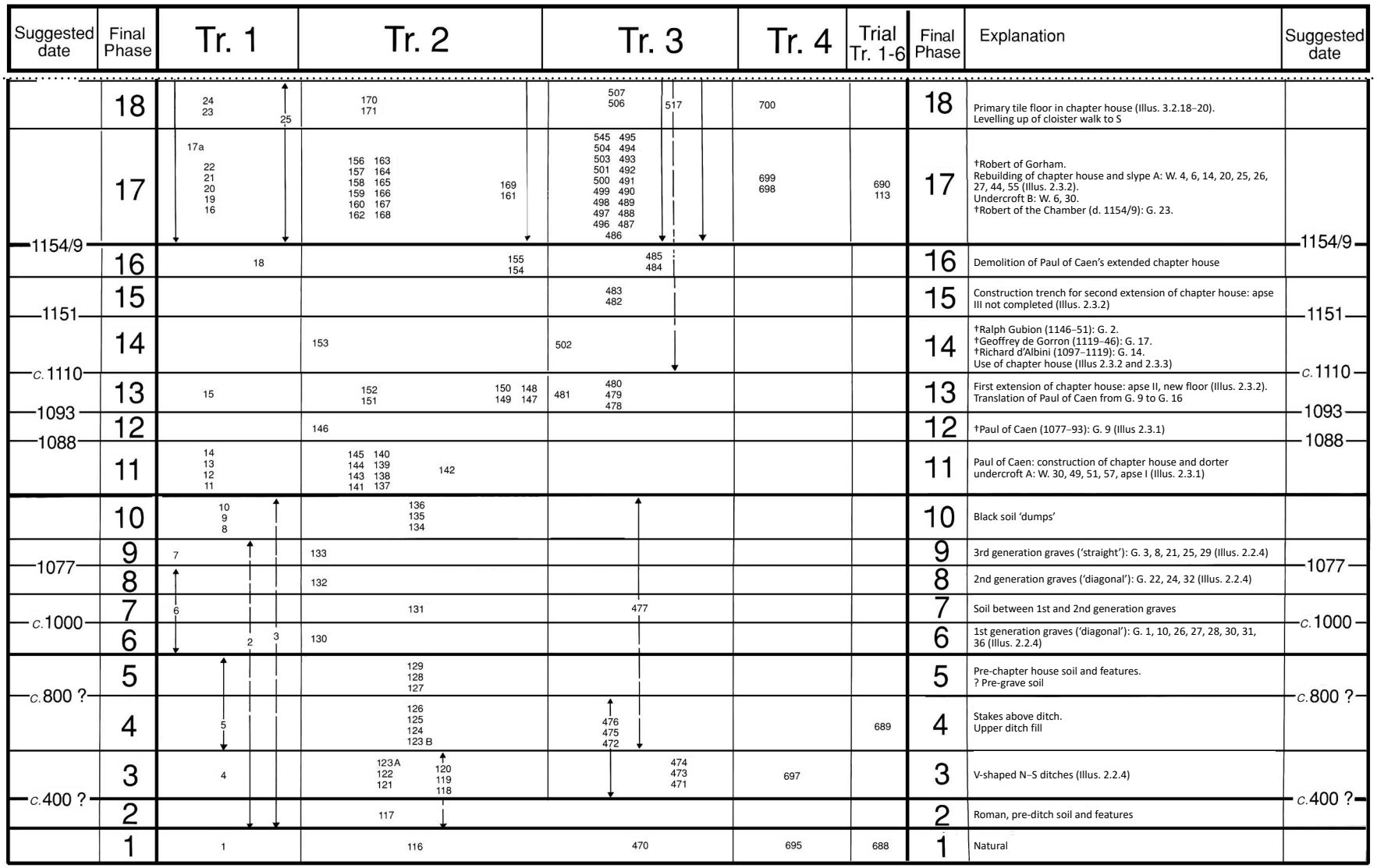
Illus. A.II.1. Conventions for plans and sections.



