

# Late Saxon and Medieval Occupation: Evidence from Excavations at Lincoln College, Oxford 1997-2000

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## SUMMARY

*The Oxford Archaeological Unit carried out a programme of archaeological investigations at Lincoln College, Oxford between 1997 and 1999 during the course of construction of new basements and the refurbishment of existing buildings, and in 2000 for new heating and service ducts in the college gardens. The work here has revealed evidence of nearly a thousand years of activity on the site.*

*The excavation of the new wine cellar in 1999 revealed 11th-century Saxon buildings constructed of timber in an area prone to destruction by fire. The excavations produced one of the largest assemblages of late Saxon pottery recovered from work in Oxford, and also pottery associated with the use of the college Kitchen. Environmental samples suggested that this was an area of grain storage in the late Saxon period. Metalwork debris from the earliest horizons suggests that small-scale metalworking also occurred during this period. Thereafter, the site appears to have been waste-ground for c. 300 years.*

*The college buildings were constructed between 1427 and 1437. The foundations of the Great Hall, Buttery, and Kitchen were revealed, descending over 2 m. below the present ground level. Within the Kitchen the postholes of the scaffold erected during the building work in 1437 were found. The appearance of the original fireplaces in the Kitchen was recorded, and a 15th-century brick oven was found behind the modern plaster adjacent to the north fireplace. In addition, the Kitchen was equipped with a massive stone-built well, sunk over 7 m. into the natural gravel. The foundations of a passage building that linked the Kitchen and the Buttery were also excavated and the above-ground evidence was investigated and recorded. The floor of the Buttery was dated by dendrochronology.*

This report concerns the archaeological investigations undertaken by Oxford Archaeological Unit (OAU) at Lincoln College, Oxford, between 1997 and 2000, in the course of building alterations and modifications to existing buildings (Fig. 1). All archaeological work was undertaken on behalf of Norman Machin Associates – architects for the project from 1997 to 1999 – for Lincoln College.

The main programme of work comprised the construction of a new wine cellar within the area formerly known as the Quincentenary Room (Fig. 2). A second cellar or basement was proposed east of the extant Kitchen building, while the Kitchen itself was to be remodelled and a new floor constructed. The Buttery room was likewise to be refurbished. Listed Building Consent for the Kitchen Project was granted in October 1998 for the new works, subject to archaeological mitigation in accordance with PPG 16.<sup>1</sup> In March 2000, OAU

<sup>1</sup> Oxford Archaeological Advisory Service Advice Note, Nov. 1998.

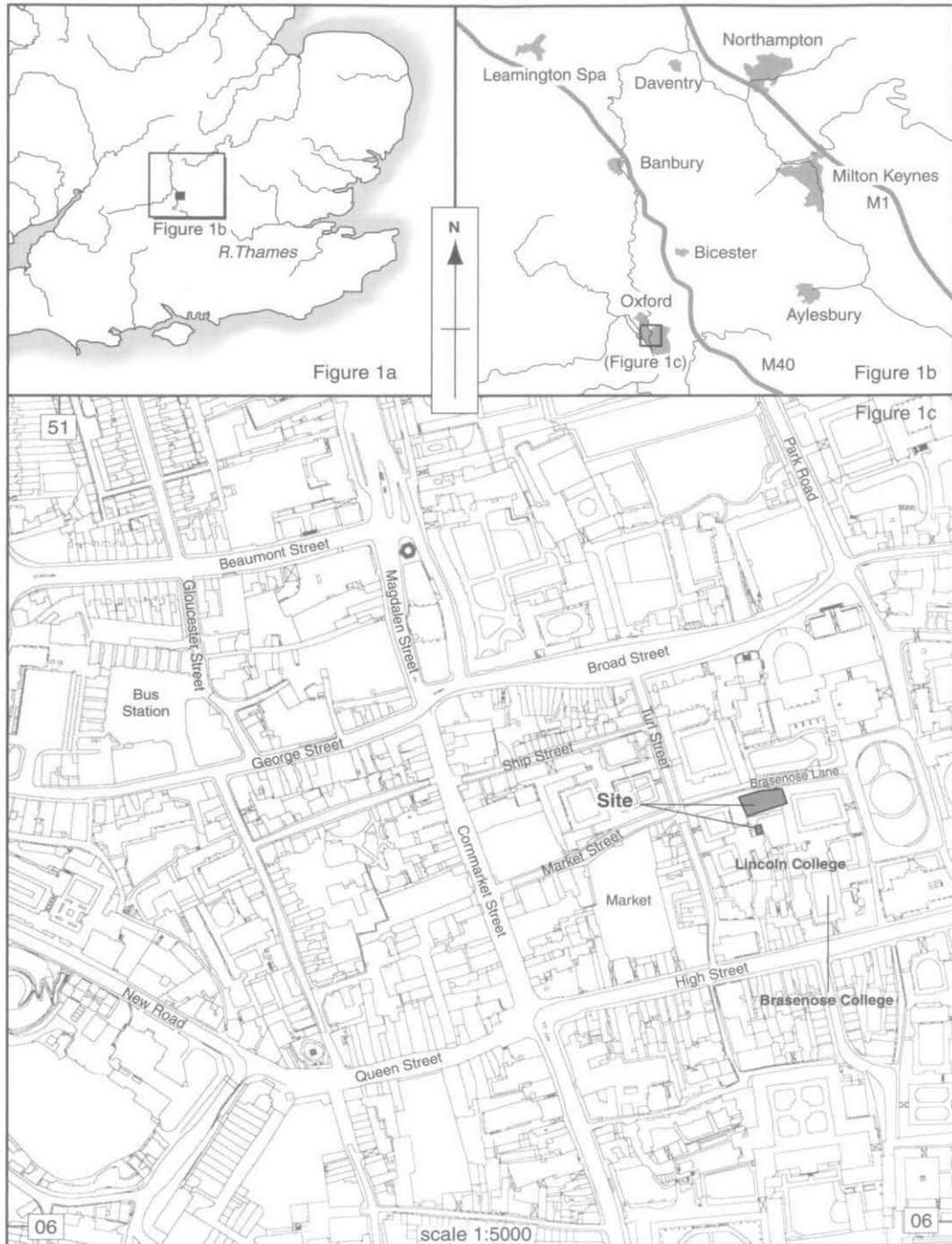


Fig. 1. Site location.

carried out a formal watching brief during the excavation of new service trenches in the Rector's Garden, within the grounds of Lincoln College.

The site archive has been deposited with the Oxfordshire County Museum Service.

#### LOCATION AND GEOLOGY (Fig.1)

Lincoln College is located near the centre of Oxford. The college buildings are bounded to the north by Brasenose Lane, to the west by Turl Street and to the east by Brasenose College. The college is sited on the second gravel terrace of the Thames, and at the time of the archaeological investigations the ground surface lay at *c.* 64.7 m. OD.

#### HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

The site of Lincoln College lies within the defensive circuit of the original Saxon settlement, rather than the later eastern suburb of the town to the east of Radcliffe Square. Probably by the time of the Norman Conquest the block bounded by High Street, Turl Street and Brasenose Lane was already divided up into individual plots of land, and included the parish churches of All Saints (now the college library) and St. Mildred's.<sup>2</sup>

St. Mildred's church was sited on the NW. corner of the future college, with a rectory on its south side and a churchyard.<sup>3</sup> By the early 15th century, the site of the future college was covered by a patchwork of halls, houses and gardens, and some 'tofts', i.e. derelict open spaces or gardens.<sup>4</sup> A century earlier the area was probably entirely built-up. East of the church, along the length of St. Mildred's Lane (modern Brasenose Lane), were three houses: Deep Hall, Winchester Hall, and Oliphant Hall. South of St. Mildred's church on Turl Street were three other houses: Brend Hall, Saucer Hall and Sheld Hall. These houses are all documented from the 12th or 13th century, and several of them were used as 'academic' halls in which students lived, while others were town houses (both might equally be called 'halls').<sup>5</sup>

In 1427, Bishop Fleming of Lincoln obtained the necessary letters patent from the Crown to found a modest *collegium* to train men in theology so that they might 'overcome those who with their swinish snouts imperil the pearls of true theology'.<sup>6</sup> Shortly before the death of Fleming in 1431 some progress had been made in developing the site. St. Mildred's church had been demolished and its revenues passed on to the college, and some buildings had been erected on the site.<sup>7</sup> Fleming's scheme was ambitious since he had little money to finance his foundation; at the time of his death the fledgling college possessed neither a library nor a chapel.<sup>8</sup>

The second rector, John Beke, therefore inherited a college with few buildings and little money.<sup>9</sup> Nonetheless the college was able to round off its property by buying from the city

<sup>2</sup> H.E. Salter, *Map of Mediaeval Oxford* (1934), North-East Ward.

