Anglo-Saxon Pits and a Medieval Kitchen at The Queen's College, Oxford

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with contributions by Leigh Allen, Martin Allen, John Blair, Paul Booth, Dana Challinor, John Cotter, Alison Kelly, David Mullin, Rebecca Nicholson, Cynthia Poole, Ian Scott, Ruth Shaffrey, Wendy Smith, and Lena Strid

SUMMARY

In July 2008 Oxford Archaeology (OA) carried out an excavation at The Queen's College (Queen's) in advance of the construction of a new kitchen basement. The excavation uncovered tenth- and eleventh-century pits indicative of settlement within the north-eastern quarter of the defended town, or within a suburb immediately outside. The foundations of the college's fifteenth-century west and north ranges were also revealed, and the medieval kitchen was seen to lie partly below its more recent counterpart. Combined with previous archaeological investigations and historical illustrations, the findings provide a near complete picture of the layout of the medieval college. They also supply much information about fellows' diet.

GEOLOGY AND TOPOGRAPHY

Queen's is on the northern side of the High Street, bounded by Queen's Lane to the north and east, approximately 500 m east of the centre of Oxford (Fig. 1). The site is on the second river gravel terrace at *c.*62 m OD, the underlying geology Oxford Clay.

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Before the College

The area later occupied by Queen's lay either within or just outside the eastern part of the Anglo-Saxon *burh*, thought to have been constructed at the turn of the tenth century.[1] An evaluation and watching brief carried out within the Provost's Garden in the west of the college (Fig. 2) in 1998 and 2001 revealed evidence for late-Saxon occupation in the form of a Saxo-Norman surface and an associated pit containing tenth-century metal-working slag. A nearby posthole also contained Anglo-Saxon pottery, but no structure could be defined. Much of the northern part of site had been truncated by thirteenth- and fourteenth-century pitting.[2] Excavations and observations around the site's perimeter have also produced evidence of Anglo-Saxon street levels, recorded during works on the High Street and Catte Street in 1979, 1980, 1981, and 1983.[3]

The site was located within the medieval walled town and was occupied by long narrow medieval tenements fronting the High Street. These tenements were presumably established before

[1] A. Dodd, 'Synthesis and Discussion', in A. Dodd (ed.) *Oxford Before the University*, Thames Valley Landscape Monograph, 17 (Oxford, 2003), p. 22.

[2] 'Provost's Garden, Queen's College, Oxford, Archaeological Evaluation Report', OA TS report (1998); 'Provost's Garden, Queen's College, Oxford, Archaeological Watching Brief Report', OA TS report (2001).

[3] A. Dodd, 'The Town', in Dodd (ed.), *Oxford Before the University*, pp. 258–64.

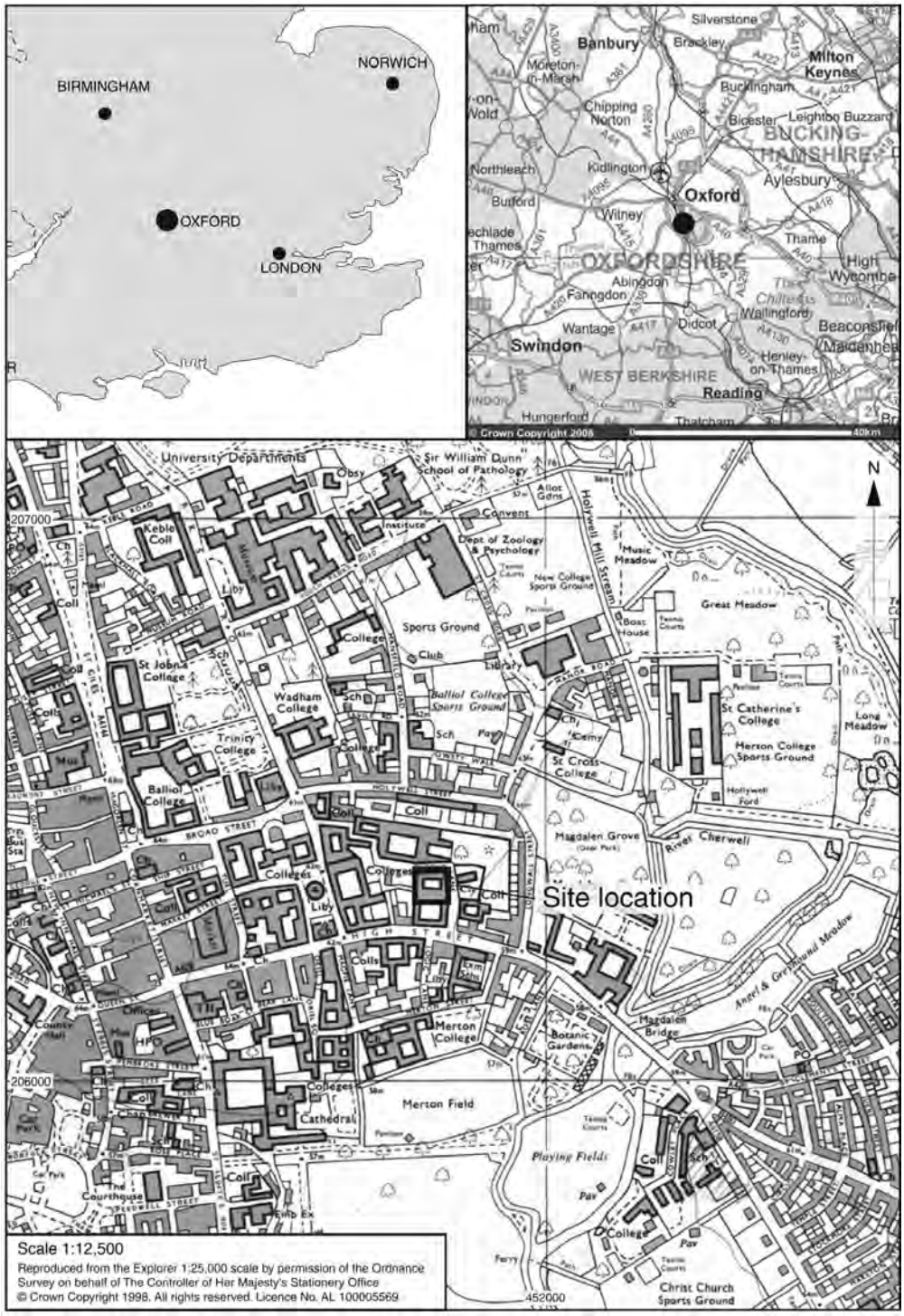

Fig. 1. Site location.

the Norman Conquest.[4] However, the foundation of Queen's and New College in the fourteenth century had a profound impact on the town plan in this area (Fig. 1). Prior to the construction of these colleges, Thorald's Lane (now New College/Queen's Lane) continued through the churchyard of St Peter in the East, and extended as far as the east town wall, with a turn off to the south. The medieval tenements fronting High Street extended back from the street for just over half the length of Queen's Lane – as they still do to the west of the college. The individual tenements are well known from college records, have been mapped by Salter, and survived in truncated form until the eighteenth century (Fig. 2).

The investigation area lay within the rear of these plots fronting the High Street and also within plots fronting Queen's Lane/Thorald's Lane.[5] The tenements on Thorald's Lane are less well understood, and their boundaries have not been identified, but there is little reason to suppose that they were not a continuous series of houses in the twelfth and thirteenth centuries. These properties included what may have been large town houses belonging to Peter Thorold and the Stockwell family, and near to St Peter's church, an academic hall where the monks of Canterbury studied in the 1330s.[6]

The Medieval College

Like many Oxford colleges, the process through which the foundation became a coherent collection of buildings was a gradual one. The site was mostly acquired by Robert de Eglesfield between 1340 and 1347, and the fellows of the new college (founded in 1341) must at first have occupied the existing houses.[7] Building of the front gatehouse onto Queen's Lane began in 1352, and by the end of the century a quadrangle with chapel and hall was complete. These medieval buildings did not encroach on the High Street frontage (Fig. 2).[8]

The medieval college buildings are recorded in map views by Agas (1577/88) and Loggan (1675), and in various topographical views (see Figs. 3 and 4; Blair, below). The last remaining buildings were also drawn by James Green in *c.*1719 as a conscious antiquarian record.[9] These illustrations all show that the space between the north range of the quad and Queen's Lane was used for orchards and gardens (open in 1577 and subdivided by 1675), and outbuildings (see Fig. 3).

The Post-Medieval College

The eighteenth-century rebuilding of Queen's swept away all previous buildings except the late seventeenth-century Williamson Building, and gave the college a rectilinear layout based on the new High Street frontage (Fig. 5). The new buildings were partially cellared, with a narrow wine cellar down the middle of the hall, and a cellar in the space between the hall and kitchen, but no cellar beneath the kitchen itself. The cellarage was linked to the cellars below the west range (buttery), and there is one short return to the north (just west of the kitchen), which may have given access for coal or other goods. The cellars are stone vaulted, but with few architectural features of note. There is also a crypt beneath the chapel, which was uncovered in 1976, when the coffins of former provosts were noted.[10]

4 H.E. Salter, 'Appendix C: Site of the College before the Buildings were Erected', in J.R. Magrath, *The Queen's College*, 2 vols. (Oxford, 1921), vol. 1, pp. 326–31.
5 H.E. Salter, *Survey of Oxford*, 2 vols., OHS, 14, 20 (1960–9), vol. 1, pp. 139–41.
6 Ibid. pp. 151–2.
7 Salter, 'Appendix C', pp. 326–7.
8 Magrath, *Queen's College*, vol. 1, pp. 81, 101.
9 *VCH Oxon.* 3, p. 138 and plates at pp. 125, 139.
10 'Calling on the Founder', *The Queen's College Record*, 7 (1976).

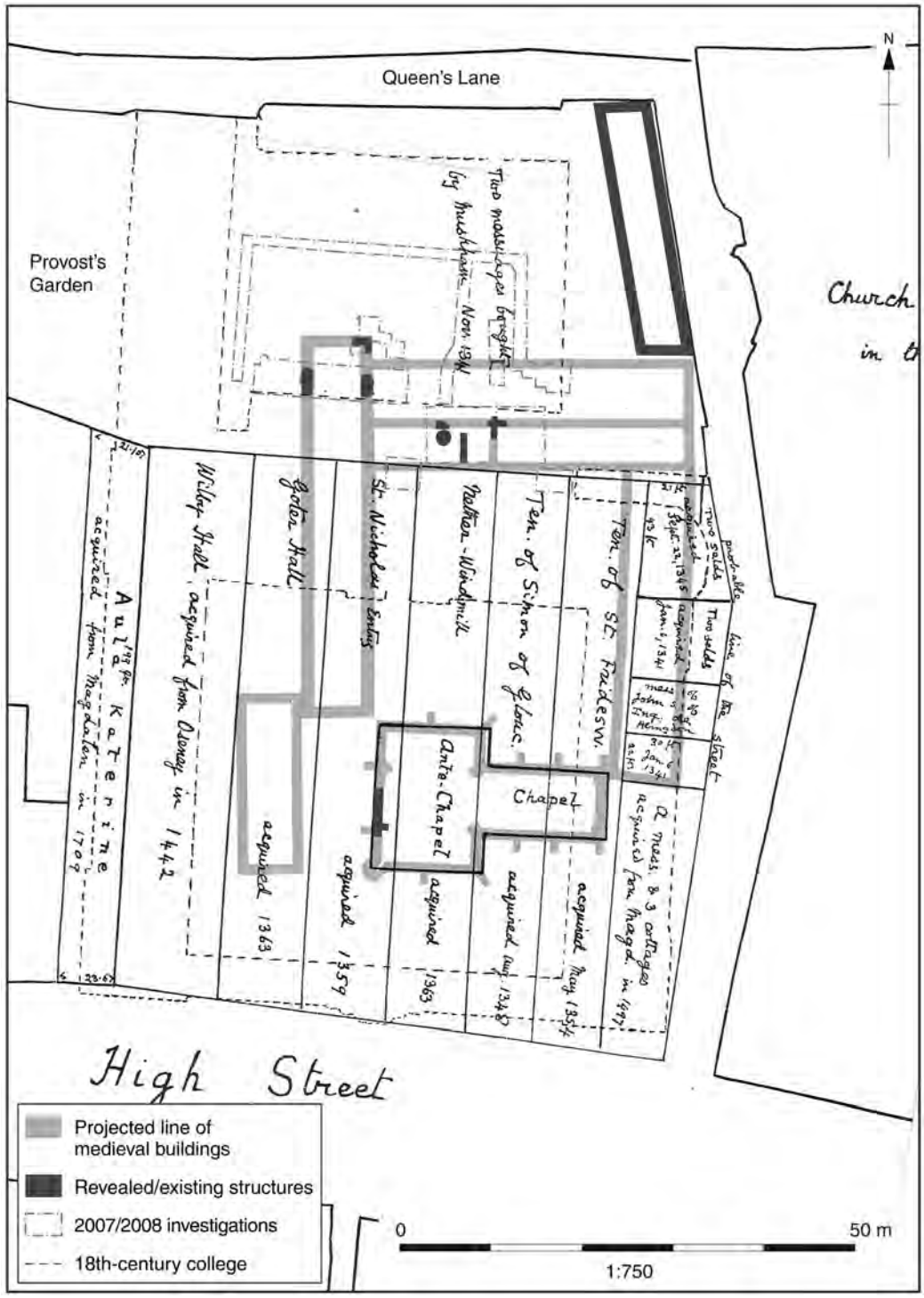

Fig. 2. The archaeological investigations in relation to the 1340 tenement boundaries as shown by Salter.

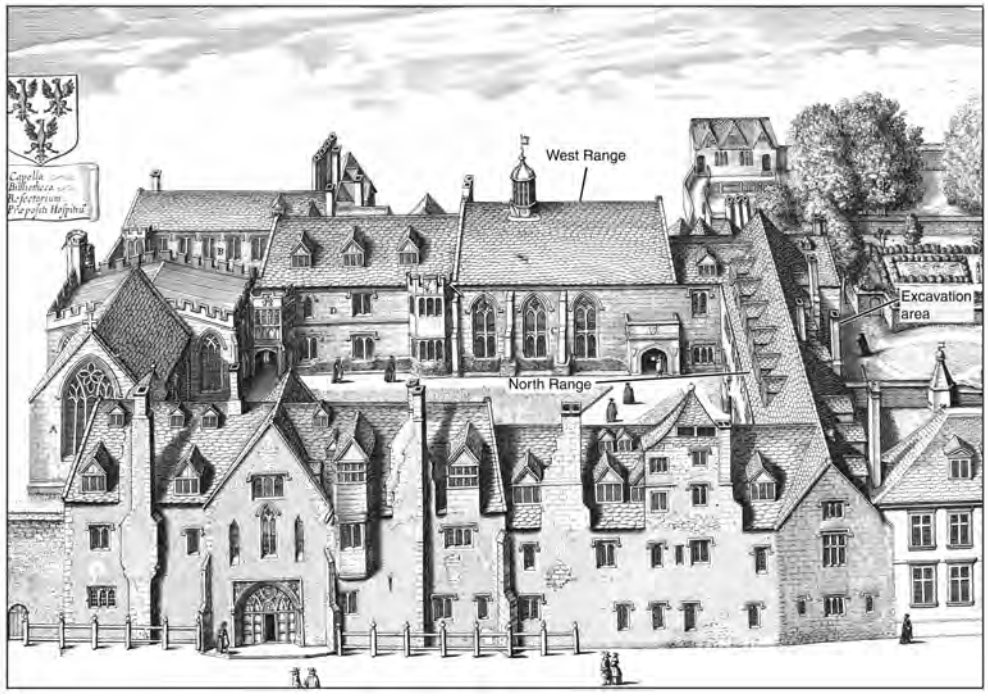

Fig. 3. The Queen's College in 1675: detail from Loggan's view looking west.

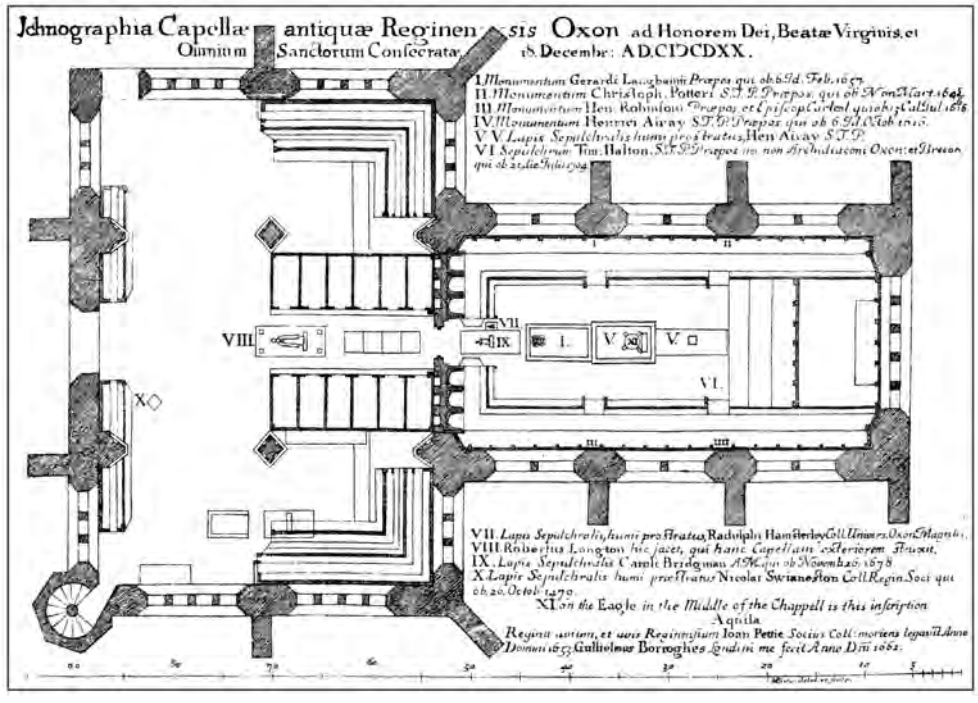

Fig. 4. Plan of the medieval chapel engraved by Michael Burghers.

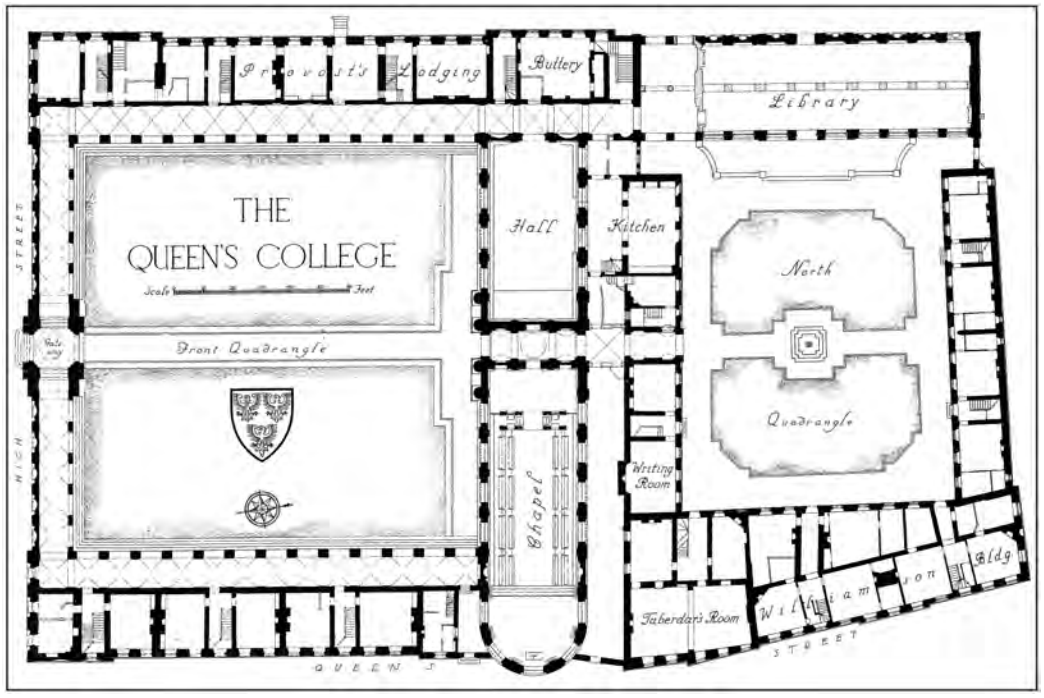

Fig. 5. The RCHM plan of the Queen's College.

The Medieval College Buildings: Sources and Investigations by JOHN BLAIR

The obliteration of medieval Queen's by its baroque successor was extraordinarily thorough. Of the existing buildings only the relatively recent Williamson Building was thought worth keeping (see Figs. 5 and 6), and even that was re-fronted on its inwards-facing side to match the rest of the Back Quad. Otherwise the early eighteenth-century builders started from scratch: the layout and orientation of buildings in their college owed nothing to former arrangements, unless one counts the convenient but perhaps fortuitous juxtaposition of the old and new kitchens, as revealed in the recent investigation (see below). Nor, so far as we know, had any large-scale plan of the old college ever been made. Reconstructing it is therefore something of a challenge.

By far the most important source is the beautifully detailed perspective engraving of Queen's published by David Loggan, along with matching engravings of other colleges, in his *Oxonia Illustrata* of 1675 (Fig. 3). Loggan's semi-bird's-eye looks westwards, across the east range and gatehouse towards the hall, the Provost's lodgings, and (in a very foreshortened view) the chapel. It is a consequence of this viewpoint that we can see the east-facing elevations of most buildings but little else, and also that whereas proportions from north to south can be scaled off the engraving with fair accuracy, proportions from west to east are much harder to reconstruct. Loggan's accompanying map of the whole of Oxford gives something closer to a plan view, but at an extremely small scale, as do the earlier city maps of Agas and Hollar.

The interpretation of Loggan's data in plan form therefore requires a series of fixed points. One of these has always been available at the south end of the Williamson building, whose slanting angle reflects the alignment of the earlier north range which it once abutted. Another came to light in 1903 with the discovery, under the central paved path of the Front Quad, of part of the west wall of the ante-chapel, enabling a detailed engraved floor-plan of the chapel by Michael Burghers

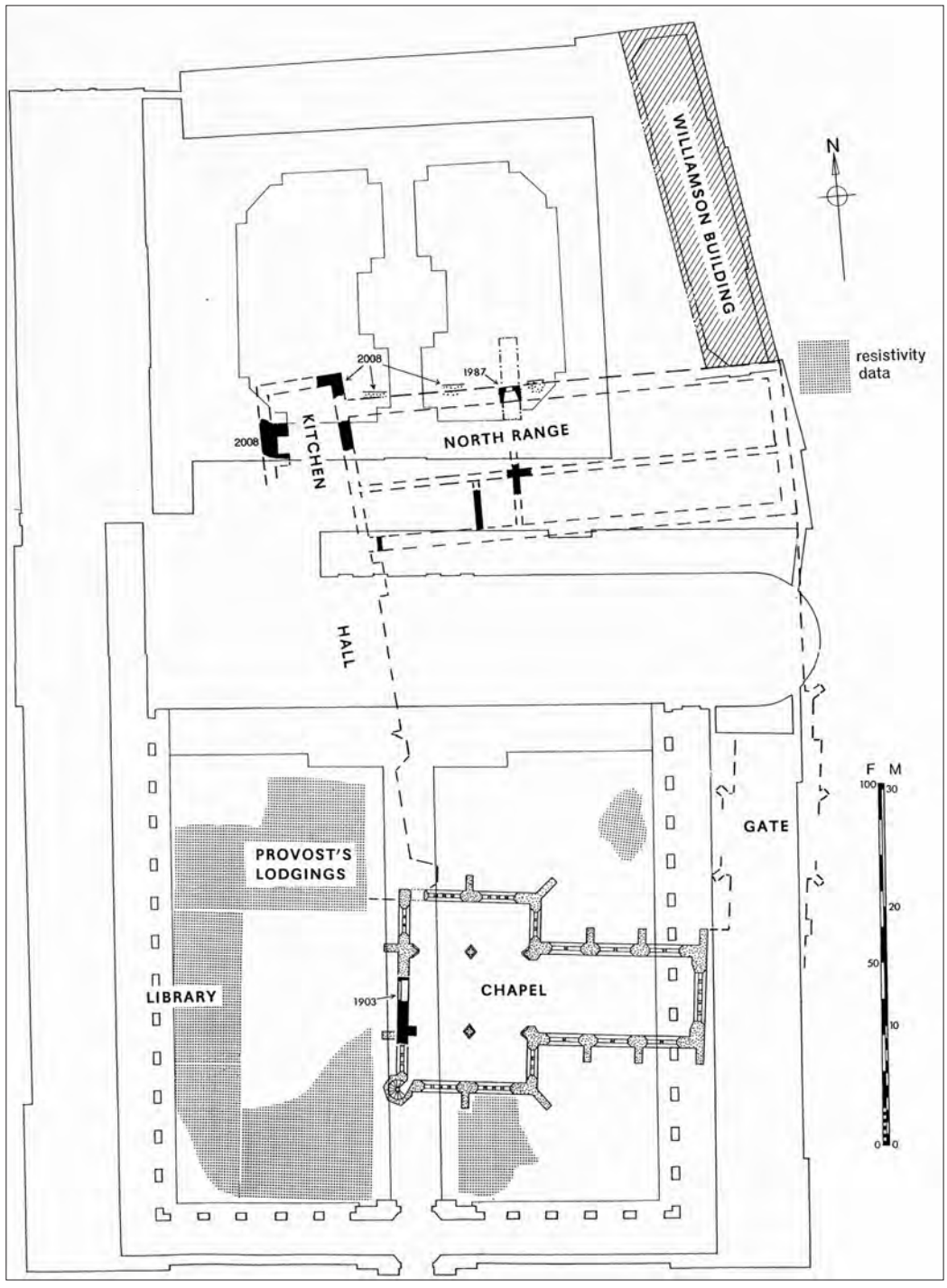

Fig. 6. The Queen's College: evidence for the plan of the medieval buildings in relation to the present plan.