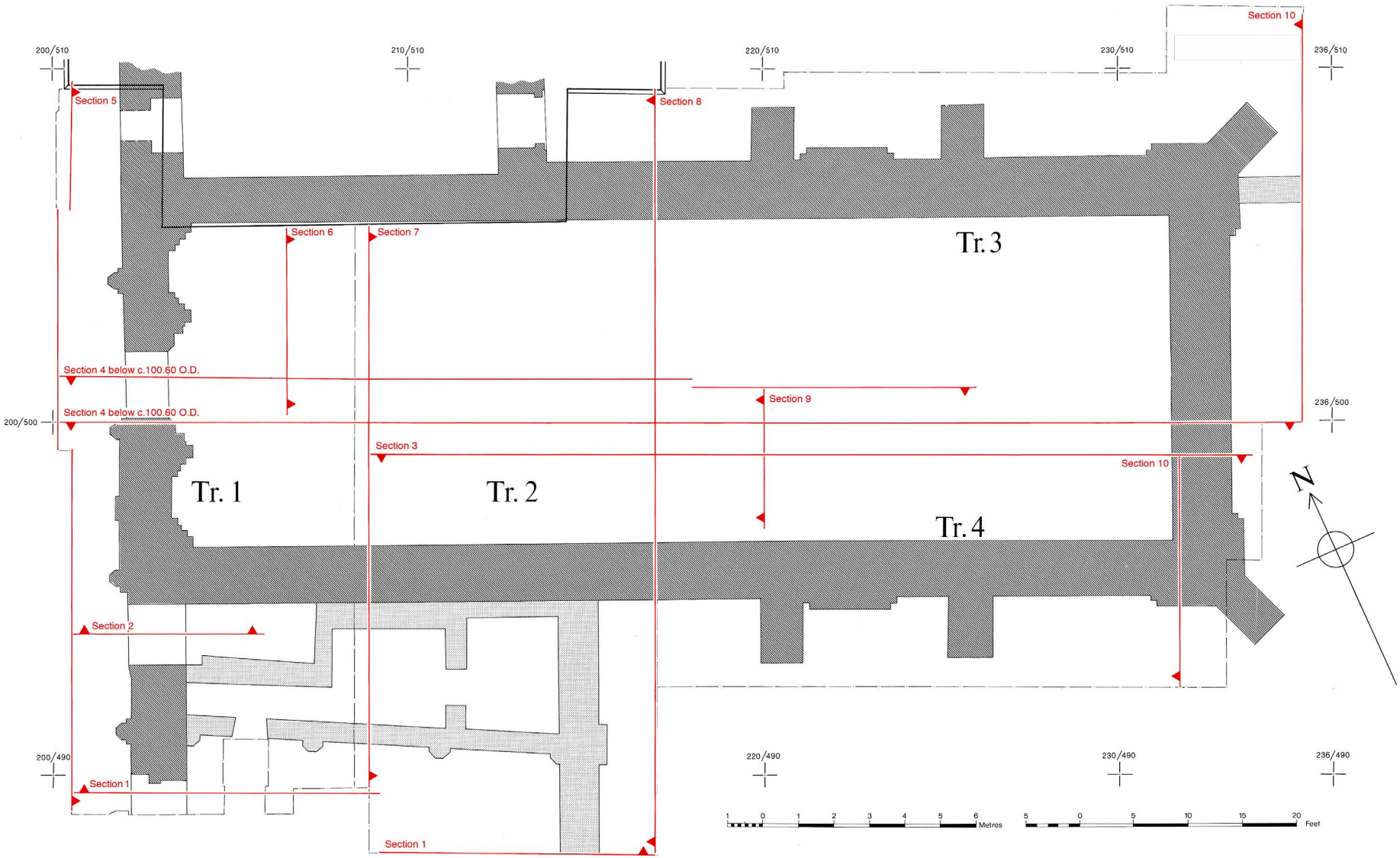
Illus. A.II.2. Phasing chart.