<sup>3</sup> This was also the site of the first college chapel; for St. Mildred's see *V.C.H. Oxon.* iv.

<sup>4</sup> V.H.H. Green, *The Commonwealth of Lincoln College 1427-1977* (1979), 6.

<sup>5</sup> For the individual property histories, see H.E. Salter, *Survey of Oxford* (Oxf. Hist. Soc. new ser. 14 (1960), NE(62)-(64) and NE(85)-(87)).

<sup>6</sup> 'Quasi nunc in haereses et errores pestiferrarumque opinionum latratus ebulliunt, et de mysteriorum sacrae Paginae pretiosissimis margaritis, porcinae fauces (proh dolor!) pascere se praesumunt simplicium laicorum', Praefatio Ricardi Fleming, *Statutes of Lincoln College, Oxford*, i (1853), 7; Green, *Commonwealth*, 6.

<sup>7</sup> Green, *Commonwealth*, 8.

<sup>8</sup> *Ibid.* 9.

<sup>9</sup> *Ibid.* 12-13.

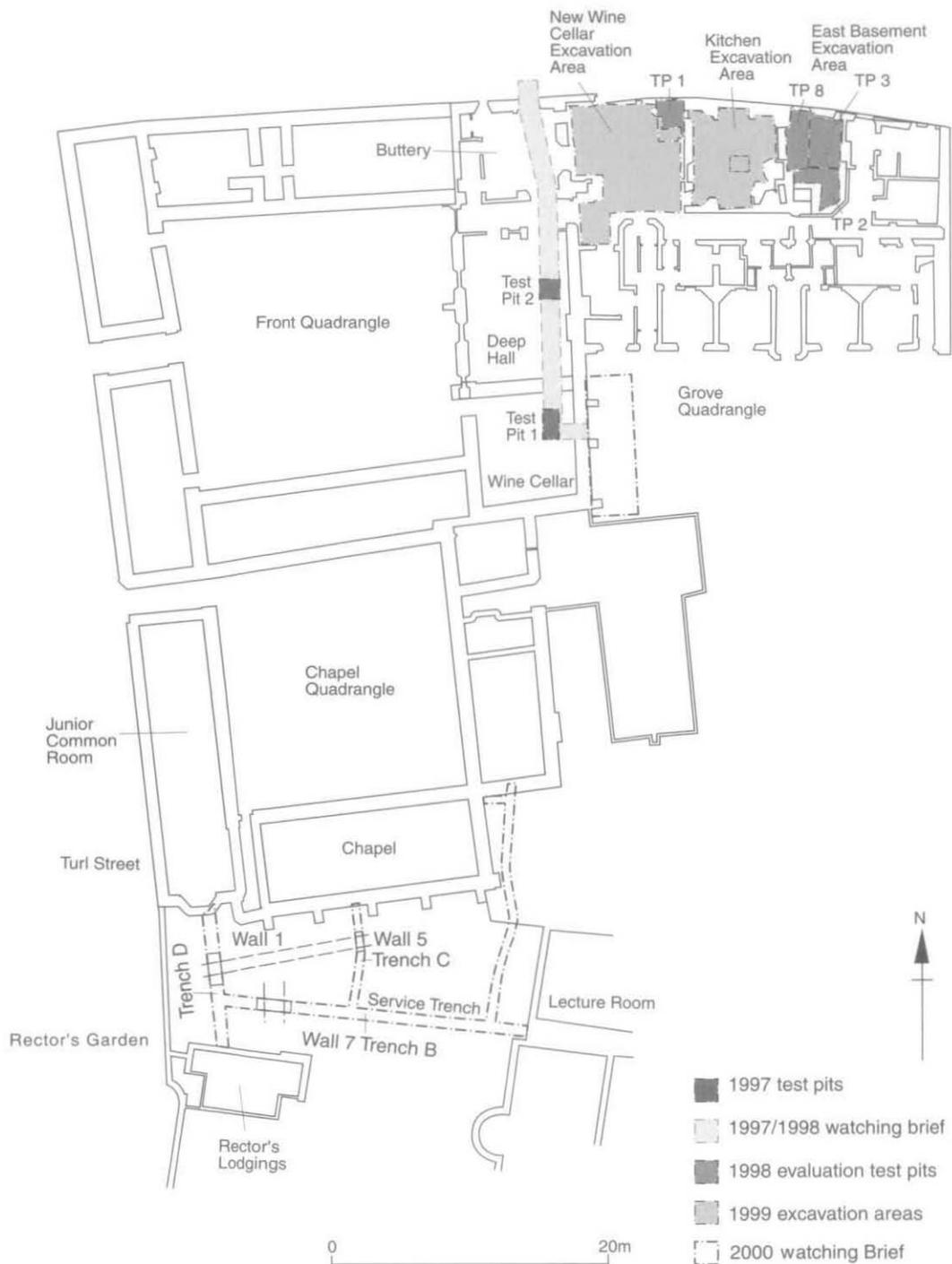


Fig. 2. Areas of excavation.

the small strip of land contiguous to Brasenose Lane. The college relied heavily on gifts and benefactors; in 1437 John Forest, dean of Wells, provided the necessary funds to build a chapel, a library, a dining hall, a kitchen and the college rooms.<sup>10</sup> Oliphant Hall, apparently an open space or garden, came into the college's possession in 1463 when it was bought from University College, to complete the layout of the new foundation.<sup>11</sup> Originally the kitchen block was detached from the rest of the buildings, but later a 17th-century wing linking the Buttery and the Kitchen was added.

The new chapel was constructed between 1629 and 1631, completing the Chapel Quad. The great cellar beneath the hall was built in 1640, and was christened Deep Hall in the 1930s: a punning reference to the early medieval hall that had once stood on the site. The architect T.G. Jackson, who also constructed the Grove Building, restored the hall in 1890-1. A bar was established in the Great Cellar in 1938 and this was expanded in 1954.<sup>12</sup> In 1958 two new public rooms were created above the enlarged Buttery when the Quincentenary Room was constructed in the area between the Kitchen and the Buttery.

In terms of previous archaeological investigations, the immediate area is poorly understood, although to the south extensive excavations were undertaken in All Saints church in the 1970s. Mr. E.M. Hawes of Exeter College monitored excavations for the foundations of a new building for the college at the SW. corner of Turl Street and Market Street in 1938. Pottery of 11th- and 12th-century date was recovered, but no structural remains were observed.<sup>13</sup> The original ground surface in Brasenose Lane had been revealed in 1961 during earlier sewerage work in the lane.<sup>14</sup> A watching brief in Brasenose Lane in 1991 to the east of the college revealed *c.* 2.5 m. of build-up above the natural subsoil and traces of an early cobbled surface were revealed towards the base of the sequence of deposits.<sup>15</sup>

## THE EXCAVATIONS

### THE STRATIGRAPHIC SEQUENCE

#### *PHASE 1: EARLY TO MID 11TH CENTURY (Figs. 3-4)*<sup>16</sup>

Phase 1 Saxon activity on the site was represented only in the 1999 New Wine Cellar excavation. The archaeology comprised two timber structures represented by postholes; in addition, several pits were associated with these buildings. The Phase 1 features generally were cut into the natural gravel 667, silty clay deposit 666 and the subsoil 636=69.

#### *An earlier phase of occupation?*

The earliest probable occupation horizon, 927, was a thin layer of compact, purplish black, charcoal-rich sand resting on the subsoil. Overlying this was 907=66, a mixed clay deposit with charcoal and gravel inclusions, which directly overlay 666 and 927 and extended over much of the northern area of the trench. This layer

<sup>10</sup> *Ibid.* 21.

<sup>11</sup> *Ibid.* 7, 21.

<sup>12</sup> *Ibid.* 582-3.

<sup>13</sup> E.M. Hawes, 'Notes and News: Finds made during building-works in the city of Oxford', *Oxoniensia*, iv (1939), 198.

<sup>14</sup> Oxford SMR Gazetteer No. 3.

<sup>15</sup> Oxford SMR Gazetteer No. 4.