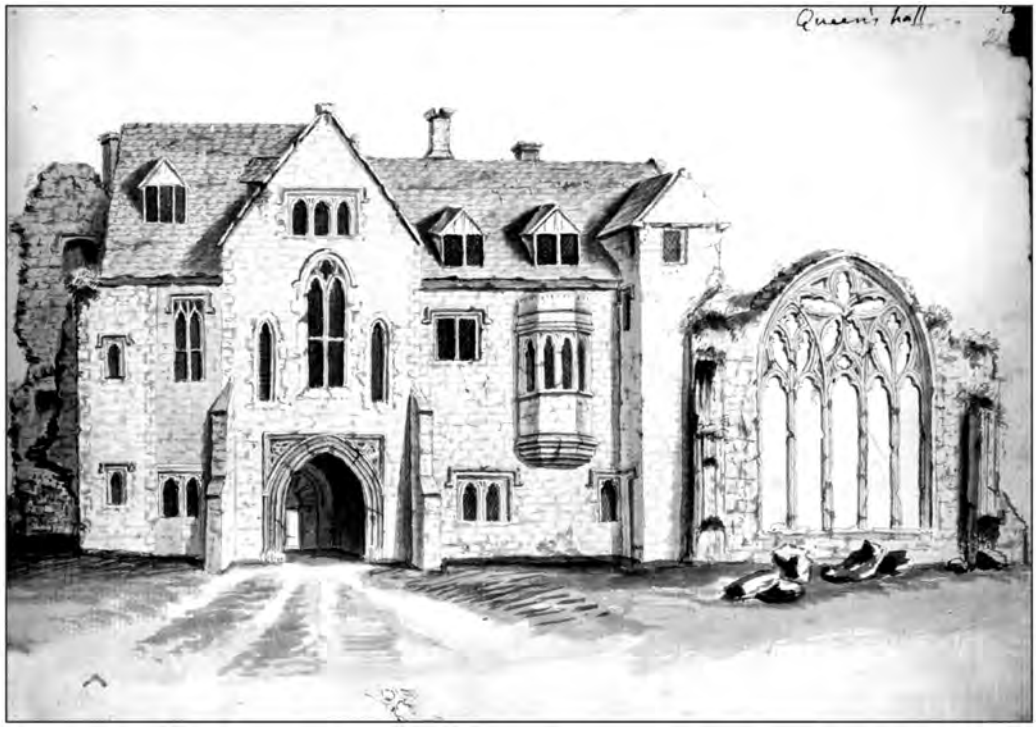

Fig. 7. The gatehouse and chapel remains looking east: drawing by J. Green, *c.*1719.
Reproduced by permission of English Heritage.

(Fig. 4) to be located accurately.[11] In 1987, a re-turfing programme permitted the excavation of a trench across the inferred line of the north wall of the north range, locating that wall accurately and fortuitously discovering a cellar window (see results below, and Fig. 18). All this information is transcribed on Fig. 6.

In 1988 a resistivity survey of the Front Quad was kindly undertaken by Arnold Aspinall, J.G.B. Haigh, and J.R. Pocock, of the University of Bradford. The results – high resistivity represented schematically by stipple on Fig. 6 – are inconclusive, but suggest that the western half of the quad, immediately west of the former chapel, contains footings of ranges around the west, north, and south sides of a small courtyard. This corresponds with Loggan's view to indicate with some certainty that we have here the library and Provost's lodgings. A new survey would almost certainly define the plan more clearly, as the technology of geophysics has advanced greatly in twenty years.

By far the biggest step forward has been through the excavation campaign of 2007–8. In September 2007 a watching brief was carried out, during geo-technical test-pitting, to investigate the foundations for the existing kitchen (built 1715). In March 2008 an evaluation and watching brief was carried out to determine the location of the west range, and to record deposits disturbed

[11] The wall footing is marked on a plan of 1903 in the Queen's archives. There are copies of the Burghers engraving in Bodl. Gough Maps 27 f. 46b and MS Top. Oxon. d. 340, no. 238, and it is reproduced in Magrath, *Queen's College*, vol. 1, plate 15. I was informed by Mr Wilde, the Clerk of Works who retired in 1983, that an area of decorated ceramic tiles (presumably the well-known ones with Robert Langton's rebus, below note 74) survives in the ante-chapel, under and immediately east of the present path.

by new service trenches (Fig. 10).[12] The results of these pieces of work are discussed with the results of the excavation below. It was realised beforehand that the new kitchen extension would impinge on the north range's cellar (or undercroft) found in 1987, and probably on its junction with the short range which, as shown by Loggan, extended northwards from the medieval hall. This junction was duly found, and the northern end of the hall extension was located and excavated. As Loggan shows, the porch and therefore the cross-passage were at this end of the hall: in other words it was the 'lower' end, and should have connected with the kitchen and other services. The excavated structure has indeed proved to be the medieval college kitchen, the massive oven in its west wall clearly relating to the triplet of chimney-pots which, in Loggan's view, can be seen rising beyond the west gable of the north range (Fig. 3).

The excavation of the kitchen now means that the internal corners of the medieval quadrangle can be located with some precision. All the evidence now available is presented on Fig. 6, where the gatehouse and the east face of the hall range are also sketched on the basis of Loggan's view. This plan provides a starting-point for future work on the individual components.

The very late date of demolition means that Queen's is a rather unusual case of a lost medieval building whose details are relatively well-served by graphical evidence. Loggan's engraving is of course the prime source, but it can be supplemented. The external face of the gatehouse is also shown – to a larger scale, and therefore with more detail of the woodwork – in another Burghers engraving.[13] Also providing data for the gatehouse area are a group of three pencil-and-wash drawings made by James Green, apparently in 1719 when this part of the old college stood ruinous and soon to be demolished.[14] These show the inner face of the gatehouse and its junction with the still-standing east end wall of the chapel (Fig. 7); the gate-passage looking eastwards, with a good view of the vaulting (Fig. 8); and the interior of the chamber over (Fig. 9).

A great deal more could still be done with the evidence presented here, through careful comparison to surviving buildings and with the aid of modern digital graphics. An illustration of the possibilities is John Goodall's detailed study of the tracery in the east window of the chapel (begun 1374), highlighting its singularity as a very late Decorated work and tracing its antecedents.[15] Another potential subject for detailed reconstruction would be the gatehouse, so well recorded by Loggan, Green, and Burghers. A third would be the open porch, supporting an oriel window linking the Provost's lodgings with the west end of the chapel, which was built in the 1510s by the benefactor Robert Langton.[16] The high quality of its masonry can be grasped from Robert Plot's admiration of

> the *flat Floor* of *Stone* over the Passage between the Reverend the *Provost*'s Lodgings, and the *Chappel* at *Queens-College*, born up only by the side *Walls* without any *Pillar*, though consisting of divers *Stones* not reaching the *Walls*, which yet indeed may very well be, since I was informed by the then Right Reverend *Provost*, *Bishop of Lincoln*, who pulled up the Boards of the *Room* above to view the *Curiosity*; the Stones are all *Cuneoform* [wedge-shaped], and laid like that they call *straight Arch-work*.[17]

[12] 'The Queen's College Oxford, Kitchen Extension, Archaeological Investigation Report', OA TS report, 2008.

[13] Copy in Bodl. G.A. Oxon. a. 58, p. 23, no. 28a; reproduced in Magrath, *Queen's College*, vol. 1, plate 10. A Burghers engraving of the hall is in MS Top. Oxon. c. 17 f. 136.

[14] Magrath, *Queen's College*, vol. 1, pp. xx, xxiv says that these drawings were 'made in 1751 by James Green under the instructions of Edward Rowe Mores, and now (1921) in the Provost's study'. They are now lost, and are reproduced here from National Monuments Record, negatives D39/7, D39/8, and D39/21. I am very grateful to John Goodall, Moira Birks, and Mike Evans for help with locating these. The date 1751 in fact refers to the engravings which Green subsequently made, copies of which are in Bodl. Gough Maps 27, ff. 46–8.

[15] J. Goodall, 'The Fourteenth-Century Chapel of Queen's and its East Window', *The Queen's College Record*, 7.2 (1996), 23–33.

[16] Magrath, *Queen's College*, vol. 1, pp. 165–7; J. Blair, 'Robert Langton's Porch', *Queen's College Record*, December 2010.

[17] R. Plott, *The Natural History of Oxfordshire*, 2nd edn (Oxford and London, 1705), p. 273.

Fig. 8. The gate-passage looking east: drawing by J. Green, *c.*1719. Reproduced by permission of English Heritage.

A surviving panel showing Langton's rebus on a shield between angels is visible on the Loggan engraving, in the crenellated parapet of this structure;[18] a newly-discovered carving of an angel holding a shield with the same rebus (below, Fig. 14) is evidently from the same source, perhaps the spandrel of the ground-floor arch. This sumptuous late Gothic structure deserves further study.

The colleges of medieval Oxford have of course been much-studied architecturally: the lost buildings of Queen's offer what are now some rather rare opportunities to test the skills of a good architectural historian.

[18] Magrath, *Queen's College*, vol. 1, plate 16; J. Blair, 'The Punning Arms of Robert Langton', *The Queen's College Record*, 7.2 (1996), pp. 33–4.

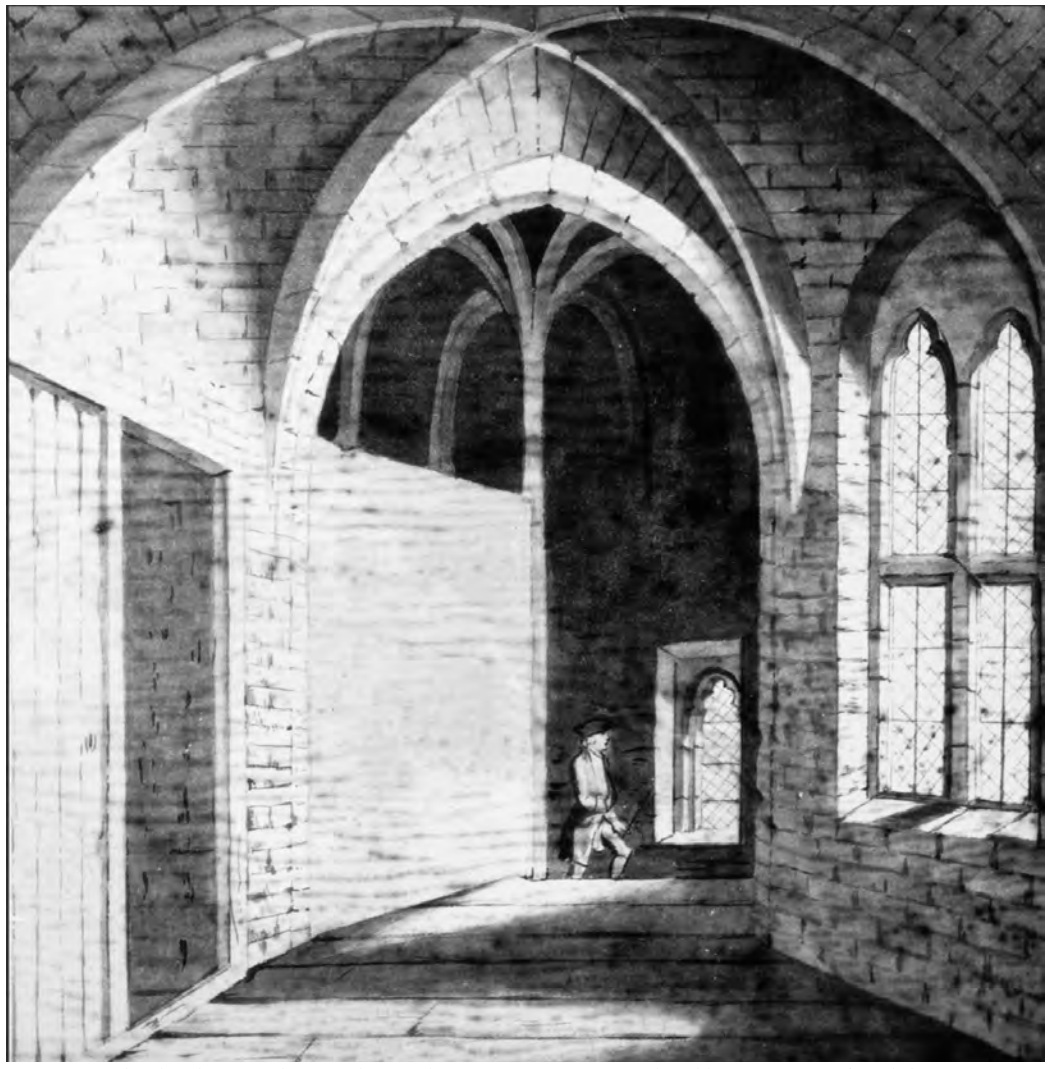

Fig. 9. The chamber over the gate: drawing by J. Green, *c.*1719. Reproduced by permission of English Heritage.

FIELDWORK METHODS AND RECORDING

The archaeological works were undertaken in response to plans by Queen's to extend the existing college kitchen. The kitchen extension excavation comprised a 14 m by 4 m wide trench within the south-western corner of the Back Quad, and a watching brief was also carried out during the underpinning of the existing kitchen walls, and on the excavation of all ground works (Fig. 10). In general the ground works did not impact on deposits pre-dating the eighteenth-century college, but natural geology was revealed during the underpinning of the kitchen walls. The underpinning was subject to a watching brief as it was thought likely that the construction of the eighteenth-century college and its cellars had removed all evidence of the earlier buildings. However, deep medieval deposits did survive to the south of the existing kitchen, and the nature of the underpinning works meant that the extent of the deposits could not be fully understood. All overburden and

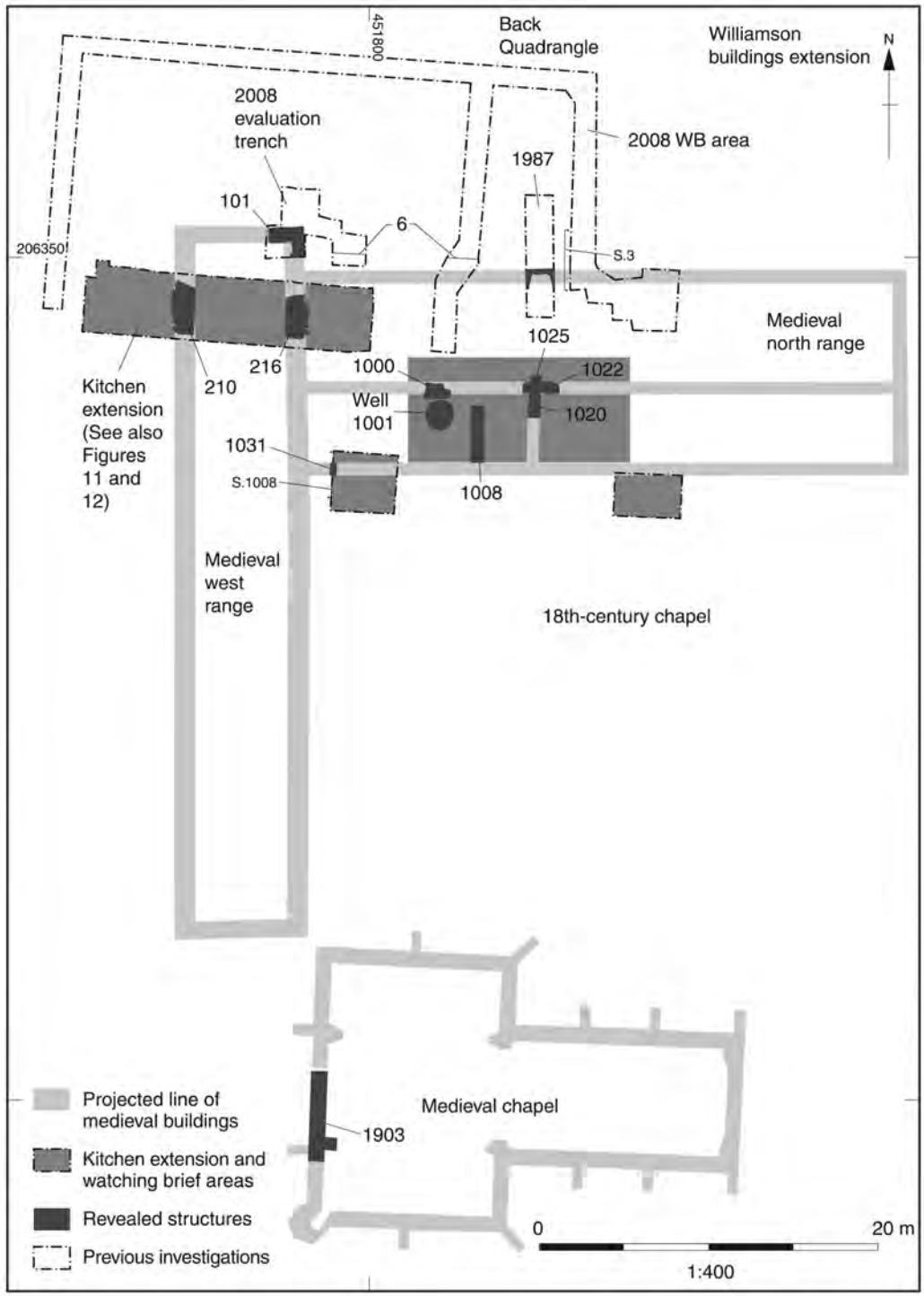

Fig. 10. Investigation areas and conjectured reconstruction of medieval college.

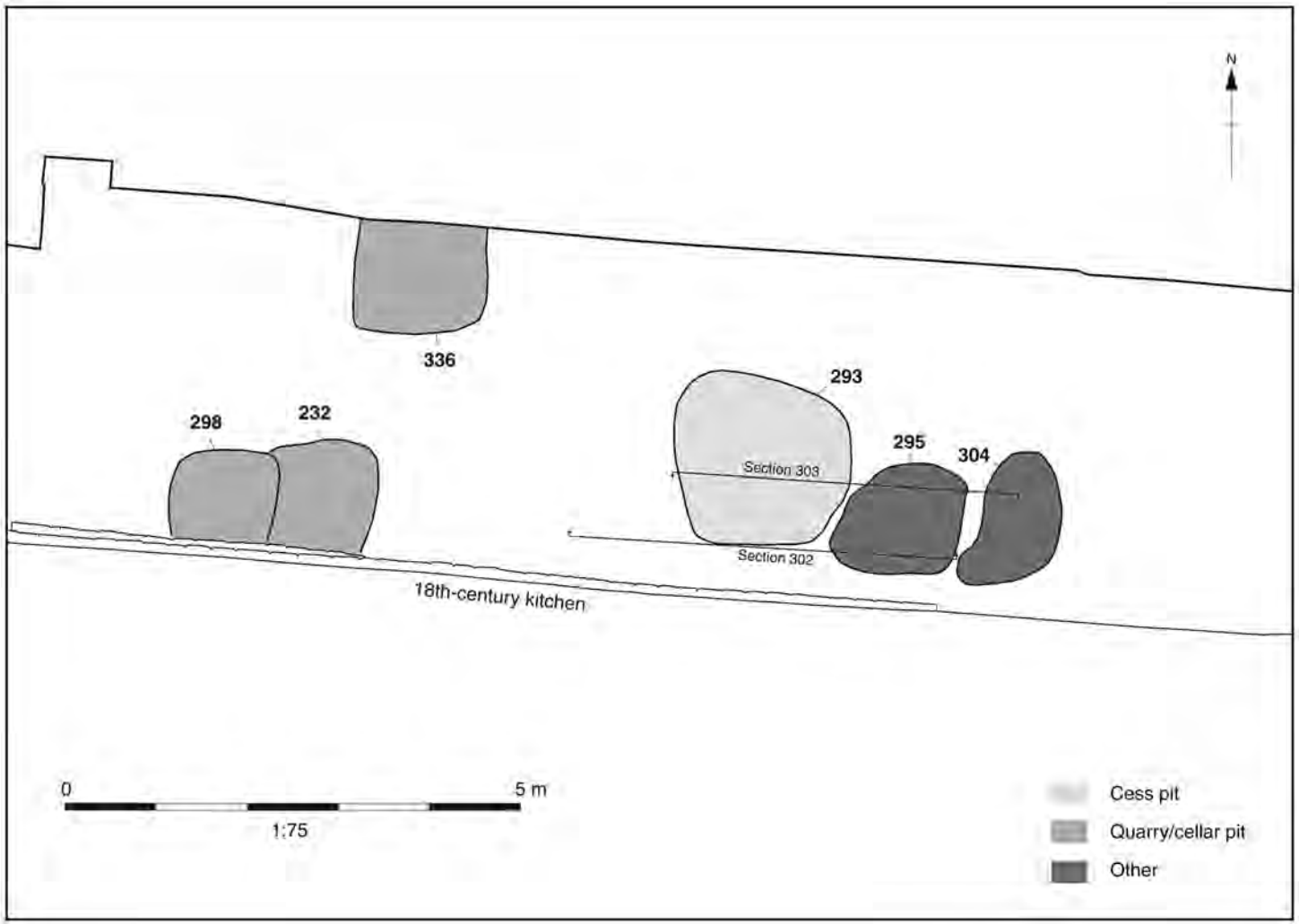

Fig. 11. Tenth- to eleventh-century pits.

eighteenth-century construction material was removed by a mechanical excavator fitted with a toothless bucket, a process carried out under close archaeological supervision. The eighteenth-century construction material had been fully recorded in the kitchen extension evaluation and John Blair's 1987 trench, and it was not considered necessary to carry out further work. In general machine-excavation proceeded to the top of the medieval college walls and associated soil horizons, any deeper deposits were subject to hand excavation with bulk deposits subject to additional mechanical excavation once they had been fully recorded and understood. All work followed procedures laid down in the OAU Fieldwork Manual.[19]

DISCUSSION

Late Anglo-Saxon Settlement

Late Anglo-Saxon occupation evidence was revealed within the kitchen extension trench and six tenth- or eleventh-century pits were recorded (see Fig. 11, plan). Pit 293 contained an Æthelred II (978–1016) silver cut halfpenny in its upper fill (294), in circulation from 997–1003 (see Allen, below), and the pottery recovered from the pits was also indicative of late tenth-century occupation (see Cotter, below). The pits were probably waste or cess pits, although it is possible that some may have functioned as cellar pits, being flat based and vertically sided, but no clearly structural evidence was revealed. If the pits were cellar pits their small size means that they must have functioned only as storage areas.

The pits most likely lay within tenements extending back from the High Street, with the street frontage occupied by post-holed or cellared buildings such as those found in elsewhere in Oxford. The natural reddish loess survived within the central part of the kitchen excavation, but there was no evidence for cultivation of the site. Large pits were located to the rear of late Anglo-Saxon structures revealed at Oxford castle and were used for general refuse rather than specifically cess, and the Queen's pits may have had a similar function.[20] The fish bone assemblage from cess pit 293 consisted almost entirely of eel and herring, the latter probably imported as pickled fish while the eels are likely to have been fresh and obtained locally. Bones from these fish are commonly found together in cessy deposits and were evidently regularly available and popular. Both herring and eel were also common in an eleventh-century pit excavated at Lincoln College, for example.[21] Eels were trapped in quantity in the tenth and eleventh centuries and Domesday shows that the abbot's mill in Eynsham yielded 450 eels a year.[22] At nearby Oxford castle the substantial late Anglo-Saxon fish assemblage was dominated by bones from small freshwater fish, particularly eels, and a few eel bones were also recorded from Anglo-Saxon pits at 7–8 Queen's Street.[23] Small pike, also identified in Queen's cess pit fills, has been identified from Anglo-Saxon deposits at St Aldates and mid to late eleventh-century deposits at Lincoln College, while at Eynsham Abbey a range of sea and freshwater fish were recovered from Anglo-Saxon deposits.[24]

It is still unclear whether the occupation evidence outlined above would have lain within the defended late Saxon *burh*, or in an eastern suburb. It has been suggested that the *burh*'s original

[19] D. Wilkinson (ed.), 'Fieldwork Manual', OAU TS report (1992).

[20] A. Norton et al. 'Excavations at Oxford Castle', forthcoming.

[21] C. Ingrem, 'Bird, Fish and Small Mammals', in Z. Kamash et al., 'Late Saxon and Medieval Occupation: Evidence from Excavations at Lincoln College, Oxford 1997–2000', *Oxoniensia*, 67 (2002), pp. 252–5.

[22] *VCH Oxon.* 12, pp. 141–2.

[23] R.A. Nicholson, 'The Fish Remains', in 'Excavations at Oxford Castle', forthcoming OA TS monograph; B. Wilson and A. Locker, 'Animal Bone from 7–8 Queen Street', in Dodd (ed.), *Oxford Before the University*, p. 361.