Illus. A.II.2. Phasing chart, *cont.*



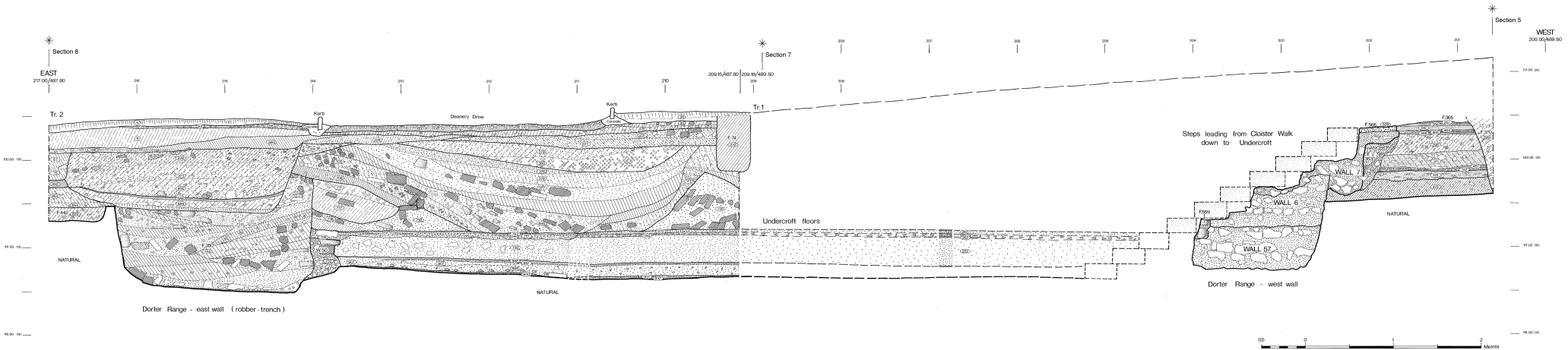
Illus. A.II.2. Phasing chart, *cont.*



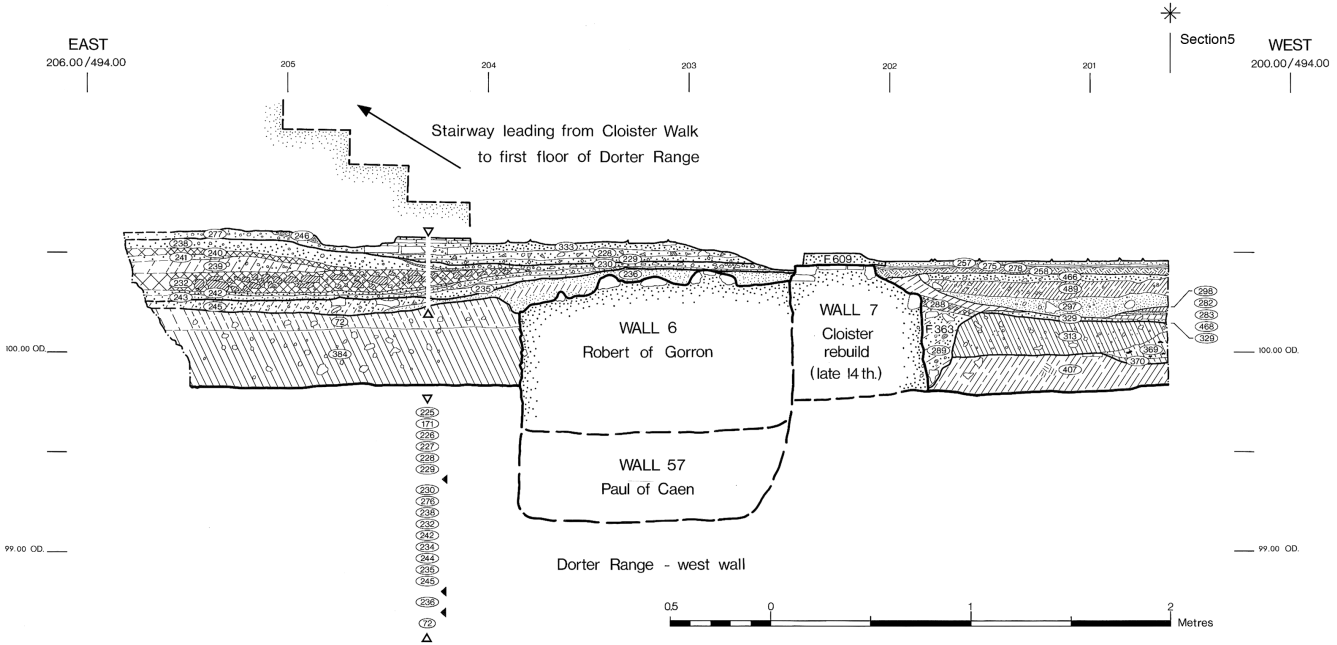
Illus. A.II.3. The chapter house: location of Sections 1–10.

Pages 501-540 have been replaced in this ePDF with high resolution Sections 1-10.