<sup>16</sup> A note on context numbers: 97/1, 97/101 = Deep Hall Bar Test Pits; 1-223 (with no prefix) = East Basement test pits; 300s = Grove Quadrangle watching brief; 500-983 = New Wine Cellar excavations; 1000-1056 = Kitchen excavations. The Rector's Garden watching brief used a new sequence of numbers starting from 1.

was overlain by 867: a patchy gravel and sand surface which also covered the northern part of the trench. Layer 917 was stratigraphically later than 867, but lay at the northernmost extent of the excavation. This layer was a burnt deposit of soot and ash and contained one sherd of St. Neots ware pottery. All of these layers predate the construction of Building 1, i.e. they are stratigraphically earlier than the northern postholes. This points to an earlier period of occupation before Phase 1, which may be associated with the undated gully 901 that was cut by postholes 912 and 914 (Fig. 4). The gully was a linear feature, possibly the NW. corner of a rectangular gully, 0.14 m. deep with a concave base, in the eastern part of the trench.

In the western area of the trench there was further evidence for early burning: burnt deposit 665, a soft, dark ashy clay, sealed the fill of stakehole 673 and was cut by later, Phase 1 postholes. Further west lay another early burnt deposit (808) that was cut by stakehole 810. This thin deposit was a friable clay deposit that was rich in charcoal and produced one sherd of St. Neots ware.

### *Building 1*

Building 1 comprised 13 (or 14) postholes and was aligned N.-S. onto Brasenose Lane, on the eastern side of the site. The eastern wall of the building was represented by postholes 929, 711, 914, 912, 899 and 63. All except 63 were circular to subcircular, varying in diameter and in depth; each contained a single fill of greyish silty clay. Posthole 63 contained two fills; the secondary gravel fill may be part of a later floor at the beginning of Phase 2.

Postholes 669, 814 and 679 comprised the western side of Building 1. These postholes were circular to subcircular, varying in diameter and depth. Posthole 814 contained two fills; the primary fill 816 appears to have been packing around the post that decayed *in situ* as shown by the heavily mineralised secondary fill 815. In addition, posthole 679 seems to have been associated with the rectangular post-pad feature 681; both features were filled by a deposit that was indistinguishable from the overlying layer 662 (see below on Building 2).

The northernmost extent of the building seems to be represented by posthole 63 and beamslot 624 with postholes 915, 626 and 628 (Fig. 4). The postholes were ovoid features; beamslot 624 was an east-west aligned linear feature *c.* 2 m. long, 0.5 m. wide and 0.2 m. deep. In addition, there were three further postholes at the northern end of Building 1: 904, 905 and 906. It is possible that 904 and 905 represent the northern wall of Building 1 and therefore posthole 63 and beamslot 624 and its postholes may have been a fence or screen onto a street frontage. Posthole 906 was not associated with any other features; it probably formed part of an internal structure, the other elements of which have been obscured or destroyed by later intrusions and alterations in this area.

The southern extent of the building may have been on the line of postholes 669 and 929, which are the southernmost surviving postholes. If so, pit 834 must have been dug at the end of Phase 1, since it would have removed the southern end of the building. This corresponds to the finds data from the fills of pit 834, which suggest that the fills of the pit were derived from the occupation deposits of Building 1. All three fills (845, 839 and 837) contained St. Neots ware and the tertiary fill 837 also contained Cotswold-type ware and Medieval Oxford ware, as well as an Edgar Reform Small Cross silver coin (Fig. 23). It is likely that the deposits in this pit derived from a substantial burning episode that destroyed Building 1.

The only possible occupation horizon identified in Building 1 was 866, a dark grey sand deposit with charcoal. However, it is more likely that this deposit was associated with the destruction of Building 1 since it covered the majority of the northern extent of Building 1, filling postholes 905 and 904. In addition, sample 66 from this deposit contained oak, which may have derived from the timbers in 904 and 905.<sup>17</sup>

The four sides as described above form an earthfast, possibly oak, timber structure *c.* 4.5 m. wide and *c.* 5.5 m. long, which was rectangular in shape.

### *Building 2*

Building 2 lay to the west of Building 1 and comprised six postholes and one stakehole. The western side of the building was represented by postholes 683, 685 and 972 that were circular to subcircular. Postholes 683 and 685, which cut through burnt deposit 665, were both filled by a deposit that was indistinguishable from the Phase 2 sandy layer 662. This concentrated deposition of material, i.e. in and around postholes 683, 685, 679, 681, suggests that the posts in these holes were destroyed or deliberately moved before layer 662 was deposited in Phase 2.

<sup>17</sup> R. Pelling, 'The Environmental Samples', in J. Hiller, 'The Kitchen Project, Lincoln College, Oxford: Post-excavation assessment and publication proposal' (unpubl. OAU report).

The northern extent of the building probably comprised postholes 972, 960 and possibly 974 that were circular to subcircular features. Stakehole 810 was also in the northern part of the building, but was not associated with these postholes; presumably it formed part of an internal structure, the other parts of which have been obscured by later intrusions.

The southern end of Building 2 is problematic; posthole 937, seen in the east-facing section, was possibly part of the southernmost wall. However, due to the large number of later pits in this area no further elements of the wall were identified.

As was the case for Building 1, the extent of the later intrusion removed much of the evidence for internal features and occupation deposits in Building 2. Deposits 819, 818 and 817 seem to be fills of an early shallow hollow in the SE. area of the building. Deposits 818 and 817 both contained St. Neots ware; 817 also produced a single piece of tap slag. Further south, and possibly outside the building, was pit 821, c. 0.90 m. in diameter and c. 1.35 m. deep; its exact shape and size is unknown due to the limit of the excavation. It contained at least five fills, the latest of which (722) contained St. Neots ware.

The three sides as described above probably formed an earthfast timber structure c. 7.5 m. long by c. 2.25 m. minimum wide. Since a large part of the building underlay the Hall wall or was cut away by later pits, no further description can be made of entrances or construction style.

### PHASE 2: MID TO LATE 11TH CENTURY (Figs. 4-6)

Phase 2 is marked with a series of large intercutting pits. In addition, Phase 2 saw a later phase of Saxon building activity that culminated in a fire at the end of the 11th century. This phase was seen predominantly in the New Wine Cellar excavation and East Basement test pit 1, but traces were also identified in East Basement test pit 8.

#### *Pits, clearance and the end of Phase 1*

As the life of the Phase 1 structures came to an end a series of large pits were dug. At this time a large pit (930) was dug at the NW. end of Building 1. This pit, 1.2 m. in diameter, removed elements of both sets of postholes to the north and the postholes to the west. St. Neots ware and one sherd of Late Saxon Oxford ware in the secondary (983) and latest (980) fills suggest that the deposits partially derived from the earlier occupation deposits of Building 1. More of the western wall of Building 1 was removed by pit 975, which also took out postholes 972 and 960 from the northern end of Building 2. Again two of the four fills, 977 (secondary) and 978 (tertiary), contained St. Neots ware. It is noteworthy that the latest fill, 981, a loose sandy gravel, appears to have been deliberate backfill prior to the construction of 970. Further to the south was an oval pit (782), 1.2 m. in diameter and 0.88 m. deep, containing five fills, 783, 784, 785, 786 and 773, all of which showed evidence of burnt material and yielded St. Neots ware. This pit was cut through soil and sand layers 661 and 662 respectively that must have been deposited after the destruction of Building 1. These layers in turn overlay silty clay deposit 664 which environmental evidence suggests was an *in situ* deposit of burnt grain.

At the southern end of Building 1, pit 834 was cut by pit 833 (not illustrated) whose true extent is unknown. Pit 864=710 also cut pit 834; fill 850 contained St. Neots ware and fill 676 produced a wide range of pottery including St. Neots ware, South-West Oxfordshire ware, Cotswold-type ware and Medieval Oxford ware. A further pit, 897, was cut at the beginning of Phase 2 and cut through the upper fill of pit 834.

#### *Building 3 (Figs. 4-5)*

This initial phase of pitting was followed by the construction of Building 3 over the site of Buildings 1 and 2. Whereas Building 2 was on an approximate NW.-SE. alignment, Building 3 conforms more closely to the approximate N.-S. alignment of Building 1. Building 3 comprised 18 postholes and two groups of stakeholes. These features were cut into the clay silt abandonment layer 854=883, which contained St. Neots ware and overlay 866.