[24] M. Armour-Chelu, 'The Faunal Remains from 56–60, St Aldate's, 30–31 St Aldate's (Land adjoining the Police Station) and 24–26 St Aldate's (the Police Station)', in Dodd (ed.), *Oxford Before the University*, p. 348; Ingrem 'Bird, Fish and Small Mammals', pp. 252–5; K. Ayres, A. Locker, and D. Serjeantson, 'Phases 2f–4a: the Medieval Abbey: Food Consumption and Production', in A. Hardy, A. Dodd, and G. D. Keevill (eds.), *Aelfric's Abbey. Excavations at Eynsham Abbey, Oxfordshire, 1989–92*, Thames Valley Landscapes Monograph, 16 (Oxford, 2003), p. 360.

eastern limit lay to the west of Queen's, on the line of Catte Street/Magpie Lane, before it was extended to the east in the eleventh century, possibly as a result of renewed Danish attacks.[25] This hypothesis is based on the topography of the town, parallels with nearby towns such as Wallingford (Berks.) and Cricklade (Wilts.) and the evidence of the Burghal Hidage.[26] However, the only archaeological evidence to support this theory is a short section of wall seen in the Clarendon Quadrangle excavation; an 'early' wall turned south-east from the line of the later medieval town wall.[27]

There is opposing evidence to suggest that the *burh* was built in one phase, and the east gate was always located at the junction of the High Street and Longwall Street; the primary street surface within the central and eastern areas of the *burh* are both constructed from pebbles, whilst later surfaces were constructed of gravel.[28] The earth ramparts revealed within the western, central and eastern parts of the *burh* are also of similar construction, whilst later additions to the ramparts seen within the Oxford castle excavations comprise bulk dumped deposits rather than banded deposits of turf and soil.[29] At Queen's the presence of late tenth-century occupation immediately to the east of the assumed town limits, adds further weight to the idea that the town defences were built in one phase, or extended very shortly after their initial construction.

Alternatively, if the hypothesis of an eleventh-century extension to the *burh* is maintained, the presence of Anglo-Saxon occupation at Queen's would suggest a densely occupied suburb. Oxford was thriving by the eleventh century and settlement may have spilled beyond the town's defences, perhaps necessitating the need for an eastern extension. The surface and metalworking debris revealed in the Provost's Garden evaluation add further weight to the evidence for tenth-century occupation of the site.[30] Evidence for late Anglo-Saxon occupation also survives on the opposite side of the High Street, where possible cellar-pits and Anglo-Saxon pottery were identified at the site of the Angel Inn, during work in advance of the new Examination Schools, and pits, postholes and beam slots dated to the first half of the eleventh century were recorded further south on Logic Lane.[31]

However, there is currently no evidence for late-Saxon suburban development to the north and west of the limits of the *burh*, and occupation to the south developed because of the Thames crossing.[32] Rapid expansion of late Anglo-Saxon urban settlement is known in the west of Winchester, as a result of population growth in the late ninth century, but Winchester was the English capital at the time and its development is atypical of southern towns in general.[33] Although rapid tenth-century development is a feature of Danelaw towns such as Lincoln and York, it seems likely that towns in the south of England developed more slowly.

[25] Dodd, 'Synthesis and Discussion', p. 22. For detailed discussion and suggested re-interpretation of Oxford's early development see Haslam, above, pp. 15–34.

[26] J. Munby, 'The Eastern Extension', in Dodd (ed.), *Oxford Before the University*, p. 24–5; T. Hassall, 'Topography of Pre-University Oxford', in C.G. Smith and D.I. Scargill (eds.), *Oxford and its Region* (Oxford, 1975), p. 33; T. Hassall, 'Archaeology of Oxford City', in G. Briggs, J. Cook, and T. Rowley (eds.), *The Archaeology of the Oxford Region*, Oxford University Dept. of External Studies (1986), p. 122.

[27] Munby, 'The Eastern Extension', p. 24; J. Munby, 'Excavations on the Line of the City Wall in the Clarendon Quadrangle, 1899', in Dodd (ed.), *Oxford Before the University*, pp. 182–3.

[28] Dodd, 'Synthesis and Discussion', pp. 28–9.

[29] Norton et al., 'Excavations at Oxford Castle', forthcoming.

[30] 'Provost's Garden, Queen's College … Evaluation Report'; 'Provost's Garden, Queen's College … Watching Brief Report'.

[31] R.L.S. Bruce Mitford and E.M. Jope, 'Eleventh and Twelfth Century Pottery from the Oxford Region', *Oxoniensia*, 5 (1940), pp. 42–4; E.M. Jope, 'Late Saxon Pits under Oxford Castle Mound: Excavations in 1952', *Oxoniensia*, 17/18 (1952/3), p. 97; A. Dodd, 'Introduction', in Dodd (ed.), *Oxford Before the University*, p. 4; F. Radcliffe, 'Excavations at Logic Lane, Oxford', *Oxoniensia*, 26/27 (1961–2), p. 45.

[32] Dodd, 'Synthesis and Discussion', pp. 33–5.

[33] M. Biddle, 'Albert Reckitt Archaeological Trust Lecture, The Study of Winchester: Archaeology and History in a British Town, 1961–83', in E.G. Stanley (ed.), *British Academy Papers on Anglo-Saxon England* (Oxford, 1986), p. 329; A. Vince and J. Young, 'Mapping the Saxon City', *Lincoln Archaeology*, 3 (1991), pp. 23–8.

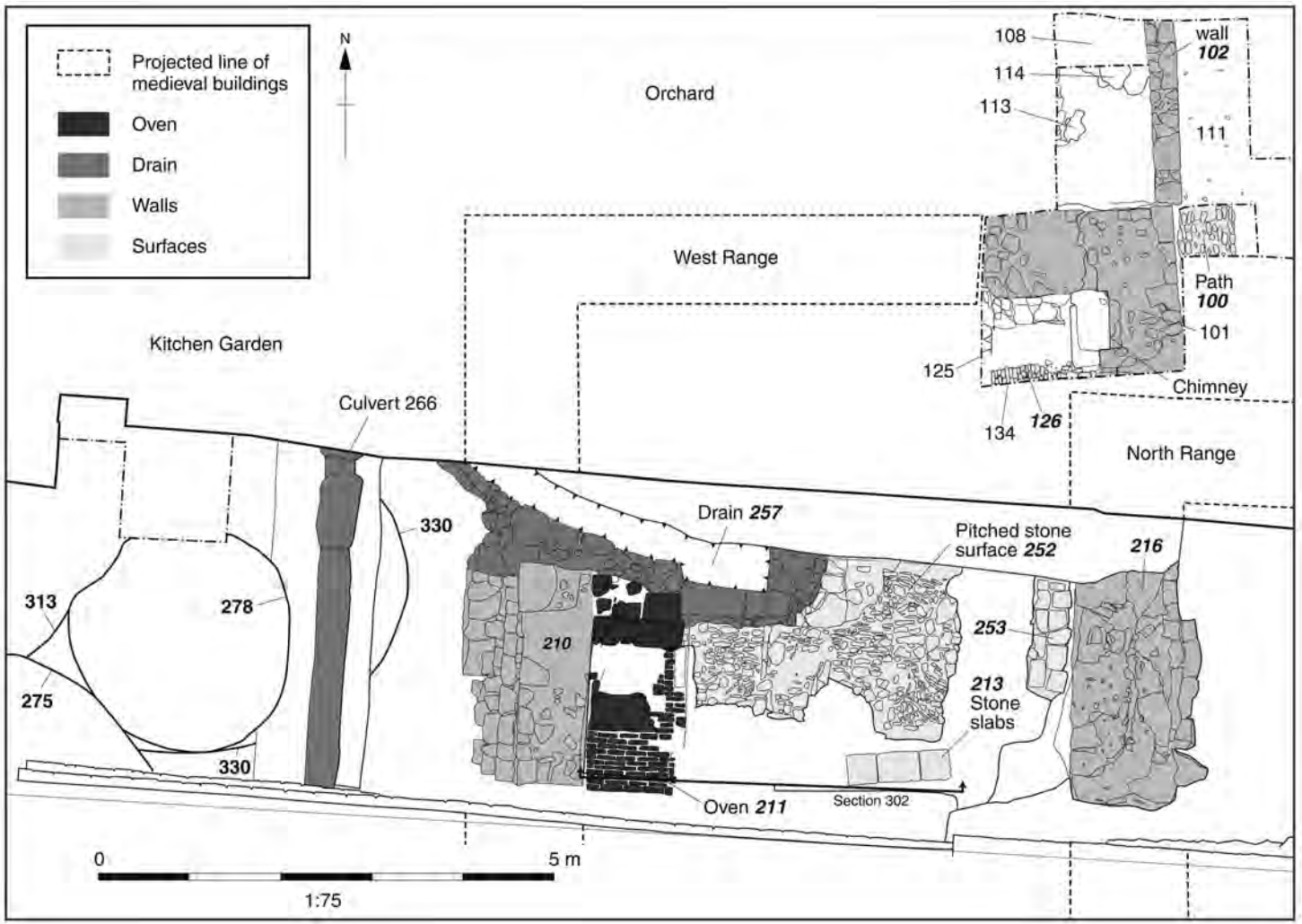

Fig. 12. Medieval west and north ranges.

Late Eleventh- to Fourteenth-Century Activity

Little evidence of early post-Conquest activity was revealed, although a dog burial may have represented backyard activity within the tenement of St Nicholas Entry (see below). A stylus dating from between the late twelfth and fourteenth centuries (S.F. 17) was also recovered from a soil pre-dating the construction of the medieval west range, and may be associated with earlier college activity or indicative of the presence of scholars on the site prior to the foundation of the college. Although residual late eleventh- to thirteenth-century pottery was recovered, the apparent absence of similarly dated cut features or structural evidence is most likely a result of the small size of the investigation area, and the clearance of the site prior to the construction of the college.

The Early College and West Range (Fourteenth to Early Eighteenth Centuries)

Robert de Eglesfield began purchasing tenements in the north-east of the city in 1340 to provide lodgings for scholars.[34] Existing properties within the tenements would have provided the earliest college buildings, prior to the construction of the buildings depicted by Loggan in his 1675 illustrations. The kitchen extension excavations revealed the northern extent of the west range, which predated the western limits of the north range (Fig. 12). By comparing the location of the ranges with Salter's plan of the pre-college tenement plots, it can be seen that the northern part of the west range and the whole of the north range are located within two messuages bought by William of Muskham in 1341, whilst the southern part of the west range is located within the tenement of Goter Hall and St Nicholas Entry, bought in 1363 and 1359 respectively (Fig. 2). The chapel was located within three eastern tenements and Nether Windmill (also known as Windmill Hall) was the latest purchase; a licence to hold it in mortmain was obtained in 1363 and it was formerly conveyed to the college in 1367.[35]

Despite occupation of the northern part of the site since 1352 and the tenement of Goter Hall and St Nicholas Entry since the mid 1360s, construction of the west range probably started shortly after 1399 when, following the demolition of the old kitchen (*coquina antiqua*), 136 loads of stone from Headington, and fifteen loads from Taynton near Burford, were brought to the site for a new hall or 'special works'.[36] The southern and central parts of the west range are described as the Provost's House and Dining Hall on Loggan's 1675 college engraving, and the northernmost section of the range was occupied by the kitchen; a large hearth or oven and floor levels with a large quantity of associated fish bone were revealed within the kitchen extension excavations. It seems likely that the west range was the new hall, and incorporated the dining hall to the south and the kitchen to the north. The kitchen may have originated as a detached building, like those of other colleges in Oxford, including Lincoln. Detached kitchens were common in the Middle Ages, probably through a fear of fire, but became integral parts of the main building by the fifteenth or sixteenth centuries.[37]

Summer and winter butteries are mentioned in 1392–3, as well as upper and lower storerooms (*promptuarii*), but these were probably located within or below existing tenement structures.[38] The formation of the quad may have been a gradual process, with the building regime dependent on founding endowments.[39]

As with excavations in other medieval colleges in Oxford, double-shelled oil lamps were recovered from rubbish pits in the kitchen garden. Such lamps only appear to be found on college

[34] Magrath, *Queen's College*, vol. 1, p. 63.
[35] Salter, 'Appendix C', pp. 328–9.
[36] Magrath, *Queen's College*, vol. 1, pp. 81–2.
[37] Kamash et al., 'Late Saxon and Medieval Occupation', p. 280.
[38] Magrath, *Queen's College*, vol. 1, p. 82.
[39] George Lambrick, personal communication, 2010.

Fig. 13. Fourteenth-century decorated floor tile.

sites, or on the sites of former academic halls in Oxford, presumably because students needed light to study by whilst the townsfolk slept.[40]

Within the kitchen excavation, the west range was seen to be 8 m wide with an internal dimension of 5.5 m At least six floor surfaces and a sequence of stone and brick hearths or ovens were present, the penultimate oven (247) constructed from 'Tudor bricks' and double chambered. The kitchen must have been an unpleasant place to work, with dog or cat faeces present within the kitchen floor waste below the brick oven. The make-up deposits were presumably derived from scraping up material from the kitchen floor, and the early floor layers and make-up deposits surrounding the hearths were so ash- and bone-rich that when the recovered pottery was cleaned it 'dripped' fish bones. The floors comprised beaten earth surfaces, pitched stone surfaces, and flagstones. At Lincoln College the kitchen floor comprised beaten earth overlain with bracken, and was paved only during the latter days of the kitchen.[41] At Queen's two re-deposited slip decorated floor tiles depicting eagles were recovered from post-medieval dumped deposits, and are indicative of highly decorative floors elsewhere in the college (Fig. 13). The west range roof was likely to have been covered with stone slates, possibly replaced with ceramic tiles in the fifteenth century. Fragmentary ceramic tiles of a previously unknown type were recovered from a soil within the kitchen garden (see above).

The college planned in the 1340s was to consist of twelve scholars or fellows and a provost, and by the beginning of the fifteenth century there were four to seven fellows living among tenements in the college.[42] The fifteenth-century kitchen would have catered for the provost and scholars as well as any visitors, and it may also have provided food for the servants. In 1341 the college servants were to include a butler or steward, a cook, a kitchen boy, a baker, a brewer, a boy to mill for the brewer and baker, a barber and porter, a gardener, a washerwoman, and a watchman.[43]

40 A. Norton, and G. Cockin, 'Excavations at 65–67 St Giles, Classics Centre, Oxford, *Oxoniensia*, 73 (2008), p. 171.
41 Kamash et al., 'Late Saxon and Medieval Occupation', p. 281.
42 Magrath, *Queen's College*, vol. 1, pp. 27, 132.
43 Ibid. p. 49.

Meals comprised two courses on ordinary days and three on the five main feast days.[44] As well as baking bread and brewing beer, in 1415–19 the college produced leeks, pepper, hempseed, grapes, herbs, beans, onions, and garlic within the kitchen garden. There is also a record of a hen-house (*domus gallinarum*) in 1394–5.[45] The kitchen garden occupied much of the college grounds, and the excavations showed that the area immediately to the west of the west range was used for dumping kitchen waste within pits, demonstrating at least a basic level of hygiene during the early days of the college. Probable compost heaps and ash heaps were located against the north wall of the west range.

Beech dominated the charcoal assemblage recovered from the waste pits, and would have been the main fuel source. There was a widespread change in the post-Conquest period to a preference for beech wood for fuel. Beech was not considered a useful timber tree at this time and was primarily valued for fuel (see Challinor, below). The kitchen bought all the fuel, which it sold to members of the college for their personal use and also provided fuel for the dining room.[46]

Fish and Animal Bone from the West Range by REBECCA NICHOLSON and LENA STRID

The animal and fish bone assemblages from the kitchen excavation shed further light on the eating habits of the medieval fellows and scholars. The meals of at least some of the college fellows and visitors must have been varied and, on special occasions, lavish, as demonstrated by the range of fish and meats represented in the college kitchen deposits. It is unlikely that the animal remains recovered from Queen's represent regular meals served to the *pueri* (poor boys who acted as choristers in the chapel). Except on the greatest feasts poor boys were to 'dispute', whilst the masters sat at table. The weekly allowance of food for a fellow in 1348 was 2s., whereas that for a *puer* was 8d. A number of the fish represented would also have been well beyond the means of the *pueri*, but may have been served at high table on special occasions.

Cattle and sheep would have provided the bulk of meat, as at other urban sites. Veal seems to have been favoured at Queen's more than at non-collegiate urban sites, its use possibly connected to dairy production, with excess males killed for meat. The Thames floodplain is very suitable for cattle grazing, although it is unclear if this was used mainly for fattening adult cattle before slaughter or for dairy production. Sheep were almost exclusively eaten as mutton; the low number of young lambs may reflect an emphasis on wool production in the Oxfordshire region. It is difficult to estimate the amount of pork, since it was often eaten preserved and filleted. This meat may therefore have been more common than is implied by the bone assemblage. The floor and pit deposits were also rich in bird and fowl bones.

Animals associated with a high-status diet, such as deer, swan, and heron, were present in small numbers, as at Merton College. (Lincoln College is more similar to urban Oxford assemblages, with small numbers of deer and no high-status birds.) In the post-Conquest period, deer hunting was a prerogative of the nobility and venison was rarely sold on the open market. It is unclear whether the deer remains in the college assemblages derived from lordly gift, from butchers in Oxford (who may have bought the meat from gamekeepers or poachers), or from scholars' own poaching exploits, which are well recorded in the later Middle Ages.[47] The remains of at least eight rabbits may be indicative of a feast in the late fifteenth or sixteenth century.

The fifteenth- and sixteenth-century kitchen floor deposits and pit fills were also rich in remains from a wide range of fish, some probably preserved. They included larger and small cyprinids, gurnards, sea breams, smaller gadids, flatfish, salmon, trout, conger eel, thornback

[44] Ibid. p. 55.
[45] Ibid. pp. 85–6.
[46] Ibid. p. 346.
[47] N. Sykes, 'The Impact of the Normans on Hunting Practices in England', in C. Woolgar et al. (eds.), *Food in Medieval England: History and Archaeology* (Oxford, 2006), p. 172; S.A. Mileson, *Parks in Medieval England* (Oxford, 2009), p. 156.

Fig. 14. Carved stone depicting an angel holding a shield with the rebus of Robert Langton (context 1015).

ray, and pike. The ubiquity of fish bones and scales within these deposits demonstrates that the college regularly purchased both sea and freshwater fish and probably had regular contact with merchants operating from one or more ports on the south coast. Other collegiate, religious, and aristocratic households also enjoyed a range of fish, and the assemblage has many similarities with that reported from a smaller group of fifteenth- to sixteenth-century fish remains from Merton College, the relatively small fifteenth-century fish bone assemblage from Lincoln College, a very small fifteenth- and sixteenth-century fish assemblage from Hinxey Hall, and a more substantial assemblage from the mid thirteenth to fifteenth-century deposits at Blackfriars. All contain a relatively wide range of taxa, indicating both the variety of fish on college and monastic menus and the availability of sea fish in Oxford at this time. With the exception of the freshwater fish, which are not now commonly eaten in England, most of the fish are commercially available in Oxford today. Sturgeon, however, is now extremely rare in British waters and rather than the flesh, sturgeons are better known today for their highly prized roe (caviar).

The most ubiquitous fish in the fifteenth and sixteenth centuries were pickled herring and dried and salted cod (and related gadids, known by a number of names, most commonly as 'stockfish'); these fish were staples of the medieval diet since they could be stored for long periods. During the

Middle Ages the church imposed numerous 'fish days' when meat could not be eaten, so inevitably the trade in fish burgeoned and the trade in herrings and stockfish was particularly important. A Magdalen College account from 1537 shows both river fish and salt fish were purchased for college meals. For Lent, salt fish replaced meat in the basic Oxford college dinner from the fifteenth to the seventeenth centuries. Eels also may have been preserved, although it is likely that eels were supplied fresh from rivers and ponds on the college estates, a probable source too of the cyprinids, perch, pike, and possibly the trout.

The burbot, recorded in the fill of pit 330, may also have come from local rivers but these fish, now extinct in Britain, are thought originally to have been restricted to the rivers of eastern England. In the late sixteenth century burbot was particularly common in the fens, but it is possible that it may once have been found in the Thames and finds of bones from this fish in late Anglo-Saxon deposits from Oxford castle imply a local source. Other fish, however, are likely to have been brought fresh from the coast – which would have entailed rapid transportation. Gurnards, sea bream, and flatfishes were all probably imported as fresh fish and it is likely that fish originally came from the London markets, although Queen's also held estates in and around Southampton from the time of Edward III. By around 1360 fishmongers in St Aldates were selling herrings, stockfish, and 'Winchelsea fish' from over eighteen stalls.

Whether the sturgeon found in pit 330 was fresh or preserved is unclear, but either way sturgeon are usually considered to be a sign of high status. Most finds are from religious establishments, including Oxford Blackfriars, where it seems to have been common, Eynsham Abbey, and St Mary's Abbey, Winchester. It is likely that this fish was purchased for a banquet or other special occasion.

As an indication of the relative value of fish commonly represented in the Oxford samples, Dyer lists herring as costing ¼d. each in 1461, plaice/flounder ½d., eel 1½d., perch 2d., chubb 4½d., pickerel (young pike) 8d., and pike 12d.[48]

The North Range (Fifteenth to Early Eighteenth Centuries)

The north range was 12 m wide and cellared, so that floor-level was 1.5 m below that of the west range (Fig. 12). The cellar extended along the length of the range and may have formed an undercroft, but no evidence of any vaulting survived. The range was divided into two parts by a central wall; a northern window was revealed in Blair's 1987 trench, and room divisions were also evident. The north wall was rendered and a stone floor was evident in section to the south. The cellar's use could not be determined, though possibly it was used as a cold store for the kitchen. The north range cellar was clearly constructed after the west range, but is not clear whether the above-ground structures were contemporary. If the west range kitchen did originate as a detached building (see above), the eastern wall of the west range must have been partially demolished to facilitate the construction of the north range. The cellar may have been a later addition still, as at Lincoln College, where cellars are known to have been inserted under both the Buttery and Hall in the seventeenth century.[49]

A carved stone depicting an angel holding a shield displaying the rebus of Robert Langton was recovered from the fabric of the eighteenth-century kitchen wall, within the footprint of the north range. The stone had been re-used but possibly originally formed the detail in the left-hand spandrel of the archway into the west range (Fig. 3).[50] The figure's head has been lost, but the carving (Fig. 14) depicts an angel with the remnant of a wing, the initials R.L. and a shield with Langton's rebus – a barrel ('tun'/'ton') upon which is carved a long note ('Lang'). Robert Langton was a nephew of the Provost Thomas Langton (1487–96) and was incepted as Doctor of Civil Law in 1501.[51] In 1517 he enlarged the chapel and also beautified the library and provost's

[48] C. Dyer, *Everyday Life in Medieval England* (London, 1994), p. 106.
[49] Kamash et al., 'Late Saxon and Medieval Occupation', p. 282.
[50] See above, p. 174.
[51] Magrath, *Queen's College*, vol. 1, p. 153.

chambers.[52] His coat of arms was displayed over the Provost's parlour, and is now mounted on the SCR gallery.[53] Within the chapel Langton's rebus can be seen in the upper right corner of a stone, which also has an indent for a brass depicting Langton.[54]

The Later College (Early Eighteenth Century onwards)

Demolition of the west side of the quad commenced on 12th November 1709 and the first stone of the west wing was laid in February 1710.[55] During the 2009 excavation, the medieval garden levels were seen to be overlain by dumps of construction debris, in particular a *c.*0.5 m thick layer of limestone chippings/dust was used to raise the ground level. The west and north ranges were levelled, and following the removal of its floor, the north range cellar was in-filled with material generated from the excavation of the new building footprint. Stones originating from the medieval structures were re-used in the fabric of the eighteenth-century kitchen foundations. A nineteenth-century well (1001) was uncovered within the basement to the east of the present kitchen, and it is possible that this represented the location of a medieval precursor (Fig. 10).

Conclusion

The 2007–8 excavations provided an important opportunity to fill in gaps in the plan of the lost medieval college, a plan which was all but obliterated by 18th century re-building, but which was partly captured in illustrations. The completion of the basic plan now opens the way for future detailed study of individual buildings. The findings are also significant in two other respects. Firstly, they provide further evidence of late-Saxon occupation of the eastern part of the *burh*, or of a suburban area immediately beyond. This evidence feeds into the continuing debate about the extent and development of the Alfredian *burh* and its possible eastern extension, discussed further in an article in this volume by Jeremy Haslam. Secondly, and just as importantly, the extensive bone finds from the site provide much information about the diet of later-medieval college fellows, an under-studied but potentially distinctive group in terms of food consumption. Further study of college diets promises fresh insights into the culture and connections of medieval scholarly communities.

ARCHAEOLOGICAL RESULTS

Stratigraphic Summary

Anglo-Saxon and medieval (tenth to fourteenth centuries)

Within the excavation site natural gravel (235) was revealed at 59.9 m OD and was overlain by a 0.2 m-thick layer of reddish loess (230). These deposits were cut by six pits that measured between up to 2 m wide and 2 m deep prior to truncation (Fig. 11). The pits were truncated by medieval pitting and structures and their form was difficult to ascertain. However, the deeper pits (232, 293, 298 and 336) were generally sub-square or rectangular, north-south aligned, vertically sided, and flat bottomed. The pits contained Cotswold type ware and St Neots ware pottery, which is indicative of a date range of *c.*900–1100 for the pits.