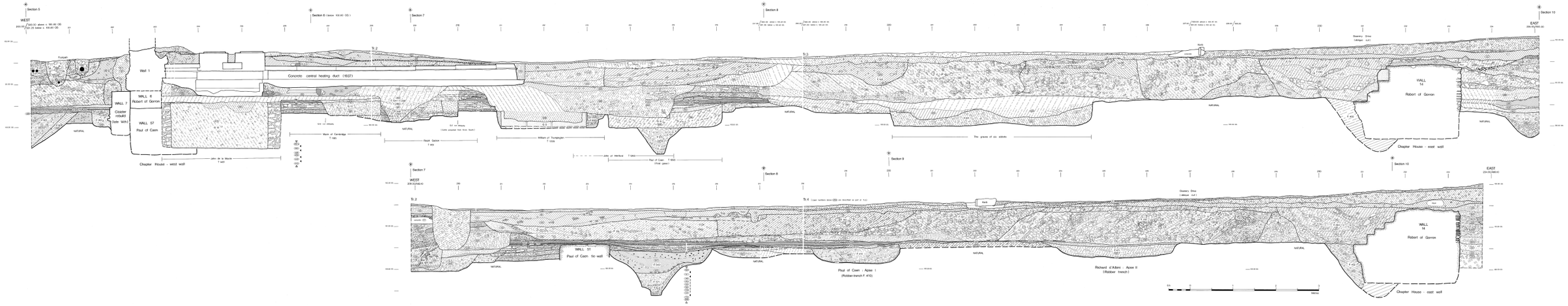
http://doi.org/10.32028/9781803277080-Section-1



http://doi.org/9781803277080-Section-2



http://doi.org/10.32028/9781803277080-Sections-3-and-4



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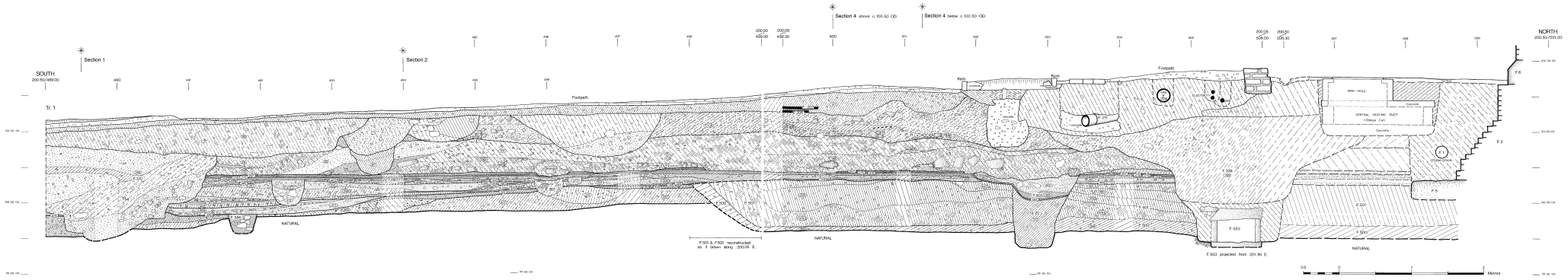