The postholes at the northern end of Building 3 fall into four groups, all of which were linear groups on an E.-W. alignment:

- 1) Group 893 comprised postholes 888 and 891; both were subrectangular cuts 0.10 m. deep. This group appears to function in a similar manner to the northernmost postholes of Building 1, i.e. a fence or screen facing onto a street frontage.
- 2) Group 879 comprised postholes 902, 909, 884, 886, 871 and 873; feature 890 may also belong to this group. The postholes were predominantly subrectangular with varying dimensions 0.15 m. to 0.31 m. deep. Two postholes, 884 and 886 may have been double postholes or have had replacement posts added. Feature 890 was a row of six subrectangular cuts aligned E.-W. with steep sloping sides and concave base; they each measured approximately 0.12 m. x 0.06 m. x 0.04 m. These cuts are probably the remains of a beamslot associated with group 879 or group 893.

PHASE 1

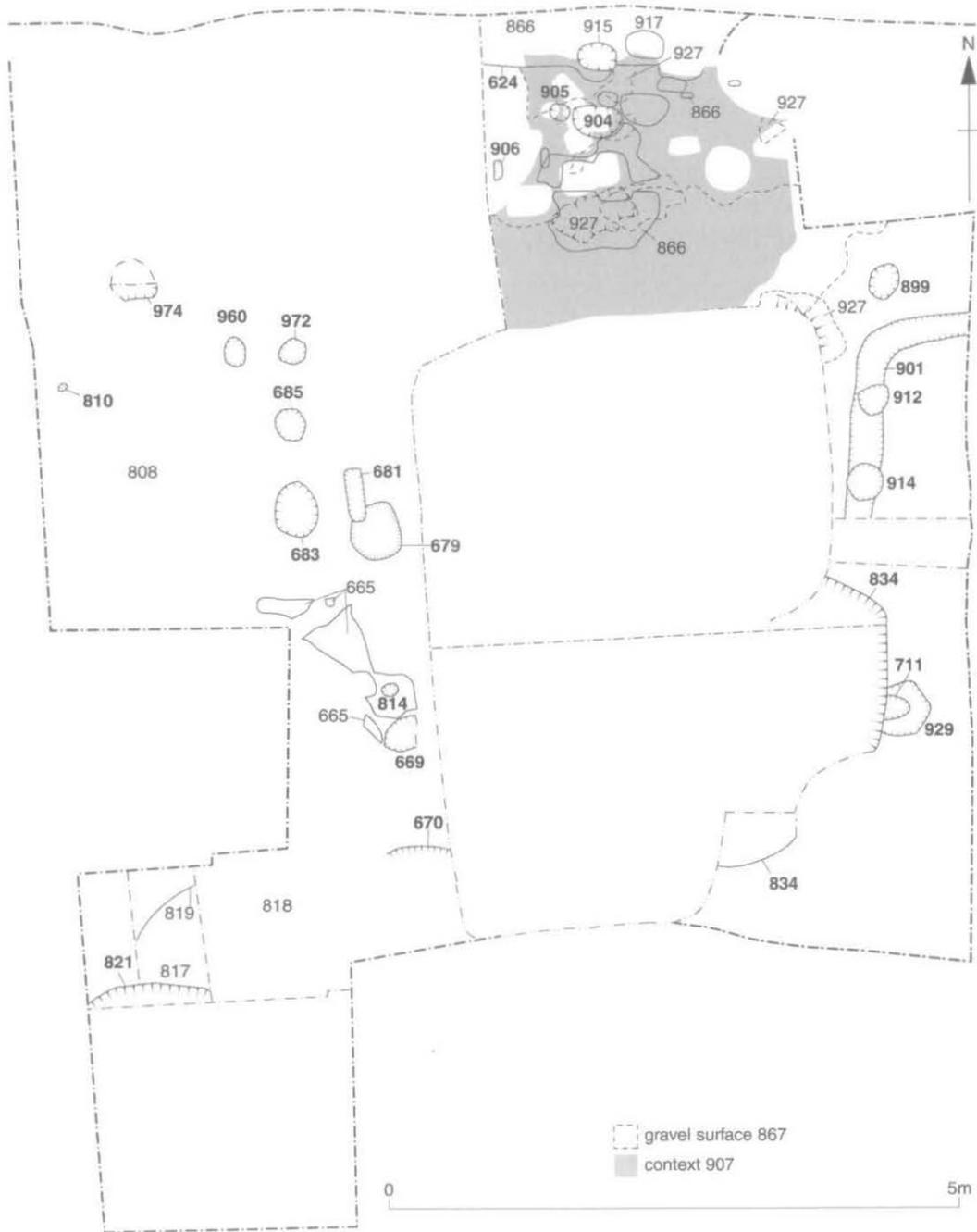


Fig. 3. New Wine Cellar: Phase 1 features.

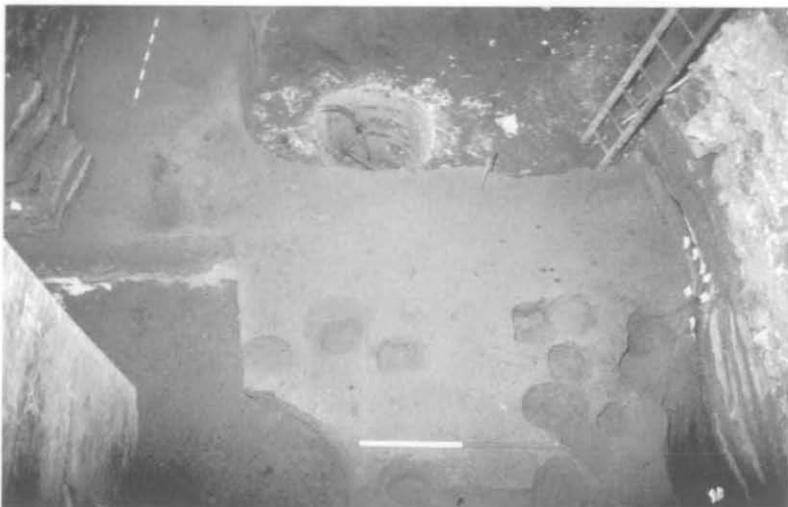


Fig. 4. New Wine Cellar (looking south): Phase 1 beamslot 624 and postholes 899, 912 and 914, and unphased gully 901 on the eastern side of Building 1; and Phase 2 postholes in the north of Building 3.



Fig. 5. New Wine Cellar (looking south): Phase 2 stakehole group 876 on the eastern side of Building 3.

3) Group 863 comprised postholes 855, 875, 878, 857 and 859 connected by beamslot 861. The majority of the postholes were circular or subcircular; postholes 857 and 859 revealed evidence at their bases for the post being hammered into position. In addition, the fill of 857 (858) contained an oyster shell. Beamslot 861 was a linear cut, aligned east-west, 0.10 m. deep with steep sloping sides and a concave base.

4) Finally, group 970 comprised postholes 967, 963 and 965 connected by beamslot 969. Postholes 967 and 963 were cut into the top fill of pit 975 and, therefore, must post-date the pit. The postholes were circular or ovoid. Beamslot 969 was a linear cut, aligned E.-W., with steeply sloping sides; it measured 0.4 m. wide tapering to 0.15 m. near the base. The two groups 863 and 970 probably belong together.

Building 3 also retained several traces of its internal structure. Towards the south of the trench was a series of three postholes: 799, 797 and 801. Postholes 799 and 797 were circular; posthole 801 was heavily truncated by pit 703. This row of postholes was aligned N.-S. and must represent an internal partition in Building 3. The lack of evidence for postholes further north than 799 suggests that the partition did not divide the entire length of Building 3. During the excavation patches of clay, probably the remains of daub, were identified between each of these postholes.

Stakehole group 876 (Fig. 5), probably part of the original construction phase, comprised 36 stakeholes, the majority of which were distributed down the eastern side of the trench. This concentration of stakeholes suggests that there was a relatively substantial internal partition separating the eastern side of the building from the western and may be associated with cellar pit 836=594. In turn, this suggests that the eastern extent of the building lies under the 15th-century Kitchen wall. It would appear that group 876 was partially removed for the insertion of hearth 788.

Stakehole group 853 was a later structure and comprised 14 stakeholes mostly on an E.-W. orientation with several aligned N.-S. It is likely that it functioned as an internal partition probably associated with cellar pit 836=594.

After the stakehole group 853 structure was built, hearth 788=17=57 was constructed in the eastern edge of the trench to the south of 853. An iron whittle-tang knife (SF 125) was found in the hearth deposit. The hearth was constructed over a compacted levelling deposit of redeposited gravel and natural clay silt, 789=848=18=58 that contained St. Neots ware and Medieval Oxford ware. This levelling deposit itself overlay 791=59=19; a compact silt deposit with patches of grey ash which contained a large amount of St. Neots ware and two sherds of Stamford ware as well as 18 fragments of daub. It is possible that this was an area of domestic burning (before hearth 788), which partially burnt down stakehole group 876, hence the daub fragments in 791.