Pit 293 was the best preserved and was filled with dumps of re-deposited supra-natural and topsoil, the lowest of which were greenish hued and indicative of cessy deposits (294, 297 and 320; Fig. 15). The upper fill (294) contained an Æthelred II (978–1016), silver cut halfpenny, in circulation from 997 to 1003. A relatively large assemblage of eel and herring bones were recovered from the primary fills of the pit (297 and 320). Pits 232 and 298 were similarly shaped to pit 293 but filled with dumps of silty clay. The pits may have originated as quarry pits, but it is not inconceivable that they formed narrow cellar pits - being vertically sided, flat based and rapidly filled.

Pits 295 and 304 were more irregularly shaped with concave bases and sloping sides, they were filled with single dumps of re-deposited natural loess (296 and 305) and are likely to have been dug to excavate material to

[52] Ibid. p. 165.
[53] Ibid. plate 16; Blair, 'Punning Arms of Robert Langton'.
[54] Magrath, *Queen's College*, vol. 1, plate 2.
[55] Ibid. vol. 2, pp. 81–2.

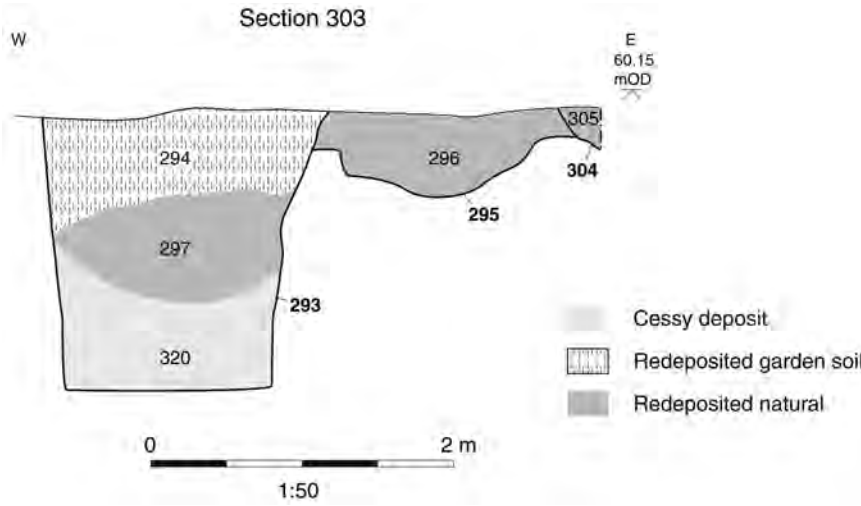

Fig. 15. Section 303, pits 293, 295, and 304.

in-fill cess pits or similar (Figs. 15 and 16). The animal bones recovered from the pits included sheep/goat, pig, dog, horse and deer.

The fills of the pits were overlain by a probable garden soil (286). A pit (289) and a shallow hollow (291) were cut through the soil, measuring between 0.3 m and 0.8 m wide, 0.1 m and 0.4 m deep, and filled with re-deposited garden soils (290 and 292); they were probably planting holes or garden features. A scorched charcoal and mortar rich reddish silty sand (284) overlay the garden features, and contained eleventh- to thirteenth-century pottery and a similarly dated stylus (S.F. 284). A dog burial was also present within the layer. The layer probably represented a demolition layer or construction horizon associated with the medieval college.

A layer of silty clay containing stone roof tile fragments (119) was recorded within the evaluation trench to the north of the main excavation area, and may have represented construction debris or demolition material from a structure within an earlier tenement plot.

The late-medieval and later college kitchen (fourteenth to early eighteenth centuries)

The foundations of the medieval west range (cut 287, fill 288) truncated the garden soils, demolition deposits, and the Anglo-Saxon pit fills to the east. The revealed western wall and north-eastern corner of the west range were constructed from ragstone and limestone blocks in a gravelly mortar (101 and 210). The walls measured between 0.75 m and 0.95 m in width, with an offset course of stone at the base creating a total width of up to 1.4 m. The western wall survived to a height of 1.4 m, including its offset foundation, and its lowest courses were constructed from roughly hewn limestone blocks measuring *c.*0.8 m by 0.6 m by 0.3 m The surviving upper five courses were constructed from similar smaller blocks and were roughly faced. A recess forming a chimney base, or less likely a small doorway, was noted at the internal north-east corner of the structure (101).

The construction trenches for the wall were backfilled with soil and stones (118) and included OXAM fabric pottery with a date range from the thirteenth to the sixteenth centuries. The walls formed a range measuring 5.3 m wide and over 6 m long, the southern part of the range presumably extending to the south of the existing kitchen beyond the observable area.

Floor deposits (Figs. 12 and 16; Section 302)

A sequence of floor deposits and repairs were observed within the west range. The earliest floor level was a compacted silty floor measuring up to 0.1 m thick (285), which contained pottery with a broad date range (1200–1600), although assumed to date from the late fourteenth century. The floor was overlain by a 0.15 m-thick sand and gravel levelling deposit (283) below a 0.1 m-thick sand and mortar floor (342). A limestone hearth (272) was located at the western end of the floor; it was constructed from stone blocks measuring 0.3 m by 0.2 m and laid end to end, with a 0.1 m-thick layer of silty sand dumped within it (268). The levelling layer was overlain by a 0.06 m.-gravelly mortar surface (260), which presumably functioned as the hearth floor. The absence of scorching may suggest that any fire was within a brazier. An ash and charcoal rich deposit (262 – not illustrated) lay directly in front of the hearth, which contained numerous oyster shells: a result of the hearth being cleaned out.

Adjacent to the hearth, a 0.05 m-deep hollow (281 – not illustrated) was filled by and overlain by a compact dark silty floor (269). The floor was 0.03 m thick and ash and bone rich, and was likely to have represented several

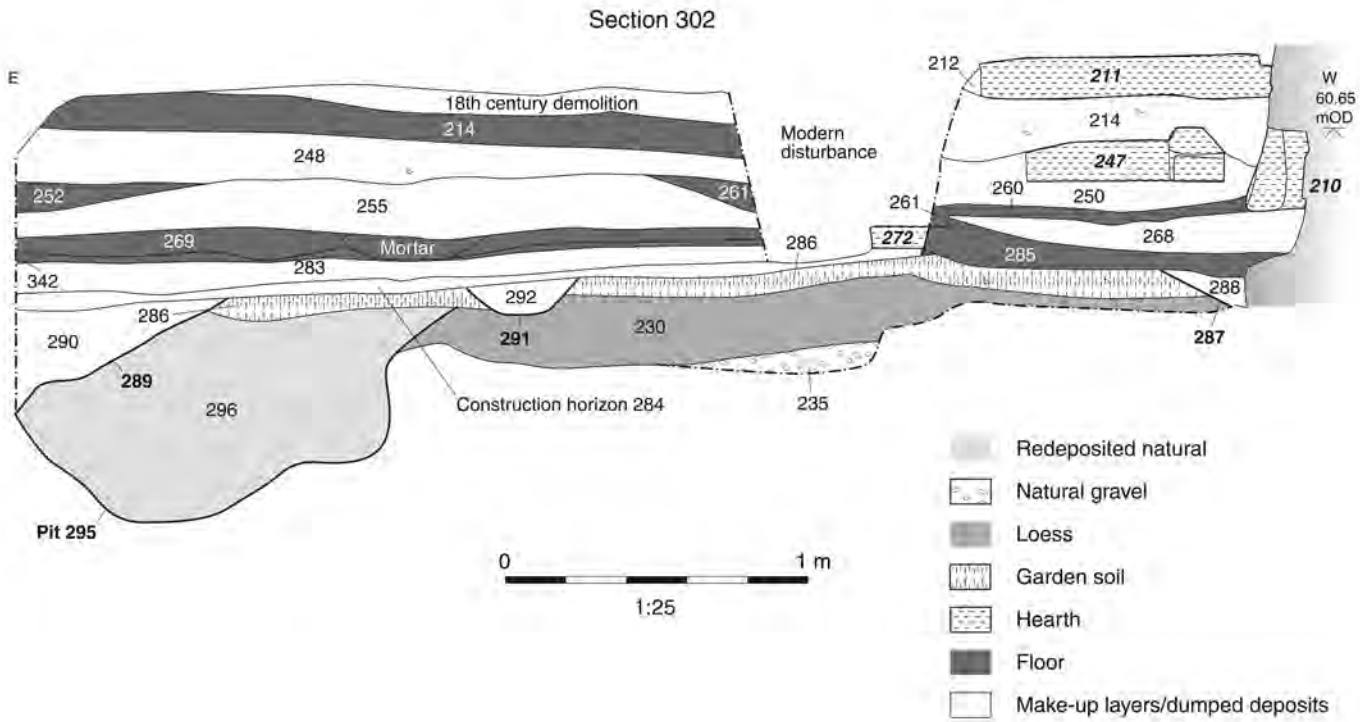

Fig. 16. Section through medieval kitchen floor sequence.

Fig. 17. Seventeenth-century brick oven (211), looking south.

raking out episodes from the hearth. Fragments of two Brill jugs (1450–1625) were recovered from the floor. A second hollow (271 – not illustrated), also adjacent to the hearth, was revealed in the surface of these deposits, filled with a bone rich reddish silt that contained late fifteenth- to mid sixteenth-century pottery (270).

Floor 269 was cut by the foundation trench for the north range (see below), the fills of which were overlain by a mortar and gravel base (255) for a pitched limestone cobble surface on an intermittent mortar bed (252). The stones measured *c.*0.2 m by 0.2 m by 0.05 m, and were seen in patches throughout the west range; a fifteenth-century jetton was recovered from the surface. Pitched stones (134) within the north-east corner of the range were worn and a fine sooty deposit filled the voids between the stones. It is likely that the ashy deposits here derived from the nearby hearth within the corner of the building (101). Surface 252 had been repaired in places; a patch of flat cobbles (253) was observed amongst the pitched stones and ashy deposits that filled voids between the stones (261).

The pitched stone floor and hearth 272 were overlain by a bone- and ash-rich levelling layer (250), below a brick hearth (247) on a mortar bed (Fig. 17). The brick hearth was up to 1 m wide, and constructed from handmade early Tudor bricks measuring 0.23 m by 0.11 m by 0.05 m. The bricks were overlain by a make-up layer (248) and mortar base (214) for a second brick hearth or oven (211). The later oven measured 2 m long and 1 m wide and was constructed from seventeenth- or eighteenth-century bricks laid on their edges in a running bond; many of the bricks were blackened by fire and cracked from heat. The inner face of the medieval range wall (210) was abutted by five courses of bricks in a running bond, which formed the back of the oven. A 0.4 m-wide brick plinth was set into the centre of the oven's base, and divided the structure into two.

The mortar base for the oven extended into the central area of the range, where stone slabs formed part of a floor (213). The slabs measured between 0.35 m by 0.34 m by 0.04 m and 1.03 m by 0.64 m by 0.05 m; imprints of removed slabs were evident in the mortar and three stone slabs survived in the north-east corner of the range (125; Figs. 12 and 17).

A stone-built drain was located to the north of the oven and may have been contemporary (257; Fig. 12). The stone structure was constructed from roughly hewn limestone and ragstone blocks, and formed a 3.1 m-long and 0.37 m-wide curvilinear channel that cut through the foundations of the west wall of the range (210). The entrance to the channel was a square opening (0.56 m by 0.47 m) formed from ashlar blocks set within the kitchen's floor. A stone slab at the base of the opening sloped down to the west, and led to a roughly hewn limestone base 1.1 m below ground level. It is likely that the drain emptied into a culvert within the kitchen garden (see below). Layers

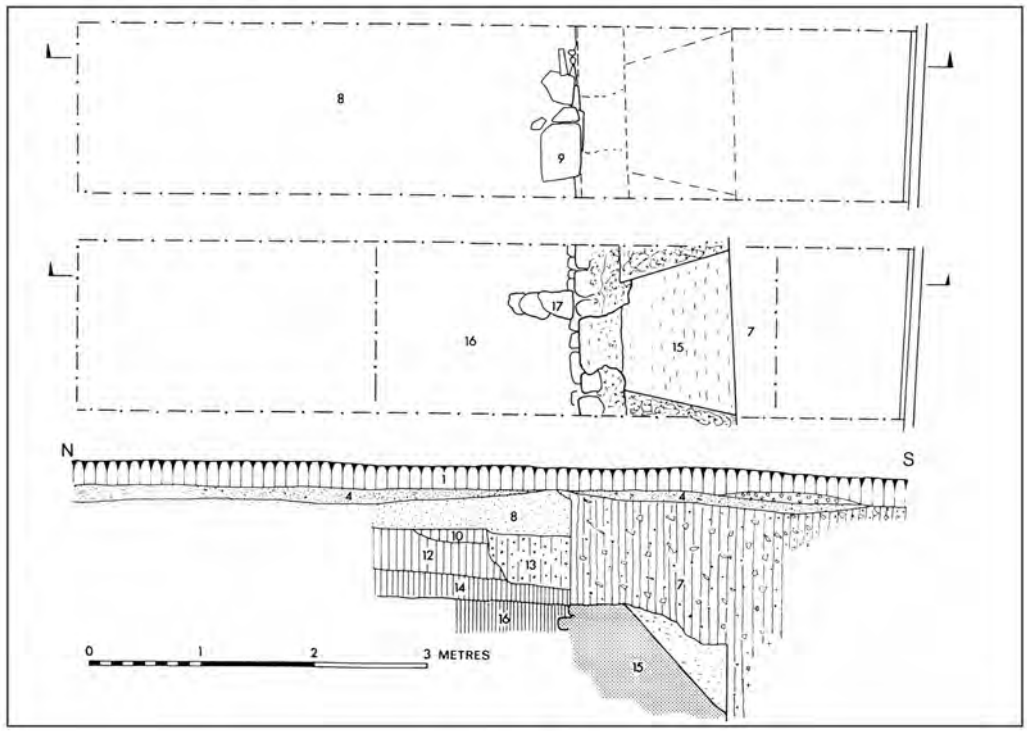

Fig. 18. The 1987 trench in the Back Quad: plan and section.

of reddish and black silt (263 and 264) were revealed within the channel. A second shallower channel (259 – not illustrated) was partly exposed in section and set into the top of channel 257. It comprised a limestone block base and surround but was disturbed by modern services.

The north range

The 1987 trench by JOHN BLAIR (Fig. 18)

The north range was first revealed in 1987, when a north-south aligned trench, 7.2 m by 1.5 m (Fig. 18), was excavated across the line of the north wall of the north range (F15), in the position marked on Figs. 6 and 10. By coincidence, it was located immediately over a window in the cellar. This window had splayed reveals and a splayed sill, all covered by a smooth mortar render; excavation extended down to the bottom of this sill, but not to cellar floor-level. Externally the bottom of the window evidently corresponded with contemporary ground-level, as the rubble courses below its outer face were clearly footing, not standing wall. Abutting the footing on the north was a layer of dark-brown glutinous clay loam (L16) rich in midden-like debris; this was interpreted as the product of later pit-digging and/or gardening against the wall-face. In L16 was a narrow footing of unknown date (F17), abutting the main wall at right-angles.

Overlying L16 were a series of layers: L14 (dark-brown silty loam with charcoal flecks); L12 (medium-brown silt); L13 (orange gravelly loam); L11 (dark-brown silty loam); L10 (light-brown silty loam); and L8 (a thick layer of clean white mortar, deposited in its liquid state). Integral with the edge of L8 where it had abutted the wall-face was a group of three horizontal and two vertical slabs (F9); the vertical slabs were probably placed as blocking against the outer face of the cellar window, which must have been completely buried by the deposition of L8. On the evidence of the pottery, these layers only briefly pre-dated the demolition of the range; they must therefore be associated with construction works on the eighteenth-century buildings before the medieval range was demolished.

The wall was demolished and robbed away from the layers which had been piled against its outer face, leaving a vertical standing section from the top of L8 down to the original ground-level, after which the cellar was filled to the level of the top of L8 with friable grey loam containing *c.*60% demolition rubble (L7). Finds in L7 included quantities of coarse red roof-tile, oyster-shell, wall-plaster with successive red and white paint-layers, seventeenth-

and eighteenth-century pottery, and a large group of clay pipe fragments. A thin layer of dirty white mortar containing brick fragments (L4) overlay L8 and L7, covering almost the whole trench area; a west-east line of small stones (F5), set in L4 towards the north end of the trench, was probably a path edging. Directly over L4 was the topsoil (L1), rich in modern debris.

Kitchen extension works (Figs. 10 and 19)

The western extent of the north range was recorded in the kitchen extension works and, as noted above in the account of the west range, floor 269 was truncated by the construction trench for the western end wall of the north range or the later eastern wall of the west range. The north range is unlikely to have been constructed before the mid to late fifteenth century since floor 269 contained fragments of late Brill jugs (*c.*1450–1625). A fifteenth-century jetton was also recovered from a later pitched stone surface (252). The wall (216) was 1.5 m wide, 1.3 m high and similarly constructed to the west range walls. The eastern face of the wall and any floor were robbed during the construction of the eighteenth-century college, but facing stones were evident in the lower courses of the wall. A 0.2 m-wide offset foundation course was observed below the lowest facing stone at 59.05 m OD, 1.45 m below floor 269. In addition to the section of wall described by John Blair (above), the internal face of the northern wall of the cellar was observed in a narrow exploratory trench designed to define the extent of the structure. The wall survived to a height of 1 m and was rendered with 0.05 m of white-painted plaster.

The southern and internal walls of the north range survived beneath the eighteenth-century college and were observed during a watching brief on the underpinning works (Figs. 10 and 19). In situ stratigraphic deposits only survived beneath the passageway to the Back Quad, to the east of the eighteenth-century kitchen, where the southern wall of the north range (1031) was revealed in section (Fig. 19). It measured 1.2 m wide and 1.9 m high, it was constructed from roughly hewn limestone blocks and faced on its northern side. It was abutted by a limestone slab floor constructed on a rubble base (1030).

Beneath the eighteenth-century college, just south of the centre of the range, the base of an internal east-west aligned dividing wall (1000/1022) was observed. It survived to a height of 0.5 m and was faced on its northern side; no evidence of render was seen on either section of the wall. A north-south aligned cross wall (1020), constructed from roughly shaped limestone blocks measuring up to 0.35 m wide and bonded with a sandy mortar, abutted the southern face of the dividing wall (1022). Wall 1020 was over 3.4 m long, 0.9 m wide and up to 1.1 m high and presumably formed footings for a division within the north range. Similarly constructed walls (1008 and 1025) survived to the west of wall 1022 and in section on the north side of wall 1022, possibly forming other internal divisions. Wall 1025 was assumed to have originally extended to the north, but was largely removed during the construction of the eighteenth-century college. The foundation trench for the later college had also removed all evidence of any earlier floors or internal features.

The kitchen garden and orchard (Fig. 12)

Four pits measuring up to 1.3 m deep and up to 3 m wide were recorded immediately to the west of the west range (275, 278, 313, and 330). The pits were filled with dumped silts and clays that contained waste from the kitchen, including pottery dating from the late fourteenth to mid sixteenth centuries.

A north-south aligned culvert (266) was located within the northern part of the exposed garden area. The culvert was constructed from two courses of limestone blocks measuring *c.*0.85 m by 0.46 m by 0.12 m and had an internal width of 0.3 m and an external width of 0.9 m. It was capped with limestone slabs and sloped down towards the High Street. The upper pit fills and culvert construction trench fill had been reworked and formed part of a garden soil seen throughout the area (229 – not illustrated). The soil contained a large quantity of fragmentary fifteenth- or sixteenth-century ceramic roofing tiles, of a type previously unknown in Oxford (see Cotter below). Limestone blocks were set into the soil and formed a surround between a flower bed and edge of a gravel path; the stones measured *c.*0.16 m by 0.07 m by 0.05 m.

Soil deposits (111 and 114) were observed abutting the northern face of the west range (101); layer 114 contained re-deposited pottery of OXY fabric, dated from the eleventh to the thirteenth centuries. The deposits were cut by a north-south aligned construction trench for a 0.3 m-wide sandstone wall (102). The stones were roughly hewn and bonded with reddish brown clay. Wall 102 abutted the north-east corner of wall 101 and appears to have functioned as a garden divide, although it cannot be seen in Loggan's 1675 engraving. A footpath constructed from tightly packed sandstones (100), extended northwards alongside garden wall 102.

West of garden wall 102, dumped soil deposits were observed forming a spoil or compost heap containing thirteenth- to fifteenth-century pottery (113) and twelfth- to eighteenth-century ceramic building material (CBM – 121). Dumps of mortar, stone, and beech charcoal (108) were also present.

The eighteenth-century college (Figs. 10 and 20)

Within the Back Quad a sequence of dumped deposits overlay the medieval/post-medieval garden soils (Fig. 20). A soil layer (5), containing pottery of late seventeenth century date, lay beneath a *c.*0.25 m-thick dump of limestone debris (4), which contained seventeenth- to eighteenth-century pottery, re-deposited CBM and clay pipe dated

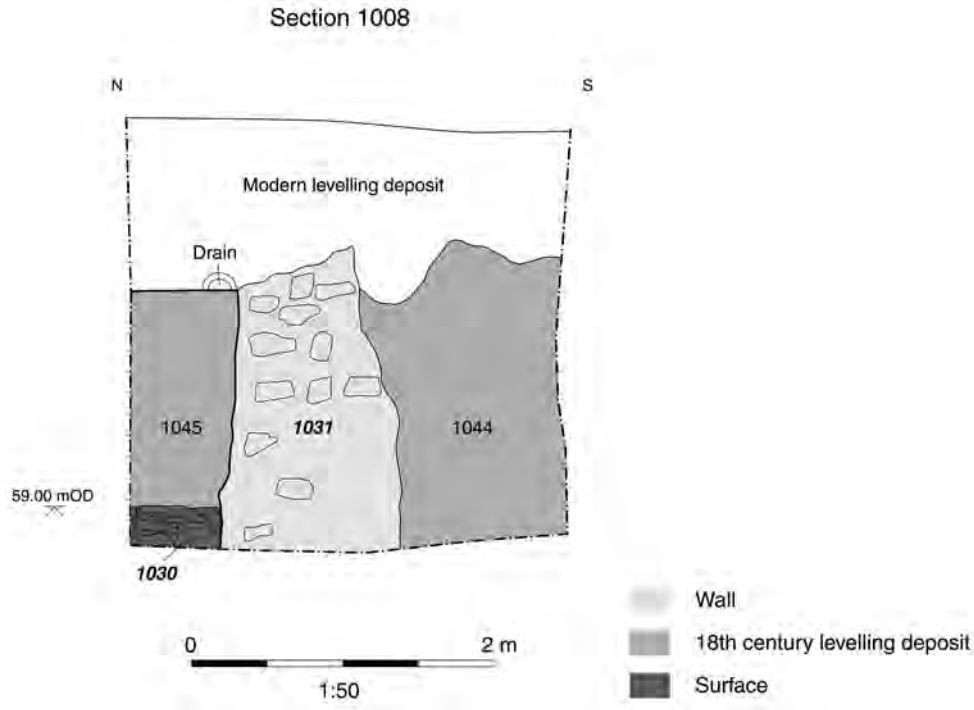

Fig. 19. Section 1008, north range wall and floor.

*c.*1690–1720. The limestone layer is likely to have derived from the construction of the library in 1692–5. A similar sequence of deposits was observed during the excavation of a lift pit on the southern side of the kitchen, demonstrating that the entire site was 'made up' prior to the removal of the medieval range walls. The earlier construction/levelling deposits (4) were cut by a robber trench (6) over the north wall of the north range that was 1.95 m wide and over 0.6 m deep. The gravelly fill of the trench contained fourteenth- to seventeenth-century CBM and seventeenth- eighteenth- century clay pipe fragments (3). The robber trench over the northern wall of the west range was less well defined, its fills merging with the fills within the in-filled range. Pieces from a fourteenth-century Penn/Chiltern decorated floor tile were recovered from the wall robber-trench fill (124 – 3; Fig. 20).

The eighteenth-century range and its cellars were constructed within one large foundation trench that was subsequently backfilled with dumps of mortar, limestone, gravels and silts. All floor deposits associated with the medieval west and north ranges were removed, but upstanding medieval walls below the level of the new cellar floor were left in situ (1000, 1008, 1020, 1022, and 1025; Fig. 10). Stone from the medieval walls was re-used in the eighteenth-century wall footings; most notably, a carving of an angel holding a shield depicting the rebus of Robert Langton, was placed within the footing of a brick party wall below the eighteenth-century kitchen (Fig. 14). The backfill of the construction trench contained clay pipe fragments dating from 1690 to 1720, which correspond with the known construction date of the current kitchen. Outside the footprint of the new range the medieval ranges were in-filled with mixed dumps of re-deposited natural subsoil, limestone chippings, gravel and mortar (4, 1044 and 1045; Figs. 19 and 20), which were derived from the excavation and construction of the new college footprint.

A well (1001; Fig. 10) survived beneath the floor of the eighteenth-century range. It had an internal diameter of 0.9 m and its lowest courses were constructed from nineteenth-century bricks below unbonded limestone blocks. A circular wooden construction board survived at the base of the well. The well was capped with a limestone block and must have gone out of use following a change in function of the cellared room.