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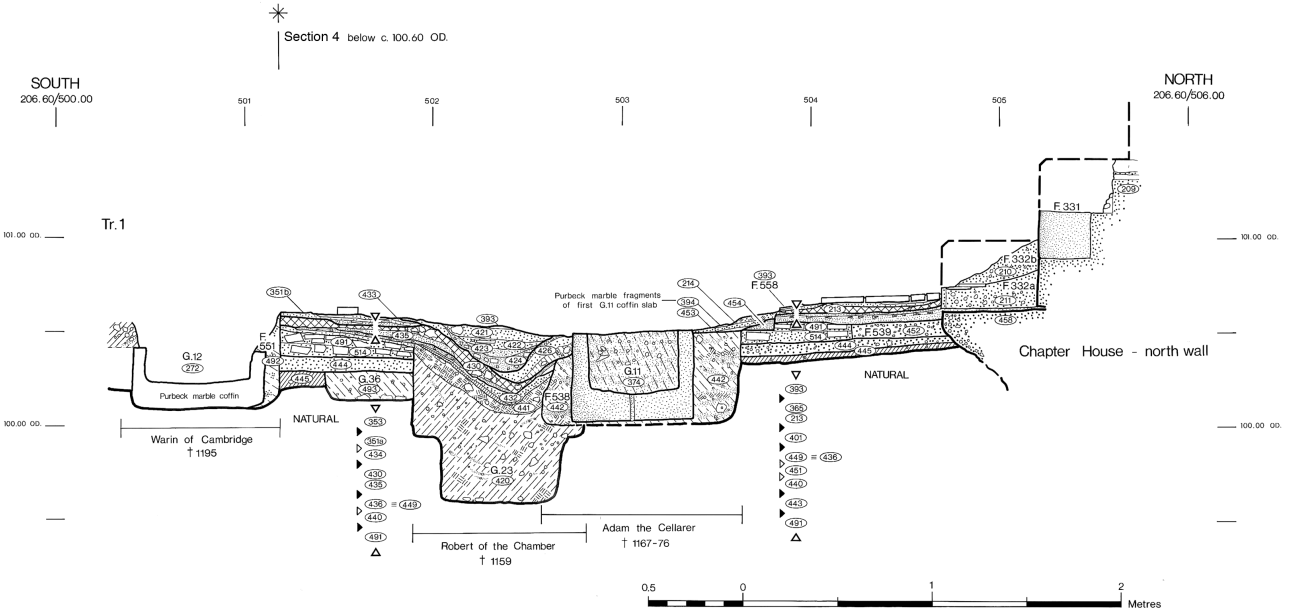

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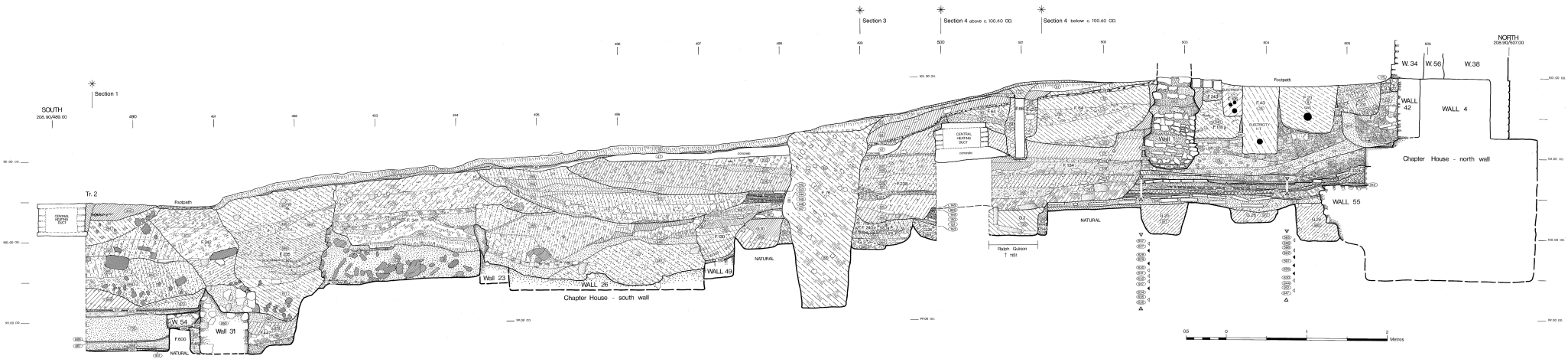

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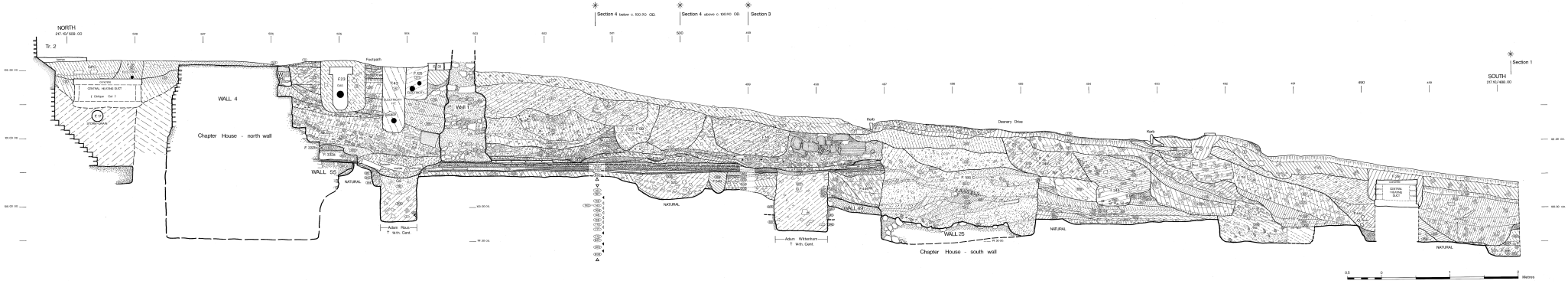