Throughout the period of occupation of Building 3 a series of floors and occupation layers built up. These layers were particularly clear in East Basement test pit 1, which displayed a clear sequence of gravel floors overlain by occupation deposits. The gravel floors were approximately 0.10 m. thick and the occupation layers, firm silt deposits with gravel, which often showed evidence of burning, were approximately 0.05 m. to 0.09 m. thick. The sequence shows that the floors were not removed, but rather new floor layers were superimposed, resulting in a build-up of c. 0.6 m. Additionally, it is possible that layer 54, which produced a copper alloy finger ring (SF 121) and 30 sherds of St. Neots ware, represents a repair to gravel floor 52 before a further layer of gravel 53=761 was laid.

Building 3, therefore, was a rectangular, earthfast timber structure a minimum of 10 m. x 7 m.; the true extent of the building is unknown since, with the exception of the northern side of the building, the outer walls were lying under the walls of the Great Hall, the Grove Building and the Kitchen. The daub recovered from the burnt deposit 637 suggests strongly that the building was framed with a wattle and daub panel (see below).

As the life of Building 3 progressed several pits were inserted into the building. To the north of the building was a large pit (687), 2 m. in diameter and 1.08 m. deep. The pit contained five fills, but produced no datable finds. To the west of the building a further large pit (703) was inserted, measuring 2.78 m. N.-S. x 2.2 m. E.-W. This pit cut through deposit 660, a firm charcoal-rich deposit that must have derived from domestic burning. With the insertion of this pit, the internal partition represented by postholes 799, 797 and 801 must have been removed. The upper fill (704) produced large amounts of Cotswold-type ware and Medieval Oxford ware as well as oyster shell and a piece of vitrified clay lining possibly from a hearth. Subsequently, pit 813, c. 0.78 m. diameter and 0.8 m. deep (minimum), cut through pit 703 and Phase 1 pit 821; its single fill, 715, contained St. Neots ware, Cotswold-type ware and Medieval Oxford ware.

This series of intercutting pits was then cut by later pit 770, and subsequently re-cut by pit 721. Pit 770, 2.26 m. diameter and 0.86 m. deep (minimum), contained at least three fills, of which 774 and 777 were charcoal and ash rich. All three fills contained Medieval Oxford ware and some Cotswold-type ware; two sherds of St. Neots ware were retrieved from 774; the primary fill (775) also contained a pre-Conquest barrel padlock. Pit 721, 2.04 m. diameter and 0.84 m. deep, was probably cut towards the end of Phase 2 and survived as a hollow into Phase 3. Two of the three fills, 767 and 725, contained Medieval Oxford ware and 725 contained a cross-pane hammer.

In the centre of the building was pit 836=594 that measured *c.* 0.7 m. x *c.* 2.2 m. and was *c.* 0.7 m. deep. The size and central position of this pit suggest that it acted as a cellar pit. The pit appears to have had a lining (847) which was a thin friable clay silt layer lying up against the steep sides of the cut. Fill 629 produced several finds including four sherds of Cotswold-type ware, two sherds of Medieval Oxford ware and an undated lead token. Fill 835, the major fill of the pit, contained a single sherd of Medieval Oxford ware.

Pits were also dug on the eastern side of the building. Pit 865 in the SE. corner of the trench cut through the earlier pit 864 and contained a single fill (851) that produced two sherds of St. Neots ware and single sherds of Cotswold-type ware and Stamford ware. To the north was pit 638, which was heavily truncated by the Kitchen wall 507. The pit contained a single fill (639) with St. Neots ware, Cotswold-type ware and a single sherd of South-West Oxfordshire ware.

#### *The Fire*

The end of Building 3 was clearly marked by a fire. The major fire deposit 587=20 overlay the loose, white ash fire deposit (882=869) on the eastern side of the trench. 587=20 was a compacted layer of *in situ* burning with daub and fired clay, 0.03 m. thick. Finds recovered from the deposit include large amounts of Late Saxon Oxford ware, Cotswold-type ware and Medieval Oxford ware, oyster shell, a piece of hearth lining with slag and charcoal adhering and some very small fragments of glass (sample 61). This layer was sealed by demolition deposit 852; a consistent deposit of ash from the fire with frequent charcoal and fired daub extended over the northern part of the building. Overlying this layer was deposit 637 which represented the collapse of the daub wall during the fire. Layers 637 and 852 both produced large amounts of daub, 11,483 g. in total, which suggests that the northern wall of Building 3 and the inner partition represented by stakeholes 876 were covered with daub. The daub had a roughly smoothed surface, including possible palm impressions, and measured between 0.03 m. to 0.04 m. in thickness; most significantly it displayed evidence of burning. Also visible were impressions from the withies, measuring between 0.01 m. to 0.02 m. in diameter, which would have formed the wattle frame onto which the clay would have been placed. The final layer in Phase 2 must have been deposited shortly after, but not during, the fire; 758=787=37=49 was a thin, dark brown, silty clay deposit that contained specks of charcoal and some oyster shell.

#### *Garden soils*

In the neighbouring plot of land to Building 3, Phase 2 was identified in East Basement test pit 8. Layer 186=221 was the lowest deposit reached in the trench and overlay the Oxford 'red' subsoil 198=201 and the natural gravel 202. This layer was a soil horizon of light grey silt loam and contained pottery ranging from St. Neots ware to East Wiltshire ware. This layer was overlain by several similar layers of garden soils. In addition pit 171 was cut towards the end of Phase 2 in this area; a circular pit 1.3 m. in diameter and 1.35 m. deep. The pit appears to have filled slowly as the latest fill (165) contained Tudor Green ware. The fire marking the end of Phase 2 in the New Wine Cellar was not identified in this plot of land.

### *PHASE 3: 12TH TO 15TH CENTURIES (Figs. 7-9)*

After the fire at the end of Phase 2 the plot of land was not redeveloped. Instead, the land became waste ground that was cut by a large number of pits for gravel extraction or the dumping of rubbish. In this way the land was used in a similar manner to the adjacent plot of land in Phase 2 (see above).

#### *The soil layers and dumped deposits*

The soil and dump layers covered much of the New Wine Cellar area with concentrations on the eastern side of the trench, the northern side, SW. corner, NW. corner, and to the west and SE. of the Phase 4 well. These layers were deposited throughout Phase 3. In general, they were loose, mid to dark brown sandy silt deposits; they contained a lot of gravel, charcoal, limestone fragments, bone and shell as well as a large amount of pottery ranging in date from the early 11th to the 14th century. Deposit 586 was the most extensive soil layer extending *c.* 4 m. across the trench from the eastern side. This deposit was a loose, mid to dark brown loam which contained a lot of bone and large amounts of Cotswold-type ware and Medieval Oxford ware (and one sherd of Brill/Boarstall ware), as well as lenses of gravel and fragments of mortar. In addition, three deposits in the northern part of the trench are noteworthy. Deposits 756=780=38=48 and 753=778 were compact black ash layers varying in thickness from 0.02 m. to 0.23 m.; they also contained charcoal, gravel, some bone and pottery ranging from St. Neots ware to Medieval Oxford ware. The third deposit, 945, was a dump of compacted, redeposited yellow gravel. In addition, two other garden soil layers (556 and 562) contained cross-fitting pottery sherds.

Some of the earliest Phase 3 layers in the New Wine Cellar showed direct evidence of being deposited shortly after the end of Building 3. Both 630 and 589 directly overlay Building 3 deposits with no evidence of silting prior to their deposition. Deposit 630 seemed to be a tipped layer 0.50 m. thick that overlay a curved



band of redeposited mortar and gravel. This deposit was itself overlain by layer 589, which was a soil layer composed of loose, sandy loam with fine gravel and domestic refuse. This deposit extended over the eastern side of the trench and also sealed burnt deposit 587. Overlying deposit 589 was a compact layer of mortar, 600, that was 0.06 m. thick and showed evidence of burning on its western edge.