POST-ROMAN POTTERY by JOHN COTTER

A total of 301 sherds of pottery weighing 4.731 kg were recovered. Apart from four residual sherds of Roman pottery, 20% of the pottery by sherd count and 17% by weight is of late Anglo-Saxon date, 61% of the pottery by sherd count and 55% by weight is of medieval date with the remainder being post-medieval. The pottery is in a fairly mixed and quite fragmentary condition with some abrasion visible on the some of the softer late Anglo-Saxon/

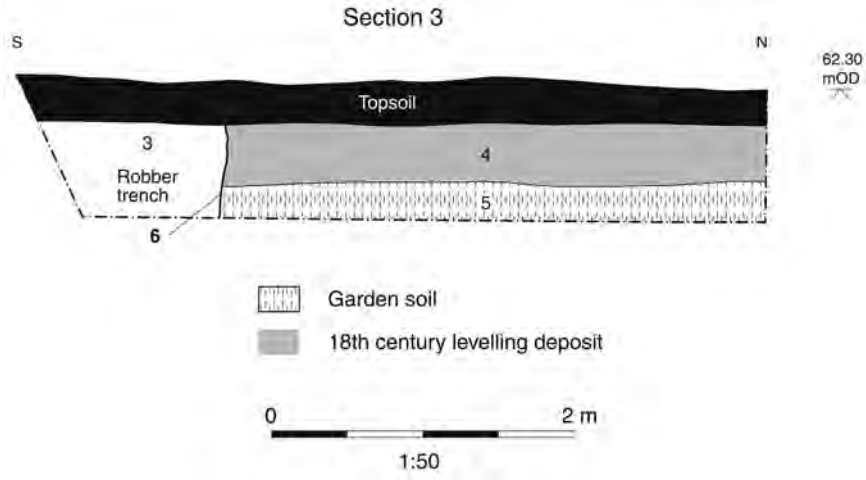

Fig. 20. Section through demolition deposits.

medieval sherds. The Anglo-Saxon and medieval assemblage includes many quite large fresh sherds including near-profiles of more robust smaller vessel forms (lamps, skillets). The post-medieval assemblage includes many large fresh sherds as well as a few potentially reconstructable vessel profiles. The range of fabrics and vessel forms present is fairly typical of sites along or near the main thoroughfares of central Oxford with the late Anglo-Saxon, medieval and post-medieval periods all well-represented. Nearby sites along the High Street with a comparable range of late Anglo-Saxon to post-medieval material include 113–119 High Street and Logic Lane with its late Anglo-Saxon pits.[56] In its high medieval and late medieval vessel types, including a significant number of Brill/Boarstall ware oil lamps (perhaps connected with places of study?), the assemblage has more than a little in common with pottery recently published from the Classics Centre, St Giles and Merton College.[57] Apart from a sherd of English porcelain no obvious nineteenth-century pottery was recovered.

Given the availability of good published parallels for most of these types in the city, coupled with the relatively small size of the present assemblage and its variable condition, what follows is a simply a quantified list of the various fabrics present and a summary report focusing on the more significant or interesting aspects of the assemblage.

Methodology

An intermediate level catalogue of pottery types was constructed, following standard procedure, for the whole hand-excavated assemblage, and spot-dates produced for each context. A much smaller collection of sieved pottery was simply scanned and spot-dated. The catalogue includes, per context and per pottery fabric, quantification by sherd count and weight. Quantification by rim EVEs (measurable rim percentage) was not considered worthwhile. Details of vessel form, part, decoration and any other features of note were recorded in a comments field. Full details remain in archive. As better parallels exist, none of the material was illustrated.

Pottery Fabrics

Medieval pottery fabrics were recorded using the system of codes developed for the Oxfordshire County type series.[58] Post-medieval pottery fabrics were recorded using the codes of the Museum of London, which can be applied to most post-medieval types in south-east England.[59] The types and quantities occurring at Queen's are listed below in roughly chronological order.

[56] J. Timby and C. Underwood-Keevill, 'The Pottery', in G. Walker and R. King, 'Early Medieval and Later Tenements at 113–119 High Street, Oxford: Excavations in 1993–5' *Oxoniensia,* 65 (2000), pp. 409–19; Radcliffe, 'Excavations at Logic Lane'.

[57] P. Blinkhorn, 'Pottery', in Norton and Cockin, 'Excavations at 65–67 St Giles', pp. 180–5; P. Blinkhorn, 'Pottery' in Poore et al., 'Excavations at No. 4A Merton Street', *Oxoniensia*, 71 (2006), pp. 258–78.

[58] M. Mellor, 'Oxfordshire Pottery: A Synthesis of Middle and Late Saxon, medieval and Early Post-Medieval Pottery in the Oxford Region', *Oxoniensia*, 59 (1994), pp. 17–217.

[59] LAARC, *Post 1992 Museum of London Code Expansions: Post-Roman Pottery*: www.museumoflondon.org.uk.post_rom.pdf, accessed 25 June 2009.

ROM: Miscellaneous Roman pottery, *c.*AD 43–410. (4 sherds, 53 g).
OXR: St Neots-type ware, *c.*850–1100 (mainly *c.*950–1075 at Oxford). South-east Midlands. (29 sherds, 297 g).
OXAC: Early medieval Oxford ware ('Cotswold'-type calcareous gravel-tempered), *c.*875–1250 (mainly *c.*1050–1225 at Oxford). Central and north-west Oxfordshire, Gloucestershire. (30 sherds, 526 g).
OXBF: Late Saxon-early medieval south-west Oxfordshire ware (flint- and sand-tempered), *c.*875–1250 (mainly *c.*1050–1250 at Oxford). (2 sherds, 15 g).
OXZ: Stamford ware, *c.*850–1150. Lincolnshire. (1 sherd, 6 g).
OXK: Michelmersh ware, *c.*950–1050. Hampshire. (1 sherd, 6 g).
OXBQ: North French/Flemish grey ware, *c.*900–1100. (1 sherd, 4 g).OXY: Late Saxon-medieval Oxford ware (sand-tempered), *c.*1075–1300. Oxfordshire. (16 sherds, 160 g).
OXAQ: Early-late medieval east Wiltshire ware (flint and algal limestone), c. 1150–1350. (11 sherds, 207 g).
WORC: Worcester-type sandy glazed ware, *c.*1175–1400. Worcestershire. (1 sherd, 9 g).
OXAM: Brill/Boarstall ware, *c.*1225–1625. Buckinghamshire. (106 sherds, 1429 g).
ANDA: Andalusian lustreware, *c.*1250–1450. Import, Spain. (2 sherds, 25 g).
OXBB: Minety ware, *c.*1225–1525 (at Oxford), Wiltshire. (1 sherd, 31 g).
OXBG: Coarse border ware, *c.*1350–1500. Surrey/Hampshire. (1 sherd, 14 g).
OXBX: Late-medieval Brill/Boarstall ware, *c.*1450–1625. Buckinghamshire. (28 sherds, 557 g).
TUDG: Tudor green ware, *c.*1375–1550 (mainly c. 1450–1550). Surrey/Hampshire. (4 sherds, 8 g).
OXBC: Brill/Boarstall 'Tudor Green' copies, *c.*1375–1550. (5 sherds, 44 g).
RAER: Raeren stoneware, *c.*1475–1550. Import, Germany. (2 sherds, 14 g).
FREC: Frechen stoneware, *c.*1525–1750. Import, Germany. (3 sherds, 99 g).
BORD: Surrey/Hampshire white border ware, *c.*1550–1700. (2 sherds, 73 g).
BORDG: Surrey/Hampshire white border ware, green-glazed, *c.*1550–1700. (1 sherd, 68 g).
BORDB: Surrey/Hampshire white border ware, brown-glazed, *c.*1650–1700. (1 sherd, 2 g).
PMRE: Early post-medieval red earthenwares, *c.*1480–1600. (7 sherds, 140 g).
PMR: Post-medieval red earthenwares, *c.*1550–1900. Local, including Brill (Bucks.). (6 sherds, 144 g).
WEST: Westerwald stoneware, *c.*1590–1750. Import, Germany. (1 sherd, 4 g).
TGW: English tin-glazed earthenware, *c.*1575–1825. London, Bristol etc. (15 sherds, 170 g).
CHPO: Chinese porcelain, *c.*1600–1900+ (mainly *c.*1725–1900). Import, China. (1 sherd, 3 g).
BRILL: Red earthenware, Brill-type, *c.*1650–1800. Buckinghamshire. (8 sherds, 306 g).
LONS: London stoneware, *c.*1670–1900. (8 sherds, 245 g).
STMB: Staffordshire-type mottled brown-glazed earthenware, *c.*1680–1800. (1 sherd, 57 g).
STBRS: Staffordshire-type brown salt-glazed stoneware, *c.*1690–1730. (1 sherd, 10 g).
ENPO: English porcelain, *c.*1745–1925+. (1 sherd, 5 g).

Summary by Period

Late Anglo-Saxon to early medieval

The earliest phase of the site (Phase 1) comprises five late Anglo-Saxon pits which produced a total of forty-four sherds (539 g) of pottery (pits 232, 293, 295, 298, and 304). These almost certainly date within the period *c.*950–1050/75, although they could arguably date solely to the later tenth century. The predominant pottery fabrics here are St Neots-type ware (OXR) and early medieval Oxford ware (or 'Cotswold'-type ware, OXAC). The latter has a broad dating in Oxfordshire and the Cotswolds area of *c.*875–1250 but in Oxford is more typical of the period *c.*1050–1225.[60] St Neots-type ware likewise is broadly dated from *c.*850/900–*c.*1100 in the south-east Midlands but in Oxford has a main currency of *c.*950–1075.[61] The presence of a small plain sherd of wheel-thrown Michelmersh ware in pit 295, beneath the larger pit assemblage in pit 293 and also beneath pit 304, if correctly identified, provides further evidence of a post-*c.*950 dating. This Hampshire import, rare in Oxford, dates to *c.*950–1050. One of the Michelmersh kilns has recently been dated by archaeomagnetism to *c.*965–1030.[62] The concurrency of the two main wares here in roughly equal quantity, plus the Michelmersh sherd, makes a date in the first half of the eleventh century perhaps rather more likely.

The St Neots-type ware vessels from the pits comprise a few jar rims and heavily sooted jar body sherds, plus rims from two wide bowls with classic St Neots inturned or bifid rims. The early medieval Oxford ware (OXAC) vessels comprise jars/cooking pots only, some with thumb-decorated rims. The main forms in both wares are similar to those from the tenth/eleventh-century pits at 113–119 High Street.[63] Pit 232 produced a vertical-sided

[60] Mellor, 'Oxfordshire Pottery', pp. 51–2.
[61] Ibid. p. 57.
[62] L. Mepham and L. Brown, 'The Broughton to Timsbury Pipeline, Part 1: A Late Saxon Pottery Kiln and the Production Centre at Michelmersh, Hampshire', *Proceedings of the Hampshire Field Club and Archaeological Society*, 62 (2007), p. 68.
[63] Timby and Underwood-Keevil, 'The Pottery', Fig. 13.

or 'top hat'-shaped jar in OXAC, considered to be an early form in this ware and usually dated tenth to eleventh century. The same pit however also produced the only two sherds (from two vessels) of flint-tempered OXBF – late Saxon-early medieval south-west Oxfordshire ware, which could date the pit closer to *c.*1050. Pit 293, the largest of the pit assemblages, produced a small shoulder sherd from a jar in OXAC with rare stamped decoration consisting, apparently, of a horizontal row of cross-in-circle stamps (two partially surviving, diameter 12 mm) under an incised horizontal line – perhaps the upper of a pair enclosing the stamps? Remarkably, a smaller sherd from a second vessel with identical stamped decoration (though probably from a different die) was recovered from sieved material in pit fill 297. This style of stamped decoration is fairly common on late Anglo-Saxon and early medieval pottery in England although there is no exact parallel for this on early medieval Oxford ware in the published typology of this ware – although a vessel with sunburst stamps is illustrated.[64] However, cross-in-circle and other stamp designs were common on Michelmersh ware and other late Saxon pottery in Wessex.[65] A few sherds of OXAC from later contexts have traces of simple incised line decoration. The only other broadly contemporary fabric present in the late Anglo-Saxon pits was a small sherd of north French or Flemish grey sandy ware (OXBQ, pit 293). A worn sherd of late-Roman Oxfordshire ware (*c.*AD 240–400) was also recovered from pit 293.

The early medieval assemblage (*c.*1050–1250) comprises the usual limited range of fabrics found in Oxford including, as before, OXAC jar/cooking pots now joined by medieval Oxford ware (OXY) present as both unglazed jars/cooking pots and yellow-glazed pitchers and possibly tripod pitchers. An early medieval pit (pit 289) produced a sherd of late Anglo-Saxon to early medieval Stamford ware (OXZ, *c.*850–1150). This ware has been found on several other sites in central Oxford normally occurring as yellow-glazed spouted pitchers, but represented here by an unglazed sagging base sherd from a thin-walled jar (or unglazed area of a spouted pitcher) with external sooting.

Medieval, late medieval, and post-medieval

The high- and late-medieval assemblage is dominated, as usual, by products of the Brill/Boarstall ware industry (OXAM). These mainly comprise glazed jugs, both plain and decorated but all in a fairly fragmentary state. Less common forms include three OXAM bottles - possibly for culinary use (oil containers/dispensers?), a small late medieval bowl/condiment dish, and the base of a cooking pot with internal green glaze and heavy external sooting. Most interesting are parts of no less than four OXAM double-shelled oil lamps (pit fills and dumped layer 209, 280, and 300), an unusually high number given the relatively small size of the excavated assemblage. These small distinctive vessels have a solid wheel-thrown pedestal rising from a drip-tray and supporting a small dish with a small pinched spout to hold the wick, which floated in the oil. Most examples are green-glazed. Three of the examples here are represented only by the damaged robust stem fragments with – in one case – traces of the dish and tray attached (209, 280). The fourth example though is almost a complete profile with only the rim edges from its dish and tray missing, but otherwise very fresh. Better preserved examples of this form, thought to be mainly of thirteenth- to fourteenth-century date, have been published from many sites in Oxford including, most recently, a collection of at least sixteen lamps from Merton College and smaller numbers from other collegiate sites.[66] Blinkhorn argues convincingly that the unusually high consumption of lamps at Merton College was a reflection of the large-scale use of this vessel type by the inhabitants of the college.[67] It is equally likely that the relatively high number of lamps at Queen's is also reflection of its academic function.

A single sherd has tentatively been identified as thirteenth-fourteenth century Worcester-type sandy glazed ware (WORC, context 205), only the second sherd of this ware to be identified in the city, the other being from Rewley Abbey.[68] This is from a jug body in a reduced fabric with a cloudy greenish-brown glaze and with traces of red slip decoration. A very rare medieval pottery type, for Oxford, from context 229 (a late-medieval garden soil) is the footring base of an Andalusian lustreware (ANDA) dish or bowl with thin walls and decayed traces of cobalt blue painted decoration (possibly floral?). This probably dates to the fourteenth century and may have been carried overland from either Southampton or London. These white early tin-glazed vessels with metallic lustre decoration (now decayed) and blue painting would have been highly prized possessions and reflect a site of some status. A vessel form probably connected with the late medieval kitchen here is a wide dish-like redware skillet or frying pan from a pit fill (280). This has almost exactly the same form as late medieval/early post-medieval skillets in Dutch redware – in this case with a flanged rim, short slightly flaring walls and possibly a flat base with traces of thin clear glaze internally. It probably once had a tongue-like side handle (now missing). The sooted exterior confirms its use as a cooking vessel - much like a modern frying pan. Despite the resemblance to Dutch forms the coarser sandy red fabric with grey core most probably identifies it as a very early example of a local or regional post-medieval red earthenware (PMRE) dating to *c.*1480–1550. These appeared over much of southern England

64 Mellor, 'Oxfordshire Pottery', Fig. 13.4.

65 Mepham, 'The Broughton to Timsbury Pipeline'.

66 Blinkhorn, 'Pottery', in Poore et al. 'Excavations at No. 4A Merton Street', pp. 258–78; Mellor, 'Oxfordshire Pottery', Fig. 54.18–22.

67 Blinkhorn, 'Pottery', in Poore et. al. 'Excavations at No. 4A Merton Street', p. 71.

68 J.P. Cotter, 'Medieval and Post-Medieval Pottery', in J. Munby et al., *From Studium to Station. Rewley Abbey and Rewley Road Station, Oxford,* Oxford Archaeology Occasional Paper, 16 (2007), Fig. 20.3, plate 10.33–42.

during the sixteenth century but the continuing predominance of the late-medieval Brill/Boarstall ware industry, with its buff-creamy fabrics, as late as the early seventeenth century deferred the large-scale appearance of post-medieval redwares in Oxford until as late as *c.*1640. Nevertheless, very small amounts of this type of ware were evidently reaching Oxford before this date.

The post-medieval assemblage is small but fairly fresh and comprises the usual range of domestic wares found in the city including eighteenth-century tin-glazed chamberpots and stoneware tankards from London and Staffordshire. Apart from a single sherd of nineteenth-century English porcelain the ceramic sequence appears to end in the eighteenth century, when the medieval kitchen was demolished. Large fresh sherds from the fill of a drain here (contexts 258 and 263) included a London stoneware tankard with the crowned 'AR' excise mark of Queen Anne (1702–14) which may date from this rebuilding phase.

The Pottery from the 2008 Evaluation

A total of 12 sherds of pottery weighing 234 g were recovered from six contexts during the evaluation.[69] The material was all medieval and post-medieval in date. Of note was a Brill/Boarstall ware dripping pan profile (wall trench fill 118). This would have been used for collecting fat or dripping from spit-roasts. Although this ware has a broad date range (*c.*1200–1600) it is unlikely that the pieces here belong to the latter part of this range.

The Pottery from the 1987 Trench

A total of 41 sherds (614 g) of pottery were recovered from post-medieval dumped deposits and a soil. Of note are five worn sherds from a thirteenth- or fourteenth-century Brill baluster jug within a post-medieval soil (L14). The sherds form almost half of the vessel, which must have been disturbed during seventeeth-century works.

THE CERAMIC BUILDING MATERIAL by JOHN COTTER

A total of 240 fragments of ceramic building material (CBM) weighing 26.943 kg were recovered. These range in date from the thirteenth century to the nineteenth century. Most of the material (by sherd count) appears to be late medieval or early post-medieval. The latest material is represented by just a few scraps of nineteenth-century brown salt-glazed drainpipe and brick scraps of similar date. The condition of the thirteenth to fourteenth century (pre-college) material was generally fairly worn. The later material, though fragmentary, was generally quite fresh. A full catalogue is in the archive.

Roof Tiles

The bulk of the CBM comprised plain or flat rectangular roof tile with a pair of circular nail holes near the upper end (peg tiles). These comprised 190 fragments (13.640 kg). No complete examples or even complete widths were recovered. Medieval roof tiles in Oxford occur in a limited range of fabrics. A much larger assemblage of roof tiles has recently been published from Merton College where the range of fabrics is discussed in more detail.[70]

Nearly all the tiles from Queen's occur in unglazed orange-red (oxidised) sandy fabrics (Fabric IIIB, or similar). A very few pieces show evidence of glaze typical of medieval tiles. However, most medieval tiles in Oxford seem to have been unglazed, as here. Typical medieval (mainly thirteenth- to fifteenth-century) tiles here are recognisable by their coarse sandy fabric, irregular manufacture and worn condition. A very few pieces of worn, residual, thirteenth- to fourteenth-century tile in a pink fabric (Fabric VIIB) were identified. However, the bulk of plain roof tiles from Queen's, while possessing the usual orange-red fabric colour, are quite different from typical Oxford medieval tiles in being significantly thicker, and produced to a much higher standard. They are hard-fired with orange-red surfaces and often with a sharply defined broad grey core - similar to some late medieval/early post-medieval redware pottery fabrics in southern England. A few examples are over-fired with grey surfaces.

Apart from the smoother fabric their most distinctive characteristics are their thickness and finishing. Most medieval roof tiles in Oxford fall within a 12–15 mm thickness range. These tiles, however, fall within a range of 14–21 mm thick and 18–19 mm thick tiles are quite common – well above the usual thickness for both local medieval and post-medieval roof tiles. Thicker fragments might initially be mistaken for ridge tiles but none shows evidence of curvature, in fact they are remarkably flat and regular, and many pieces have circular nail holes confirming their identification as plain roof tiles. The tiles appear to have been carefully finished while in quite a dry leather-hard state. The sides have been cut or trimmed with a knife or similar blade creating neat sharp edges and corners, the undersides of the nail holes have been neatly trimmed around to remove any surplus clay. Here and there on both the smoother upper surface and the sanded underside, there are often traces of knife-finishing or shaving-off of surplus clay to create a neater flatter product. Nail holes are neatly circular and larger than usual (17 mm diam). Unfortunately, no pieces are large enough to determine the original tile widths or lengths or how

[69] 'The Queen's College Oxford, Kitchen Extension'.
[70] J.P. Cotter, 'Ceramic Building Materials', in Poore et al., 'Excavations at No. 4A Merton Street', pp. 292–305.

far apart the pair of nail holes was positioned. One piece, unusually, has a standard nail hole and a smaller second nail hole (10 mm diam) which appears to have been bored post-firing 56 mm away from the other. The largest surviving piece is a corner fragment surviving to a length of 213 mm+ and a width of 110 mm+.

The largest context assemblage of these tiles is a group of 73 fragments (5,367 g) from a late-medieval kitchen garden soil (229) containing late fourteenth- or fifteenth-century pottery, including a sherd of imported Andalusian lustreware (see pot report above). In a few other contexts the tiles are associated with pottery of *c.*1475–1550 including a Raeren stoneware mug rim in context (268) stratified below a cobbled floor which produced a fifteenth-century French jetton (252). A date from the fifteenth to the early sixteenth century for these thicker tiles thus seems highly probable. The largest piece (context 283, mentioned above) is from a mid fifteenth-century kitchen layer.

Whether this group of thick tiles represents the original kitchen roof of *c.*1400 or a later fifteenth-century replacement we cannot say for certain. One cannot even be certain that they derive from the kitchen roof rather than some other part of the college, but the former does seem to be the most likely origin. Whoever commissioned these unusually thick tiles clearly intended them to last for many years. In their thickness they might have been a ceramic replacement for the stone tiles used to roof many of Oxford's medieval and post-medieval college buildings. The published accounts for Queen's do not appear to mention ceramic roof tiles (although stone 'slaters' are mentioned). One can only presume, given their size and weight, that the tiles were produced fairly locally. Future excavations will hopefully throw more light on the nature of this newly identified late-medieval type. Samples have been added to the Oxford medieval tile fabric reference collection. Although thick late-medieval tiles continued to turn up in post-medieval contexts (either from a still extant roof or as re-deposited material) only one piece of fairly definite smooth post-medieval type roof tile was identified (253).

Ridge Tile (17 pieces, 999 g)

These are medieval thirteenth- to fourteenth-century and perhaps fifteenth-century types, mostly quite worn, and nearly all of which appear to be residual. Several pieces with rounded crests occur in a pale brown oolitic limestone-tempered fabric (Fabric IB), some with traces of greenish glaze. This type is thought to have come from north-west Oxfordshire.[71] The other pieces are in local red sandy fabrics, some of them with a green or a clear glaze. Some of the latter may be contemporary with the early college.

Floor Tile (3 pieces, 663 g)

These comprise two possible products of the Penn/Chiltern tileries, including a decorated tile, and one plain glazed tile. The latter is an edge fragment from a thick (33 mm) late-medieval-style quarry tile in a ?burnt grey sandy fabric, with a traces of blackish glaze and a single surviving circular keying stab on the underside. A fifteenth- to sixteenth-century date is likely (context 279, a rubbly dumped deposit). The other two tiles are residual in post-medieval contexts. The first is a fragment from the edge and centre part of a decorated medieval floor tile 25 mm thick. This has almost exactly the same fabric, glaze and printed white slip eagle design as a more complete decorated tile found during the evaluation (see below and Fig. 13). The fabric of the more fragmentary piece (context 209), however, is more heavily streaked with thin lenses and swirls of white clay or marl against a salmon-pink background. It also contains moderate fine and coarse pellets of red-brown iron-rich clay. Although the design appears to be identical to the larger tile – with a right-facing eagle's head – there appears to be a beak-like projection of white slip on the left side of the eagle's head as well, but more downturned, possibly suggesting an imperial-style double-headed eagle (although it only has a single head despite the possible presence of two beaks). Traces of the corner quatrefoils also survive. The more complete tile from the evaluation (context 124, the fill of a wall robber trench; Fig. 13), is 132 mm wide and 23–25 mm thick and has bevelled sides. The design is printed in white slip under a clear glaze and shows a crudely executed right-facing eagle with outstretched wings. In the surviving upper corners are large quatrefoils with a discontinuous border that arcs over the eagle's head.

An almost exact parallel for the eagle tile was recovered from Eynsham Abbey, the only difference being that the latter has a simple shield on the eagle's breast (possibly present but blundered on the Queen's tile).[72] The Eynsham tile is also a 14th-century Penn/Chiltern product (Oxford Fabric 1Vb) and is considered to be a variant of Haberly CCLV.