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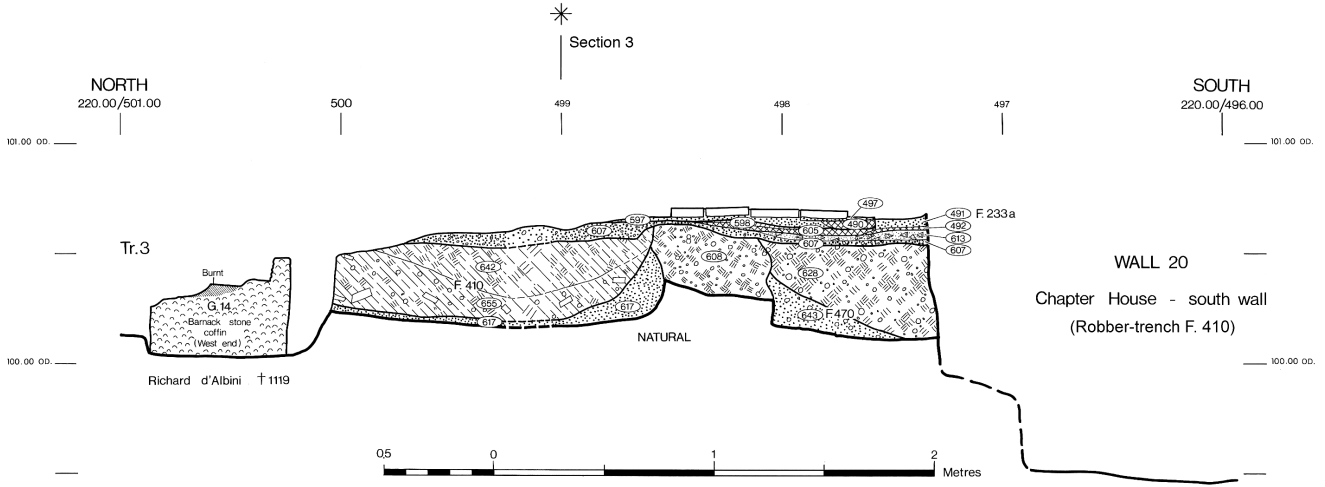

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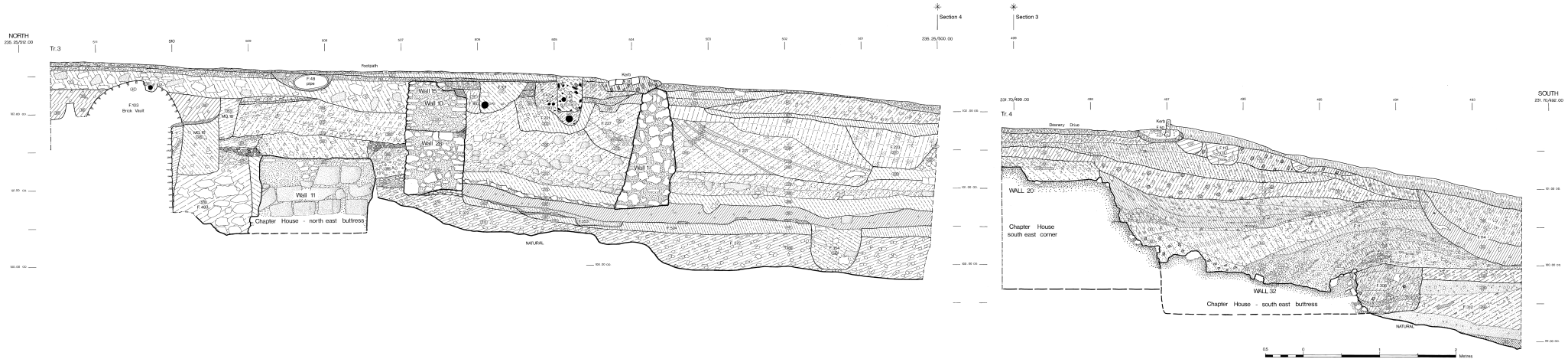