TABLE 1. PHASE 3 DEPOSITS IN SW. CORNER OF NEW WINE CELLAR, LISTED FROM LATEST (695) TO EARLIEST (714)

<i>Context</i>	<i>Description</i>	<i>Comment</i>
695	40% soft, black charcoal and ash, c. 0.2 m. thick	Industrial deposit?
696	Thin soil layer	Dumped deposit
697	Powdery mortar, 0.18 m. thick	Sloped south at approx. 15°; remains of mortar mixed in hollow
699	Sandy loam layer, 0.24 m. thick, thin lens of ash at interface with 698	Dumped deposit
698	Clayish soil with patches of black ash and mortar, 0.12 m. to 0.15 m. thick	Dumped deposit
713	75% peagrit, 0.04 m. to 0.12 m. thick	Tipped deposit
714	Friable clay loam, 0.12 m. to 0.28 m. thick	Tipped deposit; overlay latest fill of pit 721; cut to west and east by construction cuts 574 and 793 respectively

TABLE 2. PHASE 3 SOIL LAYERS AND DUMPED DEPOSITS IN EAST BASEMENT TEST PITS

<i>Context</i>	<i>Location</i>	<i>Description</i>
92=159	Test Pit 2/8	Sandy silt, 0.4 m thick, charcoal, gravel, limestone and mortar inclusions
142	Test Pit 8	As 92=159
174 to 182 (inclusive)	Test Pit 8, against northern wall between Brasenose Lane and Lincoln College	Similar in colour and composition to above, varying in thickness from 0.04 m. to 0.25 m.
93	Test Pit 2	Friable sandy loam, 0.5 m. thick, 25% gravel inclusions, some limestone fragments
9	Test Pit 1	Friable sandy loam, 0.5 m. thick, 25% gravel inclusions, some limestone fragments

In the SW. corner of the trench, between the eastern Buttery wall 564 and concrete footings 702 was a large build-up of several deposits (Table 1). In addition, the East Basement test pits showed similar soil layers to those in the New Wine Cellar (Table 2). Soil layers were also preserved in both the New Wine Cellar and East Basement test pit 8 under later relieving arches. In test pit 8, under the relieving arch represented by Phase 4 walls 199 and 82, layers 188, 189, 192, 193 and 194 were compact or friable, mid greyish brown (with the exception of 194 which was mid reddish brown) clayey silt, 0.15 m. to 0.30 m. thick, with limestone fragments, gravel, some charcoal and shell inclusions (Fig. 8). All the layers contained Brill/Boarstall ware except 194 that produced Cotswold-type ware only; in addition, 189 and 192 contained cross-fitting sherds and 188, 189, 191 (Phase 5 robber trench fill) and 192 produced non-joining sherds. Deposits 932 to 936, under relieving arch 812 of the Hall and Buttery east wall (Fig. 15), were friable sandy silt deposits with charcoal and mortar inclusions; deposit 934 contained one sherd of Surrey whiteware.

PHASE 3

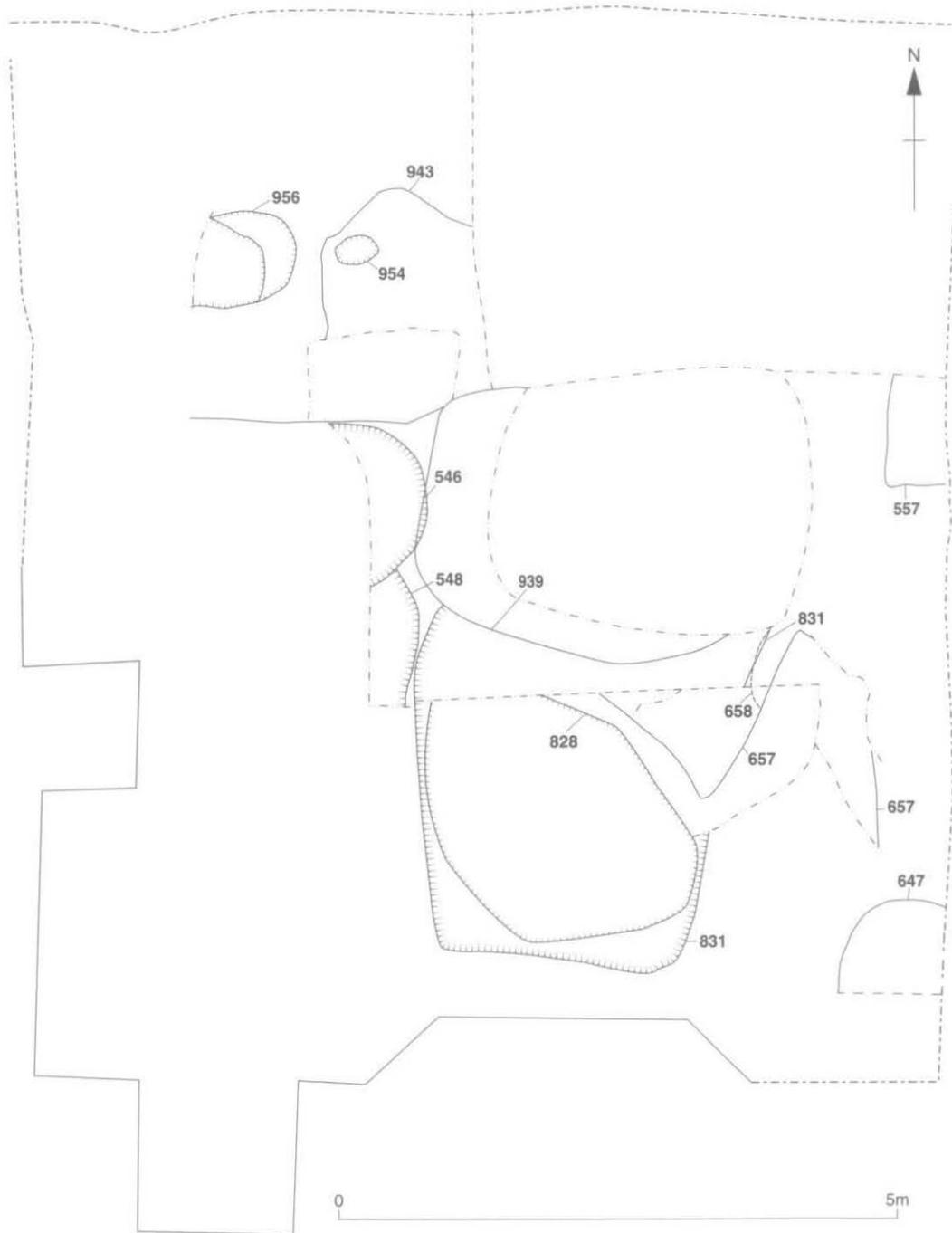


Fig. 7. New Wine Cellar: Phase 3 pits.

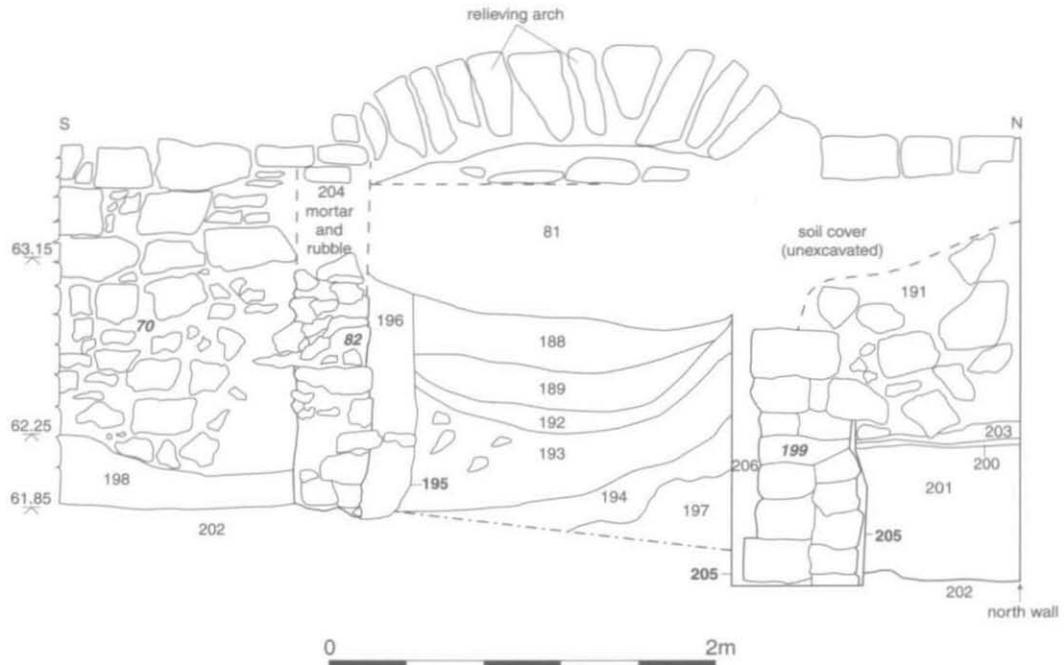


Fig. 8. East-facing section in Test Pit 8 showing Phase 3 soil layers underneath later relieving arch for the eastern Kitchen wall.