The college accounts record the tiling of the newly-enlarged chapel in 1519, probably under the auspices of Robert Langton, a benefactor of the college.[73] Floor tiles published from the chapel include tiles with the rebus of Robert Langton and others with a crudely executed lion, so there can be little doubt that the tiles date from this period.[74] Whether the eagle tiles here could also be this late remains a possibility. Unfortunately very little is known about the source of these early sixteenth-century decorated tiles, or how they can be safely distinguished from the earlier Penn types.

71 Ibid.
72 N. Mitchell, 'The Floor and Roof Tile', in Hardy et al., *Aelfric's Abbey*, pp. 209–12, Fig. 8.2, no. 5.
73 Magrath, *Queen's College*, vol. 1, p. 166.
74 L. Haberly, *Mediaeval English Paving Tiles* (Oxford, 1937), designs CCLIX and CCLVIII.

The other (third) possible Penn/Chiltern tile (context 239) is a near-complete cut triangular floor tile – originally square but broken into two triangular tiles along a deeply scored diagonal line made before firing. This has exactly the same pink streaky fabric as the tile just described (209). The upper surface is covered with a uniform white slip showing bright yellow under a clear glaze. The sides are knife-cut and bevelled. Although chipped, the original side width was an estimated 130 mm, with a long (diagonal) base width of 170 mm. The thickness is 29 mm, which makes it comparable to late-medieval quarry tiles.

Brick (10 pieces, 11.034 kg)

These include two complete light brown early Tudor bricks removed as samples from a hearth (247), and two other complete bricks possibly of seventeenth or early eighteenth-century date from a replacement hearth (211), plus scraps of nineteenth-century brick (details in archive).

Miscellaneous CBM (20 pieces, 607 g)

Mostly small undiagnostic pieces of medieval tile and a few pieces of nineteenth-century stoneware drainpipe (details in archive).

THE STONE BUILDING MATERIALS by JOHN COTTER and RUTH SHAFFREY

Stone building material comprises 12 pieces weighing 8,925 g from two dumped contexts (107 and 121). These represent a minimum of eleven stone roofing tiles that are present as large fresh pieces, in one or two cases complete or nearly complete. None shows evidence of mortar but some show limey percolation deposits from years of exposure and weathering, although none shows evidence of marked exposure or wear. They are mostly of grey or yellowish limestone of various grades, roughly hewn, although one appears to be in a fine grey sandstone. Most appear to be of rectangular or sub-rectangular shape, probably with a rounded upper end with a centrally placed, neatly bored, circular nail hole. Measurable widths are in the range 160–200 mm. Lengths are in the range 180–290+ mm but the longest examples are incomplete. Thicknesses vary from 11 to 25 mm with the latter thickness being fairly common. Nail holes are 9–11 mm in diameter. One smaller tile is roughly teardrop-shaped with the nail hole at the narrower end. This had a length of 210 mm, width of 160 mm, and is 20 mm thick. Size variability is common in stone tiles as different sized tiles were made for different areas of the roof, with the smallest at the top and the largest at the bottom. One is of similar working to a roof-stone but is rather thick and may have been more appropriate as a wall course or a floor stone, although it shows no evidence of having been used for either. Traditionally stone roofing tiles or 'slates' of this type are said to come from the Stonesfield quarries in north-west Oxfordshire. Their use in Oxfordshire is documented from the late twelfth up until the early nineteenth century.

ARCHITECTURAL STONE by ALISON KELLY

Introduction and Methodology

A total of 16 fragments of architectural worked stone were recovered from dumped deposits or were re-used within later works. All worked stone was fully recorded and entered into a spreadsheet for further analysis. Information recorded included moulding type, cut marks, mortar, paint traces, and graffiti.

Nature of the Assemblage

The majority of stonework was in a fragmentary state and pre-dated the eighteenth century, but was found in later phase contexts and had evidently been reused, with several pieces having mortar traces on worked surfaces. All samples were of limestone with variation in the colour and shelliness. The individual types cannot be conclusively identified by further research, but it can be assumed that the majority of the stone originates from quarries close to Oxford as transportation costs would have been high.[75] Stone for carving may have been sought from further afield as a smooth grain with less inclusions would be preferred for carved details.

Sources of Stone

The main Oxford stone used in the construction of Oxford buildings in the thirteenth to fifteenth centuries was supplied from Wheatley and, later, Headington. Dressings were made using Taynton and Burford stone, although

[75] D. Parsons, 'Stone', in J. Blair and N. Ramsay (eds.), *English Medieval Industries: Craftsmen, Techniques, Products* (London, 1991), p. 22.

the latter decayed quickly and needed frequent replacement. College archives show purchases of stone for the chapel (built 1378–9) from Wheatley and Taynton, as well as from the stone yards at Osney Abbey.[76] Headington stone was also used: 136 loads of Headington stone were bought for the construction of a hall in 1398–9.[77]

The eighteenth-century college buildings were constructed between 1713–21 and were of Headington freestone and Burford stone. Burford stone was used for dressings and in 1714 a large quantity was purchased and part transported to site by boat.[78] The stone did not weather well and in the nineteenth-century much was replaced by Bath Stone.[79] Some, probably interior, stone paving is of Bladon stone and documentary sources place orders for this in the accounts of 1713–1715; a different type of Bladon stone was also used for stone dressings.[80] Other stone used by the college included Bibury, a Great Oolite freestone, and the cupola over the gateway on High Street was replaced in 1909 with one of Portland Stone.

Description of the Assemblage

A full record of the stone is available in the archive; for the most part the assemblage comprised re-used stonework in the medieval college's stone surfaces, a hearth (214) and the fill of a stone drain (259). The stone from the bedding for the hearth may have originally formed part of a sill or drip course.

Found below the eighteenth-century kitchen wall (context 1015) is a large piece of a carved stone measuring 370 x 170 x 340 mm, which depicts an angel holding a shield displaying the rebus of Robert Langton, who was a Doctor of Civil Law in 1501 (Fig. 14). The head has broken off but a figure with the remains of a wing can clearly be seen. The shield displays the initials 'RL' and his rebus, which is a barrel with a long note on. The whole piece has a moulded background and the face of the arms has limewash traces and small score lines/claw marks. The sides are rougher in finish with visible chisel marks. The top of the arms is angled back towards the rear and one corner is rounded with the opposite corner squared. This coat of arms possibly dates to *c.*1517 and was possibly located within the porch of the west range. Traces of a creamy mortar can be seen on the worked faces.

Also of interest were a possible door jamb recovered from the medieval western wall of the west range (210; S.F 17), and a large block (310 x 200 x 200 mm) of window tracery, with rebates on inside edges for glass, that was reused within a nineteenth-century well (1001).

METALWORK by LEIGH ALLEN

Introduction

A total of ninety-four metal objects were recovered from the investigations. They comprise twenty-eight copper alloy objects, sixty-four iron objects (including forty-nine nails or fragments from nails), and two lead objects. The copper alloy and lead objects are in reasonable condition although many are corroded. The ironwork is in very poor condition; the objects are heavily corroded and fragmentary and very little of the original metal survives.

The copper alloy assemblage includes three coins/jettons (see below) which have been identified by Paul Booth (Roman) and Martin Allen (post-Roman).

Methodology

The objects have been visually examined and have been categorised using a range of standard reference reports. The whole assemblage has been X-rayed in order to aid identification. The assemblage includes a number of small miscellaneous fragments of strip or sheet (mostly recovered during the environmental sample processing) which have not been included in this report; a full catalogue is held in the archive. There are eight copper alloy and sixty-four iron objects that are identifiable and the items of note are discussed below.

Late Anglo-Saxon

A total of four identifiable objects were recovered from late Anglo-Saxon contexts: a coin, and three nails. The coin (SF 20) from context 294 (the upper fill of late Anglo-Saxon pit 293) has been identified by Martin Allen (see below).

Eleventh to Fourteenth Centuries

Three copper alloy objects were recovered from medieval pre-college contexts: a coin, a stylus and a strap loop. Paul Booth has identified the coin (SF 18), which is Roman (see below); it came from context 285 (a fourteenth-century

[76] W.J. Arkell, *Oxford Stone* (London, 1947), p. 38.
[77] Ibid. p. 47.
[78] Ibid. p. 62.
[79] Ibid. p. 100.
[80] Ibid. p. 113.

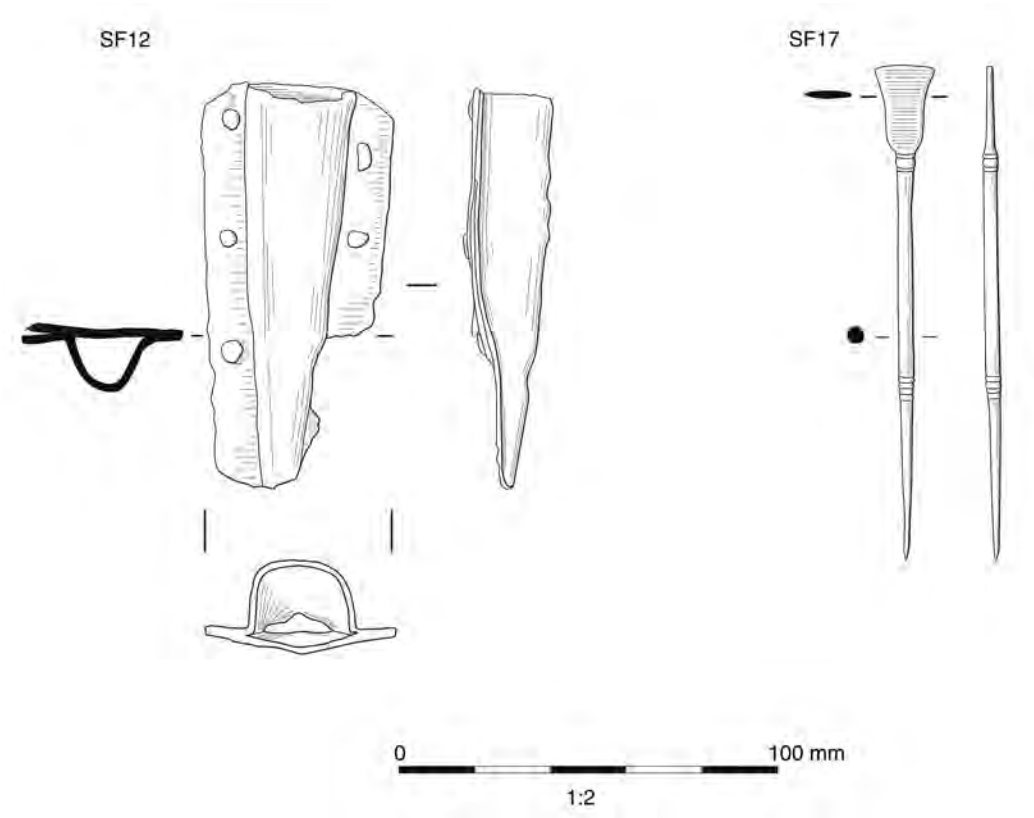

Fig. 21. Metal small finds: skimmer handle socket (S.F. 12) and stylus (S.F 17).

make-up layer). A complete copper alloy stylus (SF 17; Fig. 21) was recovered from context 284 (a pre-college soil layer). It has a broad triangular spatulate head and a shaft that tapers to a point. The shaft is decorated with incised grooves around it at the centre point on the shaft and at the junction with the head. Post-Roman styli can be distinguished from Roman styli in that the latter tend to have narrow spatulate heads, slender moulded shafts and are generally made of iron. Styli with broad spatulate ends were introduced in the Anglo-Saxon period but continued in use into the twelfth century when they were generally replaced by styli with T-shaped erasers.[81] The strap loop (SF 19) was recovered from context 288 (fill of a mid fourteenth-century construction cut). The loop, rectangular with two opposed internal projections, is designed to hold down the loose end of a belt or strap which projects beyond the buckle. The lack of a central bar may be to allow straps with mounts on them to pass easily through the loop. This form of strap loop dates from the late twelfth to the late fourteenth century.[82]

The Early College

The majority of the metal objects from the site were recovered from the medieval and early post-medieval college deposits. The fifty-six identifiable objects include four copper alloy objects, and fifty-two iron (including forty-nine nails). The copper alloy objects comprise a jetton, a skimmer handle socket, a fragment from a sheet metal vessel, and a lace tag. The iron assemblage, excluding nails, comprises fragments from a blade, a horseshoe, and a looped hasp.

Martin Allen (see below) has identified the jetton (SF14) recovered from context 252 (a fifteenth- to seventeenth-century stone floor). The skimmer handle socket (SF 12; Fig. 21) came from context 253 (a fifteenth- to seventeenth-

[81] M. Biddle and D. Brown, 'Writing and Books', in M. Biddle, *Object and Economy in Medieval Winchester* (1990), pp. 729–32, Fig. 211, no. 2283.

[82] G. Egan and F. Pritchard, *Dress Accessories, c.1150–c.1450*, Medieval Finds from Excavations in London, 3 (1991), pp. 229–35, Fig. 149, no. 1258.

century repair to the stone floor), and comprises two plates that would have been riveted to the edge of the skimmer; the upper plate is curved so that the end of a long wooden handle could be inserted. Skimmers were used for removing items from stew pots and superseded flesh hooks at the end of the Middle Ages.[83] A fragment from a sheet metal vessel (SF 23) was recovered from context 280 (fill of a sixteenth-century pit). The sheet is irregularly shaped and has a rolled edge (probably the rim). Complete sheet metal vessels are seldom recovered from site as they would have been highly valued objects compared to ceramic and wooden examples. This is demonstrated by the repair patches that were used on vessels to extend their useful lives. Large pieces of sheet metal could also be offered for resale to smiths for recycling.[84] The lace tag (SF 15) came from context 274 (a sixteenth- to seventeenth-century make-up layer). These small cylinders of copper alloy sheet were designed to stop the ends of cords or laces from fraying. In the absence of buttons and zips, laces would have been used to secure all manner of clothing as well as shoes and boots. Lace tags are generally recovered in large numbers from medieval and post medieval contexts.

The majority of the iron objects are nails; just under half of the nails came from context 270 (fill of hollow in floor 269) dating to the fifteenth and sixteenth centuries. Fragmentary pieces of a horseshoe, a blade fragment, and the upper part of a looped hasp were also recovered.

The Later College

A small number of objects, including nails and miscellaneous fragments of copper alloy and lead, were recovered from modern college contexts.

Conclusion

The assemblage recovered from Queen's kitchen is relatively small and in poor condition, with the notable exception of the stylus and the skimmer handle socket that have survived complete. The stylus recovered from its early medieval context hints at the use of buildings for academic purposes before the formal foundation of the college. The skimmer handle socket, the sheet metal vessel fragments and the possible blade fragment are the only metalwork evidence for the use of the site as a working kitchen. Other than this the assemblage for the most part comprises nails and miscellaneous fragments recovered from pit fills, floors, and make-up layers.

METAL FINDS FROM THE 1987 TRENCH by IAN SCOTT

There are five metal finds, all copper-alloy, including 2 Nuremberg jettons (L7 and L13), two lace tags (L13 and L14) and a small hinged lid, with hooked fastening (L14). One of the jettons is a late sixteenth-century type of Hans Krauwinckel II, the other appears to be a type of Hans Schultes III, or possibly II, probably of early seventeenth-century date.

1. Nuremberg jetton, rose orb type of Hans Krauwincle II. Obverse: rose surrounded by fleurs de lys and crowns, inscription: 'HANNS KRAVWINCKLE IN.NV'. Reverse: cross and orb and inscription: 'GOTES SEGEN MACHT REICH'. Late sixteenth century. D: 21 mm x 22 mm. L7
2. Nuremberg jetton, rose orb type possibly of Hans Schultes III. Obverse: rose surrounded by fleurs de lys and crowns, inscription: 'HAN[s Sch]VLTES. NOR'; over stamped 'R'. Reverse: cross and orb and inscription: unclear, possibly illiterate. Late sixteenth or early seventeenth century. D: 24 mm x 25 mm. L13. The dating of this jetton is slightly uncertain since there were three Hans Schultes working in Nuremberg between 1553 and 1612. This is unlikely to be the work on Hans Schultes I, but could be a jetton of either Hans Schultes II (1586–1603) or III (1608–1612).
3. Lace tag, with in-turned seam. L: 41 mm. L13
4. Lace tag fragment, with in-turned seam. L: 15 mm. L13
5. Small lid formed from thin copper-alloy sheet. The lid is round in outline with one straight edge. The latter edge part of a hinge; the opposite side edge has an upturned catch plate and hook to secure the lid. L: 44 mm; W: 41 mm. Lid from a small box or container, possibly a tinder box. L14

ROMAN COIN by PAUL BOOTH

A single Roman coin (SF 18) was recovered from context 285 (a fourteenth-century make-up layer). It is an Antoninianus of Victorinus AD 268–70.

[83] G. Egan, *The Medieval Household: Daily Living c.1150–c.1450*, Medieval Finds from Excavations in London, 6 (1998), pp. 155–7, Fig. 126.

[84] H. Rees et al., *Artefacts and Society in Roman and Medieval Winchester. Small Finds from the Suburbs and Defences, 1971–1986*, Winchester Museum Service (2008), p. 257.

POST-ROMAN COIN AND JETTON by MARTIN ALLEN

A corroded Æthelred II cut halfpenny of the *Long Cross* type (issued *c.*997–1003), Huntingdon mint, moneyer Edwine, was recovered from an Anglo-Saxon pit fill (294), and was identified by X-ray. Coin hoard evidence indicates that coins of the *Long Cross* type were effectively removed from circulation soon after the end of their period of issue in *c.*1003.[85] In addition a fifteenth-century copper-alloy jetton was recovered from a college floor level (252). Full details in archive.

WORKED BONE OBJECTS by LEIGH ALLEN

A fragment from a simple double-sided bone comb was recovered from context 248 (sixteenth- or seventeenth-century make-up layer for a brick oven). The fragment is from one end of the plain 'H'-shaped frame. The frame has a flat section tapered at the edges and with fine and coarse teeth. Crudely cut incised lines act as guidelines for the cutting of the teeth. Combs of this form are post-medieval in date.[86] A well-finished undated ivory object, possibly a handle, was recovered from a mortar layer (1987 trench, L8).

CLAY TOBACCO PIPES by JOHN COTTER and ANDREW NORTON

The Kitchen Excavations

A total of 162 pieces of clay pipe weighing 1005 g were recovered; their condition was generally quite fresh with several complete bowls present. Bowl shapes have been compared to those published from St Ebbe's, Oxford (Oswald 1984).[87] Most of the bowl types are common Oxford types datable to *c.*1650–1690 and to *c.*1690–1720.[88] Two residual bowls of *c.*1630–1650 were also recovered. The latest bowl dates to *c.*1730–1780. Apart from burnishing on the bowls and stems of most examples, and milling on the rims of the seventeenth-century examples, the assemblage was plain with no makers' marks present. A full catalogue is held in the archive.

The Pipes from the 1987 Trench

A total of 309 fragments of clay tobacco pipes (1874 g) were recovered from dumped deposits and a buried soil. The assemblage comprised 266 stems including three mouth-pieces and forty-three bowl fragments. Twenty-eight of the bowls could be dated, and were broadly contemporary with the material from the kitchen extension work. Bowl shapes have been dated by reference to the assemblage recovered from St Ebbe's, and Oswald's general typology (Oswald 1975).[89] Plain stems have been counted but no attempt has been made at stem bore analysis.

The majority of the material (275 fragments) was recovered from deposits in-filling the medieval north range (L7). The thirty-nine bowls include five residual mid to late seventeenth-century types and 18 bowls dated to the first half of the eighteenth century. The eighteenth-century bowls are comparable with type 16 from St Ebbe's and London type 10G (1700–40), and most likely are the waste of the engineers and labourers charged with demolishing the north range, and constructing the new west wing in 1709/10.[90]

Like many clay pipe assemblages from Oxford, there are no makers' marks or stamps. The only decoration comprises milling on the seventeenth-century bowl rims and burnishing on the eighteenth-century bowls and stems. A highly polished bowl from a mortar layer (L4) is also of note, and is comparable with a type 12 from St Ebbe's (1720–40).[91] There is a full catalogue in the archive.

GLASS by IAN SCOTT

The glass assemblage comprises thirty-seven sherds of glass recovered from dumped deposits, including thirty-one sherds of vessel glass, and six sherds of post-medieval window glass. The assemblage is dominated by

85 M. Allen, 'The Volume of the English Currency, *c.*973–1158', in B. Cook and G. Williams (eds.), *Coinage and History in the North Sea World, c.AD 500–1200. Essays in Honour of Marion Archibald* (Leiden, 2006), pp. 515–17.

86 P. Galloway, 'Toilet Equipment: Combs of Bone, Antler and Ivory', in Biddle (ed.), *Object and Economy*, p. 670, Fig. 185, no. 2179.

87 A. Oswald, 'Clay Pipes', in T. Hassall et al., 'Excavations in St Ebbe's, Oxford, 1967–1976, Part II: Post-Medieval Domestic Tenements and the Post-Dissolution Site of the Greyfriars', *Oxoniensia*, 49 (1984), pp. 251–62.

88 Ibid. Figs. 51.B and 51.C.

89 Oswald, 'Clay Pipes', pp. 251–62; A. Oswald, *Clay Pipes for the Archaeologist*, BAR BS, 14 (Oxford, 1975).

90 Oswald, 'Clay Pipes', p. 256, Fig. 53.

91 Ibid. 254, Fig. 52.

sherds from wine bottles, most of which are sherds from early bottles dating from the mid seventeenth to the mid eighteenth centuries. Although there are changes in the shape of wine bottles through this period they are generally characterised by thick walls and broad round or squat bodies. Gravel path 208 produced five sherds of late seventeenth- or early eighteenth-century date, including a large sherd with a seal which reads: '[Th]omas Swift Oxon'. Thomas Swift is known from wine bottle seals from Broad Street and was thought to occupy No. 47 Broad Street.[92] Other clearly identifiable pieces of vessel glass are two sherds from late seventeenth- or eighteenth-century phials or pharmaceutical bottles and a very badly weathered, possible wine glass fragment from soil horizon 229. A full catalogue is available in the archive.

Glass from the 1987 trench

Three sherds of glass were recovered: two sherds from the neck of an early eighteenth-century wine bottle (L4, the mortar layer) and the sherd from the neck and shoulder of the seventeenth- or eighteenth-century pharmaceutical bottle (L7, range backfill).

FIRED CLAY by CYNTHIA POOLE

Three fragments of fired clay were recovered from two sieved samples: one fragment (3 g) from a sixteenth-century pit fill (context 280) and two fragments (5 g) from a fifteenth- or sixteenth-century floor (context 269). Neither sample can be assigned to any form or function, though they are likely to derive from a hearth or oven structure.

LITHICS by DAVID MULLIN

A narrow blade with utilisation along one lateral margin, a long end scraper of Neolithic date and burnt flint weighing 263 g were recovered from medieval and post-medieval contexts. The scraper is noteworthy, as few flints of this date have been recovered from the city.

ANIMAL BONE by LENA STRID

Introduction

The animal bone assemblage was collected from Anglo-Saxon pit fills, medieval (and later) floor deposits within the college kitchen, and pits and dumped deposits within the kitchen garden (Table 1). The bones were recovered through hand collection during excavation and from wet sieving of bulk samples sieved to 0.5 mm. The sieved fragments constituted 80% of the total number of fragments, but only 15% of the total fragment weight. Although the majority of the sieved fragments could not be identified to taxa, they were a good source for small fish bones and bones from small birds and mammals.

A full record of the assemblage can be found in the site archive. Two fragments of rib from medium-sized mammals were also recovered from the 1987 trench (contexts L4 and L7).

Methodology

The bones were identified at Oxford Archaeology using standard methodologies, full details of which can be found in the archive. Serjeantson (1996) was used for zoning, with the addition of mandible zones by Worley (forthcoming).[93] An attempt to distinguish pheasant from domestic fowl on coracoid, femur, and tarsometatarsus was carried out using Cohen and Serjeantson and Erbersdobler; nevertheless, no bones could be identified as pheasant.[94] The condition of the bone was graded on a 6-point system (0–5). Grade 0 equating to very well preserved bone, and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable.

[92] E.T. Leeds, 'Glass Vessels from the XVI Century and Later from the Site of the Bodleian Extension in Broad Street', *Oxoniensia*, 3 (1938), p. 156, no. 5 and plate xii, c.9–c.10.

[93] D. Serjeantson, 'The Animal Bones', in S. Needham and T. Spence, *Refuse and disposal at Area 16 East Runnymede. Runnymede Bridge Research Excavations*, vol. 2 (London, 1996), pp. 194–253; F. Worley, 'Animal Bones from Northfleet', in P. Andrews et al., *Settling the Ebbsfleet Valley, CTRL Excavations at Springhead and Northfleet, Kent – Vol. 2: The Finds*, OA monograph, forthcoming.

[94] A. Cohen and D. Serjeantson, *A Manual for the Identification of Birdbones from Archaeological Sites* (London, 1996); K. Erbersdobler, 'Vergleichend Morphologische Untersuchungen an Einzelknochen des Postcranialen Skeletts in Mitteleuropa Vorkommender Mittelgroßer Hühnervögel', Inaugural Dissertation, Ludwig-Maximilians-Universität, München (1968).