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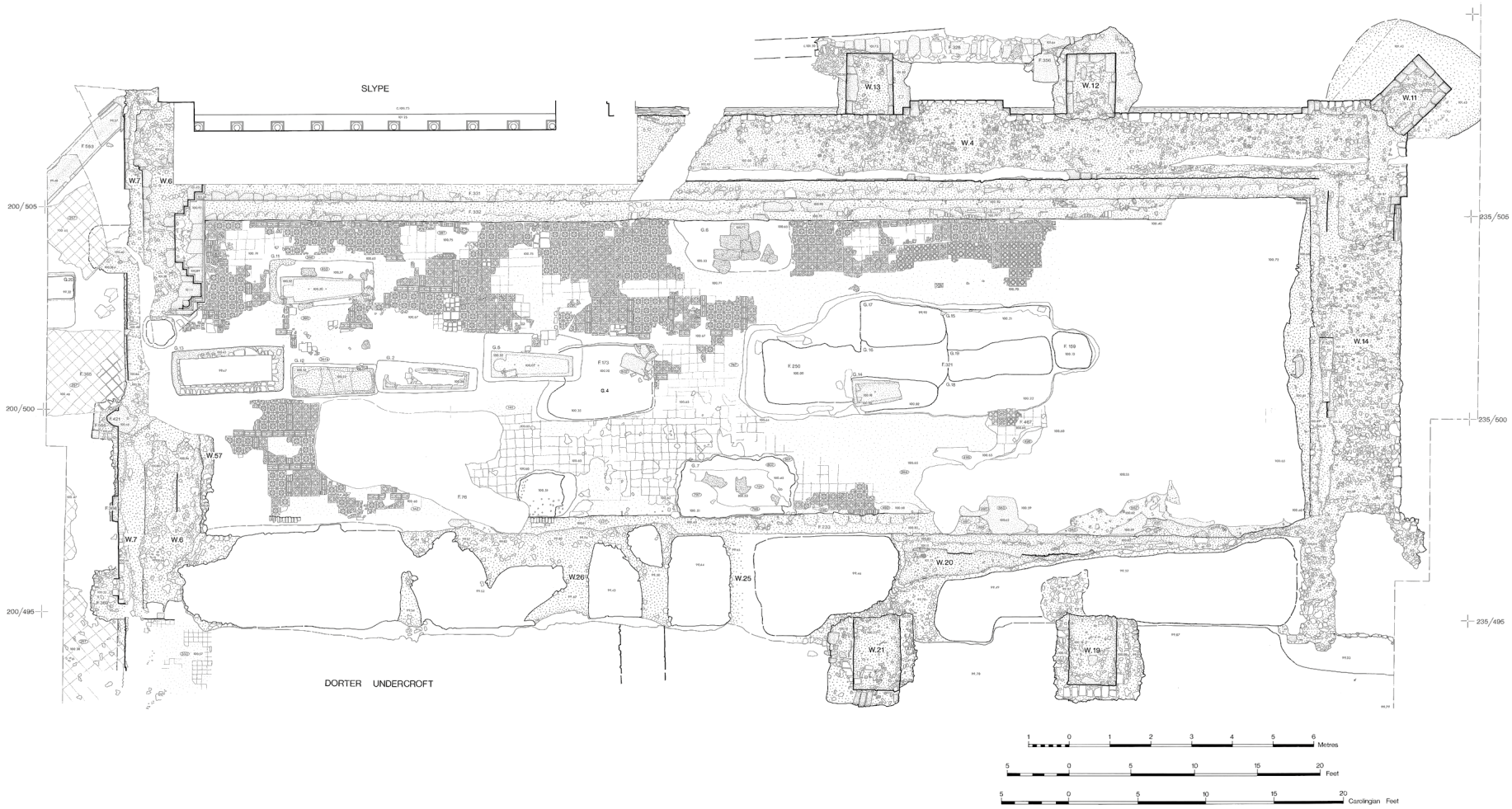