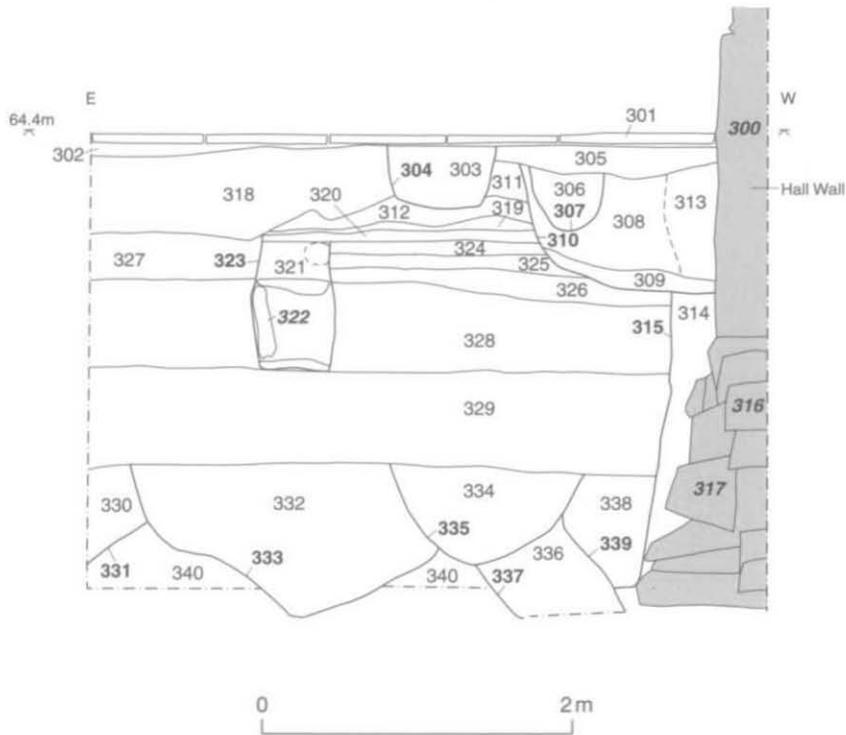


Fig. 9. Grove Quadrangle: south-facing section.

### *The Pits*

In the New Wine Cellar excavation twelve pits were cut during Phase 3 as well as an isolated posthole, 954. Further pits were identified in East Basement test pit 8 and in the Grove Quadrangle watching brief. In the SE. corner of East Basement test pit 8 was circular pit 222, 0.45 m. deep, that had been heavily truncated by soakaway trench 136 (Phase 6). The Phase 3 Grove Quadrangle pits were recorded in the south-facing section of the trench and were the earliest signs of activity in this excavation area (Fig. 9). All five intercutting pits contained at least one fill and cut through the natural gravel 340.

The twelve Phase 3 pits in the New Wine Cellar can be divided into groups of three early, three mid and six late Phase 3 pits. The early pits were located in the southern and central parts of the site. Pit 939, in the centre of the site, cut through the latest fills of Phase 2 pit 594=836 and was truncated by construction cut 537 for well 514. This large ovoid pit was at least 3.2 m. in diameter and c. 0.18 m. deep. The pit contained at least one fill, 655, which was a compact silty loam with pottery ranging from St. Neots ware to Brill/Boarstall ware. To the south of this was the largest pit encountered during the excavation: pit 831 was sub-rectangular in shape and measured at least 3 m. x 1.3 m. x 0.6 m. deep. This pit cut the fill of Phase 2 pit 833 and was truncated by later Phase 3 pit 828. The primary fill, 830, was a compact, greenish brown, silty gravel layer which produced Brill/Boarstall ware and one sherd of Cotswold-type ware. The secondary fill (829) contained a wider range of pottery including Cotswold-type ware, East Wiltshire ware, Stamford ware and Medieval Oxford ware as well as Brill/Boarstall ware. This deposit was more substantial and consisted of a firm silty sand mottled with yellowish brown redeposited natural and some gravel. In the SE. corner of the site was circular pit 647 that cut soil layer 589 and was 0.80 m. x 1.10 m. x 0.80 m. deep with a concave base. The pit contained two fills: 646 and 643. Primary fill 646 was a compact, mid reddish yellow silty gravel. The secondary fill (643), a loose silty loam c. 0.7 m. deep, contained pottery ranging from Late Saxon Oxford ware to Medieval Oxford ware. In addition, two thin burnt deposits (641 and 642) were associated with this pit: 642, which overlay 643, was a loose, black ash layer, while 641 was a red burnt layer directly overlying 642.

The mid Phase 3 pits were clustered in the central part of the site. Pit 658 was heavily truncated by construction cut 537 for well 514 and pit 657, c. 0.30 m. wide and c. 0.25 m. deep. The single extant fill of the pit was a friable silty loam. Pit 657, which cut pit 658, was an unusual elliptical shape approximately 3.0 m. x 1.5 m. x 0.4 m. that was cut by Phase 4 soakaway feature 596. The single fill (633) of 657 was a loose silty loam, which contained St. Neots ware to Brill/Boarstall ware. The third pit 828 was a large subcircular cut, 2.0 m. in diameter, whose steeply sloping sides suggest that it may have been a well. The pit was dug to a depth of 0.6 m. (not bottomed) and contained two fills. The earlier fill, 827, possibly a lining, formed a clay-silt band around the cut and produced one sherd of Cotswold-type ware, ceramic building material and bone. The latest fill (826) was a loose, dark brownish red clayey silt deposit that contained 11th-century pottery (which produced a cross-fit with Phase 2 pit fill 775), ceramic building material and bone. This pit cut the secondary fill of earlier Phase 3 pit 831 and was stratigraphically earlier than posthole 954 and pit 956.

The late pits were more evenly distributed across the site with two to the west (546 and 548), two to the north (943 and 956), one to the east (557) and one in the SE. corner (645). Pit 548 was a subcircular pit measuring 1.25 m. x 0.5 m. x 0.15 m. with sloping sides and a flat base; it was cut into soil layer 541 and truncated by pit 546 and by the cellar inserted in 1958. The single fill (549) which contained one sherd of Brill/Boarstall ware, was a dark brown silty sand. Pit 546 was also a subcircular cut with sloping sides and a flat base, smaller than pit 548 (0.65 m. x 0.45 m. x 0.2 m.); it was also truncated by the 1958 cellar. Similarly, the single fill (547) was a very dark brown silty sand; it yielded Cotswold-type ware and Medieval Oxford ware.

In the northern area, square pit 943 was 0.23 m. deep and 1.25 m. E.-W.; it was truncated by a floor slab of the 1958 cellar. The single fill (944) of this pit, which contained 11th-century pottery, consisted of loose clay silt. Adjacent to, but truncated by this pit was oval posthole 954 c. 0.40 m. wide and 0.38 m. deep. The posthole cut through thick gravel deposit 949 and had a single fill containing some small limestone fragments, possibly as post-packing. To the east of these features was pit 956, which was a subcircular pit 0.9 m. wide and 0.5 m. deep, with a base on two levels, suggesting a re-cutting of the pit. The pit cut through redeposited gravel layer 958. The single fill (948) of this pit was a loose sandy silt with 15% gravel inclusions as well as South-West Oxfordshire ware and Cotswold-type ware. Pit 557 was a square or rectangular pit 0.4 m. x 0.2 m., which was truncated by the Kitchen wall. Its only remaining fill, 558, was a friable silty clay with charcoal and gravel inclusions as well as 11th-century pottery. Further to the south in the SE. corner of the site was pit 645 that contained a single fill (644) 0.69 m. thick that yielded 11th-century pottery.