Table 1. Number of identified bones/taxon by chronological phase

	Saxon	Medieval		
		Total	Kitchen deposits	Pits
MAMMALS				
Cattle	48	195	67	128
Sheep/goat	64	186	96	90
Sheep	8	3		3
Goat		1		1
Pig	11	75	28	47
Horse	5			
Dog	34	3	2	1
Rabbit		305	122	183
Fallow deer		2		2
Roe deer	3	1		1
Deer sp.	1	3		3
Total mammals	174	774	315	459
BIRDS				
Domestic fowl	5	218	141	77
Galliformes		4	2	2
Goose	3	16	4	12
Duck		9	3	6
Teal		5		5
Swan		3		3
Partridge		1	1	
Pigeon		2	2	
Lapwing		3	1	2
Woodcock		8	1	7
Snipe		20	2	18
Wader		2	2	
Magpie		1	1	
Passerine		85	59	26
Indet. bird	1	699	440	259
Total bird	9	1076	659	417
COMMENSAL FAUNA				
House mouse		14	14	
Mouse sp.		45	42	3
Bank vole		1	1	
Vole sp.		1	1	
Total commensal fauna		61	58	3
Microfauna		236	168	68
Small mammals	1	27	23	4
Medium mammals	68	760	509	251
Large mammals	41	496	178	318
Indeterminate	131	5122	2386	2737
TOTAL	434	8560	4302	4258
Total identified to species	182	1166	549	617

Results

The Anglo-Saxon assemblage

The Anglo-Saxon assemblage was in a good condition, with the 71.4% of the bones having 'excellent' (Grade 0) or 'good' (Grade 1) preservation and 28.2% of the bones having 'fair' (Grade 2) preservation. Burnt bones were absent, suggesting that meat was usually boiled rather than roasted. Only 9.2% of the bones showed gnaw marks from carnivores, most likely dogs. This suggests that the bones were disposed of fairly rapidly and in a manner to avoid opportunistic scavenging.

The assemblage consisted of 434 bones, of which 41.9% could be identified to taxa. Domestic mammals dominate the assemblage, which is common for most sites during the Anglo-Saxon period.[95] Sheep/goat is the most common taxa, both in numbers of fragments (NISP) and in Minimum Number of Individuals (MNI); this is in contrast to Hinxey Hall where, unusually, pig comprises 35–46% of the tenth- to eleventh-century bones.[96]

In general, sheep/goat and cattle are the most common taxa from Anglo-Saxon sites in Britain.[97] Which animal is predominant usually depends on environmental factors, especially for rural sites. Cattle are more suited for grazing on wetland pasture than sheep, and are thus generally more common on sites near floodplains. However, urban settlements necessitate trade, and depending on the population's dietary preference and socio-economic status, the urban meat markets may be supplied by animals driven long distance, as well as animals from the immediate environment. While cattle would have grazed on the Thames flood plain, sheep were probably brought in to Oxford from surrounding villages.

Due to the relatively low numbers of bones per taxon, it is difficult to establish butchery patterns for the major domesticates. The ten ageable sheep/goat mandibles in the Anglo-Saxon assemblage from Queen's showed a wide range of slaughter ages, from one to two to four to six years. No peaks could be established, suggesting a mixed economy based around both meat and wool. Dairy products may also have been utilised, but was not the focus of the sheep/goat husbandry. For cattle and pig, the results are tentative due to small sample sizes. The fusion data for the cattle bones suggest sub-adult and adult cattle were slaughtered. Pigs, on the other hand were, as is usual, mainly slaughtered at a young age. Two pig jaws show an age at death of half a year to a year, whereas most of the long bones are unfused, indicating juvenile or sub-adult individuals.

The remaining domestic species, horse and dog, were, with the exception of the dog burial in context 284, found in small numbers. This is common for urban assemblages, apart from those from tanyards or other animal-related industrial sites. The above-mentioned dog burial consists of bones from the torso and upper limbs. A further two bones were found in the construction cut fill for the medieval kitchen foundations, which truncated the burial.

Leg bones from red/fallow deer and roe deer indicate that venison formed a small part of the diet. The presence of a female roe deer skull suggests that butchery of hunted game took place nearby. Roe and red deer were also present in late Saxon deposits from Hinxey Hall.[98]

The avian assemblage comprises five bones of domestic fowl and three of goose. It is not certain whether the goose bones belong to greylag goose or its domestic form. None of the bird bones are juvenile, and local rearing cannot be confirmed, but it is likely that fowl were kept in the town. Chickens are omnivorous and are easily kept in backyards, whereas geese require larger areas for grazing and were usually kept outside towns in the medieval period. Both taxa were utilised for meat, eggs, and feathers. Goose wing feathers were an important material for quills.[99]

Butchery marks were recorded on forty-four bones. Several vertebrae from medium and large mammals were split axially, indicating the practice of suspending the carcass and dividing it into left and right sides. This practice became common in the mid eleventh century and it has been suggested that it is connected to sturdier construction methods, allowing for house beams to take the weight of a heavy cattle carcass.[100] Axial splits were also recorded for two sheep skulls and two pig mandibles, but it is not certain whether this is related to the above-mentioned butchery practice or to a separate portioning of the heads for filleting or cooking. Disarticulation was carried out with heavy cleavers and knives at three tarsal joints of cattle, one knee joint of pig and one carpal joint, one mandible and one neck region of sheep/goat. Cut marks indicative of filleting were recorded on the shafts of a cattle humerus and a sheep/goat tibia. Filleting and portioning were also recorded on ribs from medium and large

95 N. Sykes, 'From *Cu* and *Sceap* to *Beffe* and *Motton*: the Management, Distribution and Consumption of Cattle and Sheep, AD 410–1550', in Woolgar et al. (eds.), *Food in Medieval England*, p. 164.

96 Wilson et al., 'Animal Bones and Shell', in C. Halpin, 'Late Saxon Evidence and Excavation of Hinxey Hall, Queen Street, Oxford', *Oxoniensia*, 48 (1983), pp. 68–9.

97 Albarella, 'Pig Husbandry and Pork Consumption in Medieval England', in Woolgar et al. (eds.), *Food in Medieval England*, p. 73.

98 Wilson et al., 'Animal Bones and Shell', pp. 68–9.

99 D. Serjeantson, 'Birds: Food and a Mark of Status', in Woolgar et al., *Food in Medieval England*, p. 141.

100 T. O'Connor, *Animal Bones from Flaxengate, Lincoln, c.870–1500*, The Archaeology of Lincoln, vol. 18, 1 (Lincoln Archaeological Trust, 1982), p. 16.

mammals. A cattle metatarsal and humerus were split longitudinally, in order to extract marrow for use in cooking. A cattle and a sheep skull had their horn cores chopped off, indicating utilization of horn sheaths for horn working.

Pathological conditions were evident on three bones. Minor exostoses were found anteriorly on a cattle tarsal bone (navicular-cuboid). These are likely to be linked to muscle strains, deriving from use of the animal for traction.[101] A sheep/goat metatarsal displayed a bony ridge anteriorly on the proximal part of the shaft. This condition may be connected to animals walking on very hard surfaces or from changes in physical activity due to foot rot and similar diseases.[102] A sheep horn core had a small thumb print depression on the medial part of the horn core. This condition is associated with malnutrition and milking stress, although the aetiology is still unclear.[103]

The faunal assemblages in Oxford that are dated to the Anglo-Saxon period are usually rather small. Cattle and sheep/goat dominate the other assemblages, although it is difficult to establish a precise intra-species ratio, as there are several assemblages with a high percentage of butchery waste from these species, believed to be dumps from nearby butchers.[104] Small numbers of horse, dog, and deer are present and domestic fowl and goose dominate the avian remains, with far fewer numbers of wild bird bones present.[105]

The medieval (post-Conquest) and later assemblage

The bone preservation within the later-medieval deposits was very good, with 25.2% of the bones having excellent preservation (Level 0), 46.2% having good preservation (Level 1) and 28.5% having fair preservation (Level 2). In general the bones from the floor deposits were better preserved than those from the pits, suggesting rubbish pits were left open and bones were affected by the weather and to some extent scavengers. Gnaw marks were recorded on thirty-three bones from both pit fills and floor deposits, most caused by dogs. One bone with rodent gnaw marks, and two with gnaw marks from small dog or cat were found in the kitchen floor deposits. The overall scarcity of gnaw marks indicates that dogs and cats rarely had access to food waste in the kitchen or its waste dumps.

Burnt bones – ranging from charring to calcination – were rather rare. Charring of bones usually indicates roasting – a relatively fuel-demanding and labour intensive cooking method, more suitable for young animals than adult ones.[106] A survey of transcribed medieval recipes shows a preference for using meat, including poultry, in pies and stews rather than roasts.[107] Indeed, most of the 106 burnt bones are small indeterminable fragments, suggesting repeated heating of bones fallen into the hearth.

The medieval assemblage consists of two different groups: kitchen floor deposits and external pits. The species representation is similar, suggesting that the pits were used for kitchen waste disposal. However, the pits do contain a larger number of lower leg bones from rabbits and domestic fowl than the floor deposits. Indeed, 90% of the rabbit remains in the pits comprise bones from the head, feet and lower legs, as opposed to 54% in the floor deposits. It would seem that table waste from domestic fowl and rabbits were mostly disposed of elsewhere, either in pits outside the excavation area or off-site.

Of the larger domesticates, bones from both meat-rich (torso and upper-legs) and meat-poor (head, lower legs and feet) body parts were present in both floor deposits and pits. The pig remains were generally evenly distributed between meat-poor and meat-rich body parts, reflecting the utilisation of head meat and trotters. This is not unsurprising, as pig feet contain more muscles and fatty tissues than cattle and caprine feet. The cattle and caprine remains are dominated by limb bones (scapula, humerus, radius, ulna, pelvis, femur and tibia). For both taxa, metapodials and phalanges are rare, whereas cattle skull fragments are more common than sheep/goat skull fragments. Indeed, skull fragments are the second most common element of the medieval cattle assemblage, after loose teeth. In contrast to the sheep/goat skull fragments, most of the cattle skull fragments are juvenile and the prevalence of unfused skull elements could explain their high frequency in the assemblage. The representation of skeletal elements suggests that the college kitchen bought entire as well as partial carcasses, and divided them on site. Deer and rabbits were probably acquired from managed estates, while cattle, sheep/goat and pig could have been bought from local butchers as well as from estates.

Though the assemblage is dominated by rabbit and domestic fowl, in fragment count as well as in calculated minimum number of individuals, beef and mutton or lamb would have constituted a more significant part of college meals owing to their larger size. While several sheep bones were found, only one goat bone was identified, and for this reason it is believed that the majority, if not all, of the caprine remains are sheep. Goat is absent in the

101 J. Baker, 'The Study of Animal Diseases with Regard to Agricultural Practices and Man's Attitude to his Animals', in C. Grigson and J. Clutton-Brock (eds.), *Animals and Archaeology, 4: Husbandry in Europe*, BAR IS, 227 (Oxford, 1984), pp. 253–4.

102 K. Dobney et al., *Of Butchers and Breeds. Report on Vertebrate Remains from Various Sites in the City of Lincoln*, Lincoln Archaeological Studies, 5 (1995), p. 43.

103 U. Albarella, 'Depressions on Sheep Horncores', *Jnl. of Archaeological Science*, 22 (1995), pp. 699–704.

104 Dodd, 'Synthesis and Discussion', p. 45.

105 B. Wilson, 'Animal Bone Reports', in Dodd (ed.), *Oxford Before the University*, pp. 347–65.

106 Sykes, 'From *Cu* and *Sceap* to *Beffe* and *Motton*', p. 70.

107 Gode Cookery: http://www.godecookery.com/allrec/allrec.htm (accessed 27 March 2009).

Merton College, Lincoln College and Blackfriars assemblages, while being present in small numbers in the urban Church Street assemblage.[108]

The bone assemblage indicates that the college diet differed markedly from the average urban medieval diet. Juvenile domesticates are rather common: calves and piglets each comprise *c.*40% of all medieval cattle and pig remains from the Queen's assemblage while the sheep or goats were slaughtered as sub-adults or adults. A similar preference for mature sheep, younger cattle and piglets was found in late medieval deposits from Merton College.[109] This preference for calves and piglets could not be found at Lincoln College, where most cattle, sheep/goat and pigs were sub-adult or adult when slaughtered.[110] The Church Street assemblage contained mostly sub-adult and adult cattle, although in the fourteenth- to fifteenth-century layers calf mandibles outnumbered those of adult cattle.[111] This seems to be connected to a rising post-medieval preference for veal.[112] Slaughterhouses were not situated in the Church Street area, which suggests that the calf mandibles form part of domestic waste.

Two limb bones from a dog were found in the construction cut fill of the medieval west range. The bones are similar in colouration and size as the ones from a semi-articulated dog burial in the late Anglo-Saxon or early medieval soil layer 284, which was truncated by the construction cut. It is most likely that they derive from the same dog.

Rabbits are also much more common in college assemblages, and were mostly kept on managed warrens on aristocratic or ecclesiastical estates. The meat was rather expensive, and thus likely to be reserved for feasting in richer households. Rabbit bones are also common in medieval deposits from Hinxey Hall and are present, though not frequent, at Blackfriars.[113] Records from Merton College mention that in 1395 rabbits were bought for a feast, costing 6–8d. a pair.[114]

The predominance of domestic fowl in the avian assemblage is consistent in both college and monastic assemblages. Chickens could be bred locally, and supply was unlikely to be an issue. Indeed, records from 1394–7 mention expenses for repairs to the hen-house on the college grounds.[115] However, only two fowl bones contained medullary bones, indicating that the bones derived from hens during their egg-laying cycle.[116] In Church Street, goose is the second most numerous taxa, followed by duck. Other wild birds are rare, but include small numbers of swan, stork, pigeon, waders, and corvids.[117] Goose and duck are generally common in the three college assemblages and also at the urban monastic establishment of Blackfriars, but goose was rare at nearby Hinxey Hall.[118] Other birds represented at the colleges and Blackfriars include smaller numbers of pigeon, waders and passerines and swan and heron occur in the Merton assemblage.[119] Unusually, cormorant was represented in medieval deposits at Hinxey Hall and swan, white stork and crane are represented in early medieval deposits at Oxford castle.[120]

Consumption of wildfowl is generally connected to high-status households in medieval England. However, waders are found throughout urban assemblages, suggesting a different socio-economic connection than birds like swan, crane and heron, which are almost exclusively found in high-status assemblages.[121] Small passerines are also

[108] B. Wilson, A. Locker, and B. Marples, 'Medieval Animal Bones and Marine Shells from Church Street and other Sites in St Ebbe's, Oxford', in T. Hassall et al., 'Excavations in St Ebbe's, Oxford, 1967–1976, Part I: Late Saxon and Medieval Domestic Occupation and Tenements, and the Medieval Greyfriars', *Oxoniensia*, 54 (1989), microfiche V, D10; M.R. Wilkinson, 'The Fish Remains', in G. Lambrick, 'Further Excavations on the Second Site of the Dominican Priory, Oxford', *Oxoniensia,* 50 (1985), pp. 192–3.

[109] F. Worley and E.J. Evans, 'Animal Bone', in Poore et al., 'Excavations at No. 4A Merton Street', pp. 315–16.

[110] B. Charles, 'The Animal Bone', in Kamash et al., 'Late Saxon and Medieval Occupation', p. 254.

[111] Wilson et al., 'Medieval Animal Bones', in Hassall et al., 'Excavations in St Ebbe's', pp. 261–2.

[112] M. Maltby, *Faunal Studies on Urban Sites. The Animal Bones from Exeter, 1971–1975*, Exeter Archaeological Reports, vol. 2 (University of Sheffield, 1979), p. 32.

[113] Wilson et al. 'Animal Bones and Shell', pp. 68–9; Wilkinson, 'Fish Remains', pp. 192–3.

[114] E.M. Veale, 'The Rabbit in England', *Agricultural History Review*, vol. 5, 2 (1957), p. 89.

[115] Magrath, *Queen's College*, vol. 1, p. 85.

[116] J.C. Driver, 'Medullary Bone as an Indicator of Sex in Bird Remains from Archaeological Sites', in B. Wilson et al. (eds.), *Ageing and Sexing Animal Bones from Archaeological Sites*, BAR BS, 109 (Oxford, 1982), pp. 251–4.

[117] Wilson et al., 'Medieval Animal Bones', microfiche VI, C5.

[118] M. Harman and D. Bramwell, 'The Animal and Bird Bones', in Lambrick, 'Further Excavations', pp. 190–2; Wilson et al., 'Animal Bones and Shell', pp. 68–9.

[119] Ingrem, 'Bird, Fish and Small Mammals', pp. 255–260; Worley and Evans, 'Animal Bone', p. 312; Wilkinson, 'Fish Remains', pp. 192–3.

[120] Wilson et al., 'Animal Bones and Shell', pp. 68–9; R. Scales and R. Nicholson, 'The Animal Bone', in Norton et al., 'Excavations at Oxford Castle', forthcoming.

[121] U. Albarella, and R. Thomas, 'They Dined on Crane: Bird Consumption, Wild Fowling and Status in Medieval England', *Acta Zoologica Cracoviensia*, 45 (2002), pp. 24–5.

common, particularly for high-status and ecclesiastical households.[122] The prevalence of wild birds in the Queen's assemblage suggests that college diets are more typical of high-status households than of average urban households.

Butchery marks occurred on bones from cattle, sheep/goat, pig, fallow deer, deer sp., domestic fowl, goose, duck, and unidentified medium and large mammals. A cattle sacrum, cattle and pig atlases, as well as vertebrae of medium and large mammal were split axially, indicating that the carcasses were suspended and divided into left and right sides during initial butchery. The lower legs were probably cut off at this stage, as evidenced by chop marks and cut marks on cattle and sheep/goat bones from the tarsal joint.

While most butchery marks in the assemblage are only found on one or two individual bones, there are several instances of portioning of pig and sheep pelves, transverse portioning of calf, adult cattle and sheep/goat scapulae, calf ulnae, as well as transverse chop marks on pig and sheep atlases and axes. This suggests standardised butchery techniques including removal of heads, secondary butchery of calf shoulders and pig and sheep rear joints and portioning of shoulder blades. Other less common indications of disarticulation and portioning occurred on one cattle scapula and proximal and distal femora, proximal tibia and proximal ulna of sheep/goat. Filleting of meat from pig femora was frequent. Filleting marks also occurred on a cattle hyoid, cattle and sheep/goat pelves, a sheep/goat humerus, a sheep/goat scapula, and a fallow deer tibia. Longitudinal splitting of a sheep/goat tibia suggests utilisation of marrow. One sheep skull had the horn core chopped off. This may have occurred as part of the skinning process, as horns were usually included in the skin that was sent to the tanners, who sold the horns on to the horn workers.[123] Butchery marks on the bird bones consist almost exclusively of cut marks and chop marks at the ends of limb bones to facilitate disarticulation of the carcass. One fowl femur had cut marks on the shaft from filleting.

Pathological conditions were noted on bones from cattle, sheep, pig, domestic fowl, and unidentified medium mammal. Smooth woven bone growth, suggesting an inactive infection, occurred supradistally on one cattle femur. Indications of the use of cattle for traction were found on one cattle pelvis, which displayed small exostoses all around the lateral side of the acetabulum. One sheep metacarpal had a ridge of exostoses on the lateral part of the distal metaphysis. It is possible that this condition is connected to muscle strains from walking on very hard surfaces, but the aetiology is unclear.[124] An articulated pig radius and ulna displayed exostoses and bone absorption in the middle of the proximal metaphysis where the two bones connect. These are probably signs of an infection. Such pathologies are more common than other pathological conditions on pig bones, and it has been suggested that they may be caused by abrasions, related to pigs being kept indoors, possibly under relatively crowded conditions.[125] However, since the affected part of the bones is not accessible from the outside, the infection is either not caused by abrasion, or the origin of the infection occurred elsewhere on the limb and spread.

Spurs were noted on twenty-one tarsometatarsal bones from domestic fowl (53.8% of all tarsometatarsal bones with lower mid-shaft present). Of these twenty-one bones, two had their spurs broken or chopped off, possibly for castration or to facilitate tied-on metal spurs on fighting cocks.[126] One of the tarsometatarsals showed some bone remodelling at the spur attaching point. This is suspected to be an infectious reaction to the removal of the spur. Small exostoses, suggesting muscle strains or infections, were recorded on three bones of domestic fowl: at the acetabulum of one pelvis, on the distal condyles of one tibiotarsus, and on the lateral side of the shaft of a tarsometatarsal bone. One fowl ulna had a lump of bone mid-shaft. This may be a haematoma - a smooth bone swelling caused by sub-periosteal bleeding.[127]

One rib from a medium mammal had a swelling at the neck of the rib combined with some porosity. This may be a healed fracture, possibly with some sign of a subsequent infection at the break.

A chronological analysis of the medieval and later kitchen floor deposits

The west range was most likely constructed at the end of the fourteenth century, giving us a *terminus post quem* for the kitchen floor deposits. The latest floor layers probably date to the beginning of the eighteenth century, and were in use prior to the demolition of the kitchen and construction of the new college buildings. It is difficult to establish a precise absolute chronology between the floor layers. Radiocarbon dating is not a suitable method, as dates received from large parts of the medieval period tend to overlap due to fluctuations in the level of 14C in the

122 D. Serjeantson, 'A Dainty Dish: Consumption of Small Birds in Late Medieval England', in H. Buitenhus and W. Prummel (eds.), *Animal and Man in the Past: Essays in Honor of Dr. A.T. Clason*, Groningen, ARC-Publicatie, 41 (2001), p. 263.

123 D. Serjeantson, 'Animal Remains and the Tanning Trade', in D. Serjeantson and T. Waldron (eds.), *Diet and Crafts in Towns: The Evidence of Animal Remains from the Roman to the Post-Medieval Periods*, BAR BS, 199 (Oxford, 1989), pp. 136–8.

124 Cf. Dobney et al., *Of Butchers and Breeds*, p. 43 for proximal metatarsals.

125 Baker, 'The Study of Animal Diseases', p. 256.

126 B. West, 'Spur Development: Recognising Caponised Fowl in Archaeological Material', in Wilson et al. (eds.), *Ageing and Sexing Animal Bones*, p. 260.

127 J. Baker and D. Brothwell, *Animal Diseases in Archaeology* (London, 1980), p. 83.

atmosphere.[128] A relative chronology, on the other hand, is possible and thus an analysis of dietary habits through time can be attempted. Only three deposits yielded enough bones to be suitable for an intra-layer analysis: Floor 269 (728 bones), the fill of a hollow within floor 269 (context 270 – 1,439 bones), and a make-up deposit (250) for hearth 247 (1,803 bones). Context 269 is the earliest identified floor deposit (*c.*1400) and context 250 is associated with a hearth constructed from Tudor bricks, and is unlikely to pre-date 1500 (see Table 2).

Almost 95% of each of the three contexts comprise sieved fragments, leading to a predominance of bones from smaller fauna such as birds and rabbits. One cannot therefore use the floor deposits to argue for intra-species predominance of the larger domestic taxa. Due to the lack of corresponding dating between the layer sequences of the floors and the pits, an overall analysis of dietary habits is difficult. Furthermore, only one pit fill (280) contained a large number of bones (see Table 2), from a pit probably of a similar date as deposit 250.

Table 2. Number of identified bones/taxon in kitchen deposits 269, 270, 250 and pit 270

	Kitchen deposit			**Pit Fill**
	269	**270**	**250**	**280**
MAMMALS				
Cattle	4	34	17	83
Sheep/goat, sheep	3	40	37	51
Pig	8	2	14	24
Rabbit	16	16	78	181
Deer sp.				3
Total mammals	31	92	146	342
BIRDS				
Domestic fowl	22	48	28	60
Galliformes		2		2
Goose				9
Duck			1	4
Teal				5
Swan				3
Pigeon			2	
Lapwing			1	2
Woodcock		1		7
Snipe			2	18
Wader	1	1		
Passerine	7	11	41	26
Indet. bird	68	155	208	254
Total bird	98	218	283	315
Microfauna	1	2	230	71
Small mammals	1	11	9	4
Medium mammals	35	128	215	211
Large mammals	17	60	39	145
Indeterminate	544	928	881	2680
TOTAL	728	1439	1803	3843
Total identified to species	61	155	221	403

Nevertheless, some observations can be made: bird bones comprised between 10.0%–15.7% of all bones in the floor contexts, decreasing in the later layers. There is a slightly more variation of bird taxa in the earlier context, although the numbers are so few that this must be regarded as very tentative. The largest number of bird taxa are found in pit fill (280). Rabbit bones are more common in the later deposits. If contexts 250 and 280 are contemporary, it is possible that the rabbit remains represent a feasting event; the total MNI from these two contexts are eight rabbits. Written sources from Merton College mention forty braces of rabbits being bought for a

[128] E. Østergaard, *Woven into the Earth: Textile Finds in Norse Greenland* (Aarhus, 2004), p. 253.

feast in 1395, revealing the large quantities of meat that were used on a single occasion.[129] It is also worth noting that proportionally sheep bones are most common in context 270, the fill of a hollow within the earliest floor surface.