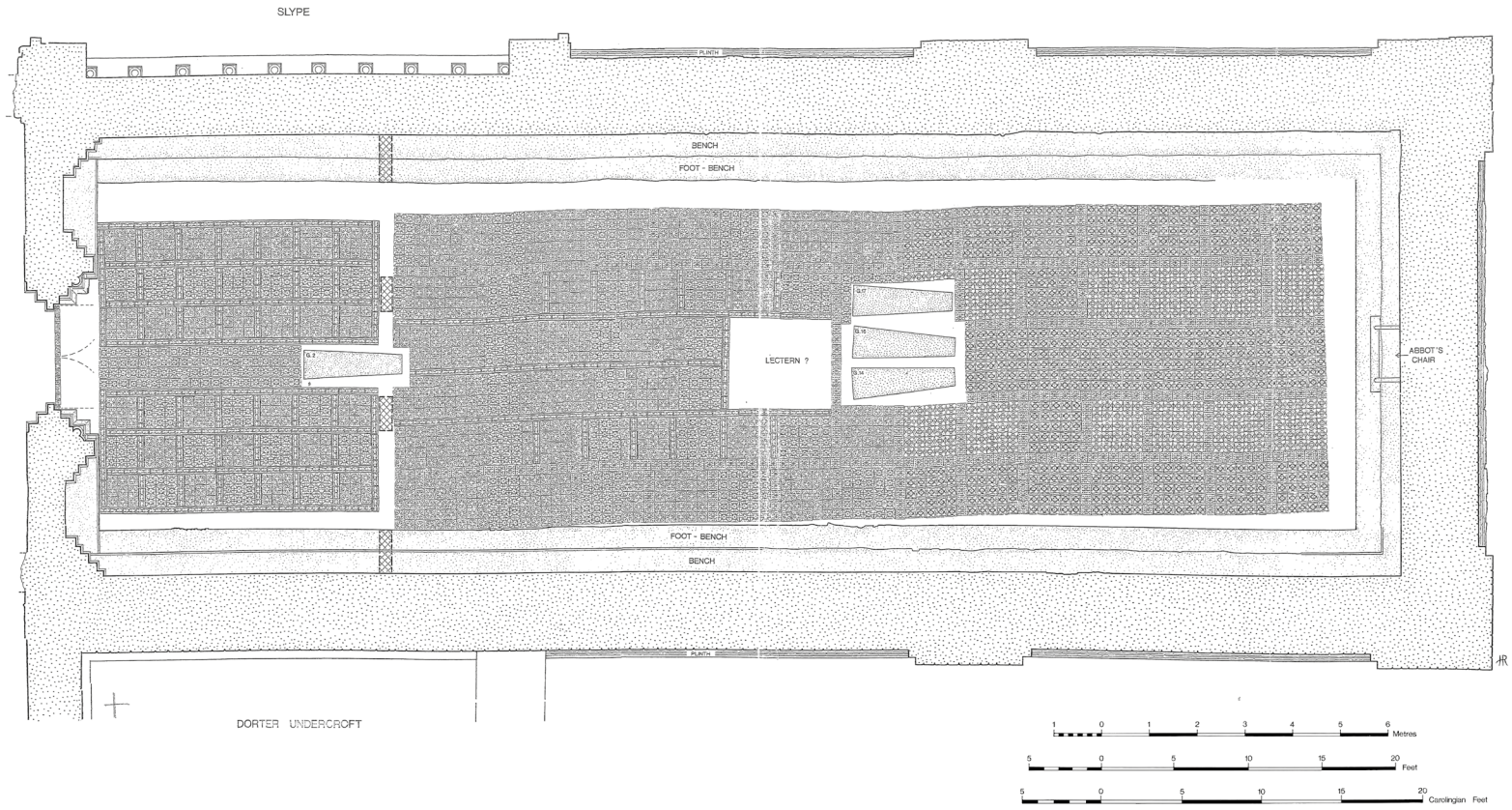
Illus. A.II.4. The Romanesque tiled floor (RDFT) of the third chapter house: the evidence of the tiles found in position and the pattern of missing tiles left in the mortar bedding.

http://doi.org/10.32028/9781803277080-Illus-A-II-5



Illus. A.II.5. The Romanesque tiled floor (RDFT) of the third chapter house: the extent of the tiles found in position.

http://doi.org/10.32028/9781803277080-Illus-A-II-6



Illus. A.II.6. The Romanesque tiled floor (RDFT) of the third chapter house: interpretation and reconstruction.

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