Most parts of the fowl and rabbit skeleton are present in the kitchen deposits. As mentioned above, there is a higher percentage of rabbit butchery waste (bones from skull and feet) in the pits than in the floors, which suggests that table waste was mostly disposed of elsewhere. Skull and mandible fragments of rabbits are very rare in the kitchen deposits, and are found in small numbers in the pits. It is not known whether the paucity of elements from the head is a taphonomical issue or whether it stems from butchery practices. Today heads and feet are usually removed at the same stage, and if this was the case in the Middle Ages one would expect a slightly higher presence of rabbit skull and mandible fragments in the kitchen deposits, to correlate with the number of foot bones.

The scarcity of fowl foot bones in the kitchen deposits is largely an identification issue. The indeterminate bird bones largely consist of long bone fragments and phalanges, which suggests that it is exceedingly likely that the majority of the indeterminate bird remains are fowl. The absence of skull fragments of both fowl and indeterminate birds may be due to taphonomic processes, either directly due to scavengers or to the general fragility of the skull bones. Another possibility is that the bird heads never entered the kitchen. College records show the presence of a hen-house in the grounds in the late fourteenth century.[130] If the birds were slaughtered outside the kitchen, their heads may have been disposed of at the nearest rubbish tip, where scavenging birds, cats, or dogs could have accessed them.

Conclusion

With the exception of the Hinxey Hall assemblage, where pigs were relatively more frequent, the Anglo-Saxon faunal assemblage is similar to contemporary Oxford assemblages. Sheep and cattle are the most numerous taxa, followed by pig, dog, and horse. Deer are present in small numbers, indicating that hunting was fairly small-scale. Cattle and sheep/goat were mostly slaughtered as sub-adult and adults, suggesting a mixed economy of dairy products, meat, and wool/traction, whereas pigs were mostly slaughtered young.

The medieval kitchen waste deposits provide us with valuable information regarding college diet from the beginning of the fifteenth century until the beginning of the eighteenth century and are discussed above. College diet seems, perhaps, to be a separate entity from the usual grouping: rural, urban, ecclesiastical and high-status, but due to their relative scarcity in Britain, faunal assemblages from medieval colleges have rarely been considered in discussions on medieval diet. A synthesis and discussion of college diet would be a valuable topic for future research.

FISH BONE by REBECCA NICHOLSON

Introduction

The fish remains were abundant and well preserved; over 2,000 bones and dermal structures were identified from over 4,000 fish bone fragments, almost all of which were recovered from bulk soil samples. The assemblage includes material from Anglo-Saxon cess pit fills, medieval floors, make-up deposits, and associated rake-out deposits as well as the fill of a medieval pit. All of the medieval deposits were associated with the use of the college kitchen.

Methodology

Bones and scales were extracted from the residues of samples wet-sieved to 0.5 mm as part of the flotation process (see Smith, below). All have been identified to species and anatomical element largely using the author's personal reference collection in conjunction with published guides.[131] Where identifications were uncertain the bones have been identified either to family level or have been classified as unidentified. Bones were identified to species where possible, otherwise to genus or family. Spines, ribs, rays cranial fragments and branchial bones were only identified when particularly diagnostic to species or genus. Clupeid bones (herring/sprat/pilchard) were identified to species where possible; the great majority were classified as herring, based on their size and/or morphology. Small clupeid bones may be from sprat, but no positive identifications of this fish were made. Some bones and scales were noted in the sample flots, but these have not been fully recorded.

Fish scales were abundant, but can be difficult to identify as they vary in appearance not only between taxa but also with position along the body. Fragmented scales are particularly problematic. Given these limitations, the majority of scales recovered were identified as cyprinid, perch, pike, and sea bream. Other dermal structures included the distinctive bucklers or thorns from thornback ray. To avoid grossly over-representing fish represented

[129] J.E. Thorold Rogers, *A History of Agriculture and Prices in England*, 7 vols. (Oxford, 1866–1902), vol. 2, p. 644.

[130] Magrath, *Queen's College*, vol. 1, p. 85.

[131] Especially J. Watt et al., *Guide to the Identification of North Sea Fish using Premaxilla and Vertebra*, ICES, Cooperative Research Report, 220 (Denmark, 1997).

by numerous robust scales, the counts of fish remains in Table 3 exclude scales and dermal denticles unless no other elements were recorded for the taxon, in which case a count of '1' was recorded.

Fish sizes were estimated by a combination of bone measurements and direct visual comparison with bones from comparable modern fish. Measurements were taken, using digital callipers to 0.01 mm, on eel cleithra following Coy.[132] No other bones were suitable for measurement. Measurements and identifications will be available in the site archive: where sizes are indicated as follows: tiny (under 150 mm length), small (150–300 mm), medium (300–600 mm), large (600–1000 mm), extra-large (over 1000 mm).

The Assemblage

Full identifications and associated information have been recorded in the archive. Table 3 gives the numbers of identified bones by taxon and sample.

Late Anglo-Saxon (tenth to eleventh centuries)

Fish remains were recovered from two samples taken from primary cess pit fills (sample 9, context 297 and sample 10, context 320) but were relatively rare. One hundred and thirty one bones have been identified and of these, almost all bones were from eel and herring, which is typical for cessy fills dating to this period; these fish seem to have been eaten 'bones and all'. Measurements taken on eel cleithra indicated fish of around 400 mm, a similar size to those found in the later deposits. Two pike vertebrae were recovered, from a tiny fish (well under 200 mm long) and from a fish of around 350 mm, and bones from either nine-spined (*Pungitius pungitius*) or three-spined stickleback (*Gasterosteus aculeatus*) were found in the flot from sample 10. Both sticklebacks are found in slow-moving streams and pools but judging by their regular occurrence in medieval cess pits, also seem to have been eaten.

Medieval (eleventh to fourteenth centuries)

Only two clupeid vertebrae were recovered from this period, both from sample 8, hollow fill 290.

College floors and pits (fourteenth to eighteenth centuries)

While absolute dates have not been obtained, samples from the floors and associated features within the college kitchen were taken from a clear stratigraphic sequence, and hence are discussed here in relative chronological order.

Sample 6 was taken from the earliest floor surface (context 269) and possibly included rake-out from hearth 272. Of the 213 identified and recorded bones, eel, herring, and cyprinids (including dace and chub) were the most frequent fish by the crude measure of number of bones, followed by smaller gadids (including pollack, whiting, and haddock) gurnards, and pike. Other fish identified by one or several bones include smaller flatfishes, perch, ruffe, and salmon. Sea breams (Sparidae) were identified from bones and scales; one vertebra was from a fish over 400 mm long. Significantly, four caudal vertebrae appear to be from small and medium sized (up to 400 mm) burbot. Burbot are now extinct in British waters. Small fragments of mussel shell were common in the residue and the charcoal-rich flot included bones from taxa represented in the residue together with scales from cyprinids, sea bream, perch and pike.

Sample 5 (context 270) was taken from a potentially late fifteenth-century fill of a hollow within floor 269, in front of hearth 272 (Sample 6). Eel, pike, gadids (including cod, whiting, and ling), and smaller flatfish (including sole and plaice, flounder or dab) were well represented in this sample of 232 identified bones. Red gurnard, tub gurnard, thornback ray, mackerel, conger eel, perch, and cyprinids (including small roach) were also present. A number of cyprinid and small pike scale fragments were observed in the flot.

Sample 4 (context 261) represents an ashy dump of material or hearth sweepings in front of hearth 272. Only fourteen identifiable fish bones were recovered from what was primarily a dump of charcoal; taxa identified included clupeid(s), a cyprinid, whiting, perch, and smaller flatfish (plaice, flounder or dab).

Sample 2 (context 250) was from a late fifteenth- to mid sixteenth-century make-up layer for a brick hearth or oven. The assemblage of 1,038 identified bones included bones from marine and freshwater fish. The majority of bones were from small fish and seem likely to represent table waste rather than waste from preparing fish. The most frequent fish by number of bones was eel, followed by herring. Eel outnumbered herring by approximately 1.5:1, which is fairly unusual for a medieval deposit and probably explicable by the distance of Oxford from the sea. Where measurements were made, eels of about 550 mm (representing a mature female) and 360 mm were indicated. Freshwater cyprinids were also common and included roach, dace, barbell, and bream. Small pike, trout, salmon, and perch were identified from smaller numbers of bones and scales. Bones from gadids (cod family fish) were relatively infrequent considering the medieval date of this assemblage. Ling, cod, and whiting were all present; several very large ling and cod vertebrae had been butchered. Thornback ray, flatfish (including plaice), gurnards, conger eel, mackerel, red sea bream, and wolf fish were also identified.

[132] J. Coy, 'The Provision of Fowls and Fish for Towns', in Serjeantson and Waldron (eds.), *Diet and Crafts in* Towns, pp. 25–40.

Table 3: Fish remains from The Queen's College: numbers of recorded items

Sample	**9**	**10**	**8**	**6**	**5**	**4**	**2**	**7**	**Hand**	**Grand Total**
Context	297	320	290	269	270	261	250	280		
Date	L.Saxon	L.Saxon	1050–1150	M.15th–16th century	L.15th–16th century	L.15th–16th century	L.15th–16th century	L.15th–16th century		
Feature Type	Fill of pit 293	Fill of pit 293	Fill of pit / hollow 289	Floor make up layer	Fill of pit 271	Layer in front of hearth	Floor make-up layer	Fill of pit 278		
Processed soil (L.)	36	8	34	38	40	39	37	40		
Raja clavata – Thornback					1		17	11		29
Raja sp. – Rays							4	+		4
Accipenser sturio – Sturgeon								1	1	2
Anguilla anguilla – Eel	23	45		28	55		448	49		648
Conger conger – Conger				1	1		10	2	2	16
Salmo trutta – Trout							1			1
Salmo salar – Salmon							1			1
Salmonidae – Salmon/Trout				1			7			8
Clupea harengus – Herring	39	19		41	37		275	290		701
Sprattus sprattus – Sprat							3			3
Clupeidae – Herrings			2	2	9	2	5			20
cf. *Thymallus thymallus* – Grayling				1						1
Leuciscus leuciscus – Dace							1			1
Leuciscus cephalus – Chub				1						1
Leuciscus sp.				1						1
Rutilus rutilus – Roach					1		8			9
Barbus barbus – Barbel							1			1
Abramis brama – Bream							1			1
Cyprinidae – Carp family	1			20	21	1	81	3		127
Esox lucius – Pike	1	1		10	14		28	6		60
Gadus morhua – Cod					25		16	8	4	53
Pollachius pollachius – Pollack				11				1		12
Gadus/Pollachius							1	5		6

Melanogrammus aeglefinus – Haddock				1						1
Merlangius merlangus – Whiting				4	12	4	25	5		50
Gadus/Merlangius				15	9		3			27
Molva molva – Ling					4		13	7		24
Lota lota – Burbot				3						3
Gadidae – Cod family				23	5		15	12		55
Perca fluviatilis – Perch				5	2	1	3	3		14
Gymnocephalus cernuus – Ruffe				2						2
Percidae – Perches					1		2	1		4
Gasterosteidae – Sticklebacks		2						+		2+
Scomber scombrus – Mackerel					7		2			9
Anarhichas lupus – Wolf fish							1			1
cf. *Anarhichas lupus*					3					3
Pagellus bogaraveo – Red sea bream				1			1		1	3
Sparus sp. *Gilthead*/Couch's sea bream								2		2
Sparidae – Sea breams				2				0	1	3
Aspitrigla cuculus – Red gurnard					1					1
Eutrigla gurnardus – Grey gurnard				1			1			2
Trigla lucerna – Tub gurnard				8	2		7	5	1	23
Triglidae – Gurnards				24	4		6	12	1	47
Bothidae – Left eyed flatfish				1						1
Solea solea - Sole					4					4
Pleuronectes platessa-Plaice				1			3			4
Pleuronectes/Platychthys-Plaice/ Flounder					2					2
Pleuronectidae – Right eyed flatfish				5	11	6	47	4	2	75
Flatfish				3	1		2	1	2	9
Unidentified	5	1	1	530	333	16	423	633	3	1945
(blank)										
Total	69	68	3	746	565	30	1462	1061	18	4022

+= observed in flot but not in the residue

Sample 7 (context 280) came from a late fifteenth- to mid sixteenth-century pit fill from pit 278, located to the west of the west range. Four hundred and twenty-eight bones have been identified and this excludes bones from the same taxa collected in the very large sample flot, which was not fully sorted. Unlike the previous samples, herring was the most frequently identified fish by number of bones (68% of the assemblage). Eel and gurnard were again common, and cod, ling, pollack, and whiting also present. Conger eel, thornback ray, smaller flatfishes, and sea bream (either gilthead bream or Couch's sea bream) were identified, the last from both bones and numerous scales. Cyprinids, pike, and perch appeared much less significant than in other samples, although small pike scales were common. The small and tiny cyprinids found in other samples were relatively scarce in Sample 7, but tiny cyprinid bones together with several stickleback bones (Gasterosteidae) were present in the flot. Sturgeon was represented by scute fragments collected by hand from the same fill. Fragments of oyster and mussel shells, together with occasional barnacles, were also observed in the residue and flot.

CHARRED AND MINERALISED PLANT REMAINS by WENDY SMITH

Nine samples were collected from Anglo-Saxon and medieval features, including a charcoal deposit associated with a medieval hearth (sample 4, context 261), a burnt floor surface (sample 6), medieval floor layers probably representing rake-out from the hearth mixed with general rubbish (samples 2 and 3), medieval pits (samples 5 and 7), and Anglo-Saxon pits (samples 8–10). The samples were assessed using standard OA methodologies and only two samples (8 and 9) produced charred seeds (in the widest sense). In both cases, relatively small assemblages of highly clinkered grains, most of which cannot be identified to species level, were recovered. Sample 8 (pit 289) produced a few charred weed/wild plants (wild radish – *Raphanus raphanistrum* and buttercup – *Ranunculus acris* L./*repens* L./*bulbosus* L.) but the weed component was extremely limited. These weed seeds are of a similar size to cereal grain and it is likely that there are merely crop contaminants, which have become charred during disposal of debris from cereal grain cleaning or processing, or through the intentional use of such debris as fuel.[133] Mineralised plant remains were also recovered from the Anglo-Saxon pit fills (samples 8–10). In some cases fragments of bran were clearly observed; however, in general mineralisation was not complete and in most cases only amorphous, sub-rounded, unidentifiable 'cessy' material was observed. The abundant elder (*Sambucus nigra* L.) remains from some of these deposits may be mineralised, but one cannot rule out the possibility that they are also sub-fossil remains. The recovery of elder is, however, typical of urban assemblages and not particularly informative.[134]

THE WOOD CHARCOAL by DANA CHALLINOR

Introduction

The charcoal from the excavations at Queen's was abundantly and well preserved, including many large roundwood stems and some fragments over 600 mm in size. A selection of the samples was examined from two late Anglo-Saxon pits, and several contexts from the medieval college kitchen. The aims of the analysis were to provide an overview of the range of taxa in use and any chronological changes between the Anglo-Saxon and medieval fuel supply. Additionally, the high number of roundwood fragments from the medieval kitchen samples offered the opportunity to examine woodland management.

Methodology

The samples were initially scanned at low magnification to provide an estimate of taxonomic diversity. The quantity of charcoal for further analysis examined for each sample was deliberately varied according to the apparent diversity of species represented and the level of potential for maturity analysis. Between twenty and forty fragments were selected from the range of sieve sizes represented (>10, 4, and 2 mm). The charcoal was grouped according to the anatomical features observed in transverse section at x7 to x45 magnification, with representative fragments identified in longitudinal sections using a Meiji incident-light microscope at up to x400 magnification. Identifications were made with reference to Schweingruber, Hather, and modern reference material; nomenclature and classification follow Stace.[135]

[133] e.g. G. Jones, 'An Ethnoarchaeological Investigation of the Effects of Cereal Grain Sieving', *Circaea*, 12, 2 (1996), pp. 177–82.

[134] e.g. A.R. Hall, 'A Brief History of Plant Foods in the City of York: What the Cesspits Tell Us', in E. White (ed.), *Feeding a City: York. The Provision of Food from Roman Times to the Beginning of the Twentieth Century* (Totnes, 2000), pp. 22–41.

[135] F.H. Schweingruber, *Microscopic Wood Anatomy*', 3rd edn, Swiss Federal Institute for Forest, Snow and Landscape Research (1990); J.G. Hather, *The Identification of Northern European Woods. A Guide for Archaeologists and Conservators* (London, 2000); C. Stace, *New Flora of The British Isles*, 2nd edn (Cambridge, 1997); D. Zohary, and M. Hopf, *Domestication*

A number of roundwood stems were present in four of the medieval samples. These were examined at low magnification to record diameter, growth ring counts, presence of bark and, where possible, season of felling. Charred material may be up to 40% narrower than the diameter of living stems.[136]

Results

The full fragment count and assessment results are recorded in the archive. Tables 4 and 5 present the data from the late Anglo-Saxon pits and the medieval features respectively, using a representational key that incorporates both the assessment and full identification data. Nine taxa were positively identified; *Ulmus* sp. (elm), *Fagus sylvatica* (beech), *Quercus* sp. (oak), *Corylus avellana* (hazel), *Populus/Salix* (poplar/willow), *Prunus* sp. (cherry/blackthorn), Maloideae (hawthorn, apple, pear, service), *Acer campestre* (field maple), and *Fraxinus excelsior* (ash). The level of identification varies according to biogeography and anatomy of the species represented. The species of *Prunus* spp. (cherry/blackthorn) are distinguishable on the basis of ray width, but it was not diagnostic in this instance.

Twenty-one roundwood fragments were recorded, most retained bark and showed that the season of felling was autumn or winter. The majority of stem diameters measured between 10 mm and 30 mm, with a few smaller twigs and a couple of large >60 mm pieces. These latter pieces were incomplete, so the measurements represent the minimum age/diameter. Stem age (based on ring counts) varied, but there was a cluster of fourteen stems aged between 12 and 20 years. Examination of growth ring patterns revealed ten with wide early growth rings, which is common in coppiced stems, and many showed signs of later stress with narrow, slow growth towards the outer edge.

Discussion

The late Anglo-Saxon pits

Pit 289 was a probable garden feature or planting hole filled with re-deposited garden soils. It is striking that the range of taxa identified was very limited for a deposit that could have come from several events. Moreover, the assemblage was notably analogous to that of pit 293, which was a possible cess pit backfilled with re-deposited topsoil. The charcoal from both pits is likely to have had a common origin from domestic debris, and it is clear that oak was the main fuel wood utilised. While the dataset from the Anglo-Saxon period is too limited to be truly representative, it is nonetheless consistent with the results from Oxford castle where the preferred fuel wood in the late Anglo-Saxon period was oak and hazel.[137]

Table 4: Results of the charcoal analysis from the late Anglo-Saxon pits

	Feature type	**Pit 289**	**Pit 293**
	Context number	290	297
	Sample number	8	9
Quercus sp.	oak	Xrh	Xrh
Corylus avellana L.	hazel	x	x
Prunus sp.	cherry type	x	x

X = dominant; x = present; r = roundwood; h = heartwood

The medieval kitchen samples

Contexts 250 and 269 came from floor make-up layers which related to the kitchen hearth, and 261 was a layer in front of the hearth. All were dominated by large fragments of beech charcoal, but the make-up layers were more mixed in taxonomic composition, as might be expected from deposits which had accumulated over a period of time. Context 261 appeared to be less diverse in character. The two pits (271 and 278) were in the kitchen garden adjacent to an orchard. If trimmings from the orchard were used for firewood, this is not evident in the assemblages analysed.

Documentary sources for the medieval period show that the provision of firewood was a significant component of woodland management, and was usually supplied from underwood species and the branches of timber trees.[138] At Queen's, the evidence from charcoal stems suggests that some beech firewood was supplied from coppices

of Plants in the Old World: The Origin and Spread of Cultivated Plants in West Asia, Europe, and the Nile Valley, 3rd edn (Oxford, 2000).

136 R. Gale and D. Cutler, *Plants in Archaeology: Identification Manual of Vegetative Plant Materials used in Europe and the Southern Mediterranean to c.1500* (Westbury and Kew, 2000).

137 D. Challinor, 'The Wood Charcoal', in Norton et al., 'Excavations at Oxford Castle', forthcoming.

138 O. Rackham, *Woodlands* (London, 2006), p. 287.

Table 5: Results of the charcoal analysis from the medieval kitchen

	Feature type	Floor make-up layer	Layer in front of hearth	Floor make-up layer	Pit 271	Pit 278
	Context number	250	261	269	270	280
	Sample number	2	4	6	5	7
Ulmus sp.	elm	x			x	
Fagus sylvatica L.	beech	Xr	Xr	Xr	Xr	Xr
Quercus sp.	oak	xh	xh	xrh	Xrsh	xs
Corylus avellana L.	hazel	xr		xr	xr	
Populus/Salix	poplar/willow	x			xr	
Maloideae	hawthorn, pear, apple	x r		xr		x
Acer campestre L.	field maple	x r		xr	xr	xr
Fraxinus excelsior L.	ash	x rh	xh	x	x	

X = dominant; x = present; r = roundwood (bold denotes majority of fragments); h = heartwood; s=sapwood

grown on rotational cycles between fifteen and twenty years, and felled during the dormant season. However, there was enough variety in the stems examined to suggest that a range of wood was utilised, including some mature trunkwood and younger stems. The nature of the roundwood fuel debris would be determined by the types of faggots or billets used in the fire – bakers' ovens, for instance, would have used narrow-gauge faggots, which were swept out of the oven partially charred when the oven had reached baking temperature. The charcoal from Queen's is likely to have come from several deposits of differently sized firewood.

The overwhelming use of beech in the medieval samples contrasts to the late Anglo-Saxon assemblages, indicating that the supply and/or selection of firewood had changed. Such changes could relate to the growth of the university, Queen's own resources, or general trade in the firewood supplies that provisioned Oxford. Evidence from charcoals at other medieval sites in Oxford shows a similar shift to beech.[139] Moreover, beech is a significant component in fuel wood assemblages at other medieval urban sites, for instance Bristol and Southampton.[140] This suggests a widespread change in the medieval period to a preference for beech for fuel. The explanation for this may lie in the fact that beech was not considered a useful timber tree at this time, and the beech woods of the Chilterns, for instance, were primarily valued for supplying London with fuel.[141] Potential sources for fuel wood for Oxford would have included the Chilterns,[142] the Cotswolds, and smaller more local areas of woodland such as Wytham. The college's earliest surviving long roll for 1347--8 records that timber was bought in from Stow Wood, Beckley.[143] Whilst the roll refers to timber for beams and rafters, it is possible that fuel wood was also provided to the kitchens, which controlled the fuel wood supplies for the whole college.

SHELL by LEIGH ALLEN

A total of 1,737 fragments of marine shell weighing 10,757 g were recovered from the excavations. The assemblage comprises mostly oyster (*Ostrea edulis* L.) and mussel (*Mytilus edulis* L.) shell with small quantities of cockle (*Cerastoderma* sp.) and whelk (*Buccinum undatum* L.) also present. The largest groups of shell were recovered from kitchen make-up layer 250, floor layer 269, a fill of a hollow in the floor (context 270) and the kitchen garden pit fills. Full details of shell from all contexts are held in the archive.

The 680 fragments of hand-collected shell (7,620 g – 70.8% of the total weight) are in good condition; the shells are robust and have survived reasonably intact. The 1,057 fragments retrieved from environmental samples (3,137g – 29.1% of the total weight) are much more fragmented, with no complete examples surviving intact.

139 D. Challinor, 'The Wood Charcoal', in Kamash et al., 'Late Saxon and Medieval Occupation', pp. 271–4; D. Challinor, 'Specialist Report Downland E5', in R. Brown, 'Excavations at Southampton French Quarter, 1382', online Oxford Archaeology Library article, forthcoming.

140 Challinor, 'Specialist Report Downland E5'.

141 J.A. Galloway et al., 'Fuelling the City: Production and Distribution of Firewood and Fuel in London's Region, 1290–1400', *Econ. Hist. Rev.* 49 (1996), pp. 458–9, 463–465; P.G. Preece, 'Mediaeval Woods in the Oxfordshire Chilterns', *Oxoniensia*, 55 (1991 for 1990), p. 66; Rackham, *Woodlands*, p. 364.

142 D. Roden, 'Woodland and its Management in the Medieval Chilterns', *Forestry*, 41 (1968), p. 64.

143 Magrath, *Queen's College*, vol. 1, p. 346.

Table 6: Shell types

Shell type	Total fragment count	Total weight
Oyster	1055	9767g
Mussel	654	694g
Cockle	15	30g
Whelk	13	266g
Totals	**1737**	**10757g**

The majority of the oyster and whelk shells were recovered by hand collection whereas the mussel and cockle shell fragments were mostly derived from environmental samples. Without the evidence from sieving the assemblage would have been very biased towards oyster shell.

Table 7: Shell species by collection method

Shell type	Hand collected fragment count (weight)	Sieved fragment count (weight)
Cockle	1 (3g)	14 (27g)
Mussel	38 (33g)	616 (661g)
Oyster	660 (7343g)	395 (2424g)
Whelk	9 (241g)	4 (25g)
Total	**708 (7620g)**	**1029 (3137g)**

The bulk of the assemblage was recovered from mid fifteenth- to early eighteenth-century contexts, with very small quantities of shell coming from the first fifty years of the college or pre-college deposits. Contexts from the earlier phases produced only oyster shell. Mussel, cockle, and whelk fragments only appear in contexts associated with the medieval college kitchen, and reflect the variety of foods eaten during the first 300 years of the college.

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