### *PHASE 4: 15TH CENTURY (Figs. 10-16) with contributions by JULIAN MUNBY*

The foundation of Lincoln College in 1427 necessitated the acquisition of several medieval houses, including academic halls and St. Mildred's church. The college seems to have occupied the existing halls until new buildings could be constructed. The Library and Chapel were in the north range of the quad, the Buttery and

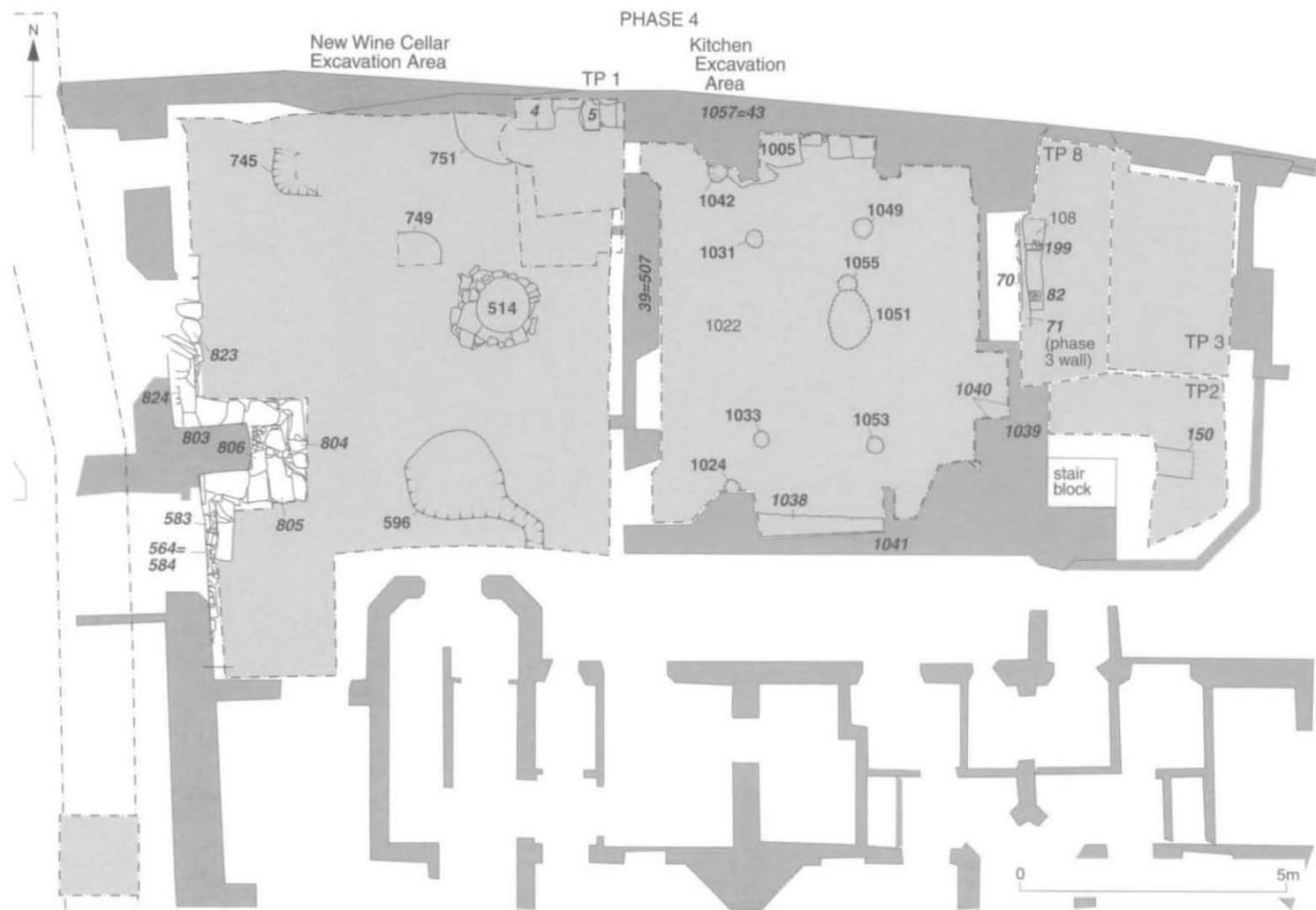


Fig. 10. New Wine Cellar, Kitchen and East Basement: Phase 4 features.

Hall in the east range, and the Kitchen was a detached building at the back on Brasenose Lane. The archaeology of Phase 4 saw the construction of the college Kitchen and other auxiliary structures such as the well, which has been partially preserved within the New Wine Cellar.

#### *The Kitchen Building (Fig. 11)*

The Kitchen is built of ashlar masonry, approximately square, and is separated from the college by a screen wall, the lower part of which appears to be medieval and to have been built at the same time. It has a stone gable in the east wall for the fireplace and a timber gable in the west wall. The roof is covered by stone slates and has a central louvre.<sup>18</sup> Although much of the internal walling was covered with paint and could not be readily dated or phased, where exposed the majority of the walling was of coursed ashlar masonry. The external walling was of coursed ashlar masonry.

The Kitchen foundation walls were built upon an undated, but probable Phase 3 soil (1056). The west wall of the Kitchen building was built upon foundation 41, which was tightly trench-built with three courses of rough-hewn limestone pieces. On top of these primary foundations was major foundation 39=507, a trench-built structure with roughly hewn limestone blocks laid in stretchers in yellow-brown sandy mortar. This wall was keyed into the northern wall foundations, 1057=43. Much of the external west walling was seen to be of medieval ashlar masonry with the timber-framed gable rendered in modern pebbledash. Original features observed in the wall include the doors to north and south with four-centred arches, a moulded stone drip course at wall plate level and an area of sloping rubble walling above this reaching to the set-back timber framing of the gable end. A blocked window may be a secondary feature. The double-planked oak door in the southern opening may be medieval.

Northern wall foundation 1057=43 was constructed from rough-hewn limestone blocks bonded in coarse lime mortar. The wall on Brasenose Lane is of well-constructed ashlar, with two square-headed windows that seem to be part of the primary construction. They are surrounded by a hollow chamfer moulding, and may once have had traceried lights; they match the two square-headed windows in the south elevation and all have internal splays.

The eastern Kitchen wall footing, 1039, comprised large limestone blocks and two upper courses of smaller roughly-hewn limestone pieces that were snecked in a hard yellow mortar with gravel inclusions. The external face of these footings (70) were identified in East Basement test pit 2, and offset by *c.* 0.3 m. from foundation 71: a trench-built wall which was on a N.-S. alignment and formed the western edge of the test pit. Foundation 71 was over 1.95 m. deep and constructed of roughly hewn limestone pieces ranging in size from 0.20 m. x 0.20 m. x 0.30 m. to 0.35 m. x 0.60 m. x 0.50 m.; its width is unknown, but must be greater than 0.3 m. The foundation wall was at least 2 m. in length and was probably truncated to the south by the insertion of the Kitchen stair well. While it is possible that this structure is the foundation of Winchester Hall, it is more likely to be the foundation to the Kitchen wall. The majority of the walling fabric below the level of the internal wall plate was of medieval ashlar stonework. The gable-end was of rubble instead of timber framing, probably on account of the presence of the flue and stack of one of the original fireplaces. To the south of the elevation a roof line of a former building extending to the east was clearly visible. At the north of the elevation a chamfered recess in the original medieval ashlar stonework seems to relate to a former door onto Brasenose Lane in the northern wall immediately to the east of the Kitchen.

The southern footing, 1038, comprised small to medium limestone pieces that were snecked in a similar mortar to that of wall footings 1039. These footings were noticeably offset from the back wall of the hearth above, as was wall 1039 at the southern side of the building. It is possible either that the footings were built to mirror the line of Brasenose Lane or that the Kitchen overlay an earlier structure.

*Internal features (Fig. 11):* The construction technique of the Kitchen was shown clearly by seven postholes – 1024, 1031, 1033, 1042, 1049, 1053 and 1055 – which represent post sockets for upright scaffold timbers erected to construct the roof and upper walls of the Kitchen (Fig. 13). A construction layer, 1022, which extended over the entire Kitchen area, accumulated whilst the scaffold posts were *in situ* since it was not cut by the postholes nor did it overlie their fills. This layer consisted of small limestone pieces and mortar in a reddish brown soil matrix which also contained medieval pottery, a single sherd of 15th-century window glass and oyster shell. The postholes were 0.25 m. to 0.3 m. deep with a diameter of *c.* 0.35 m. to 0.4 m. The fills of two of the postholes contained Overfired Brill/Boarstall ware: 1032 (fill of 1033) and 1025 (fill of 1024 which also contained German Stoneware and oyster shell). The four postholes on the western side of the building are separated into two groups: postholes 1024 and 1042 are positioned further west and closer to

<sup>18</sup> For a previous account, see J. Steane and M. Taylor, 'Lincoln College Kitchen', *S. Midlands Archaeol.* 13 (1983), 76-7.

see Figure 12

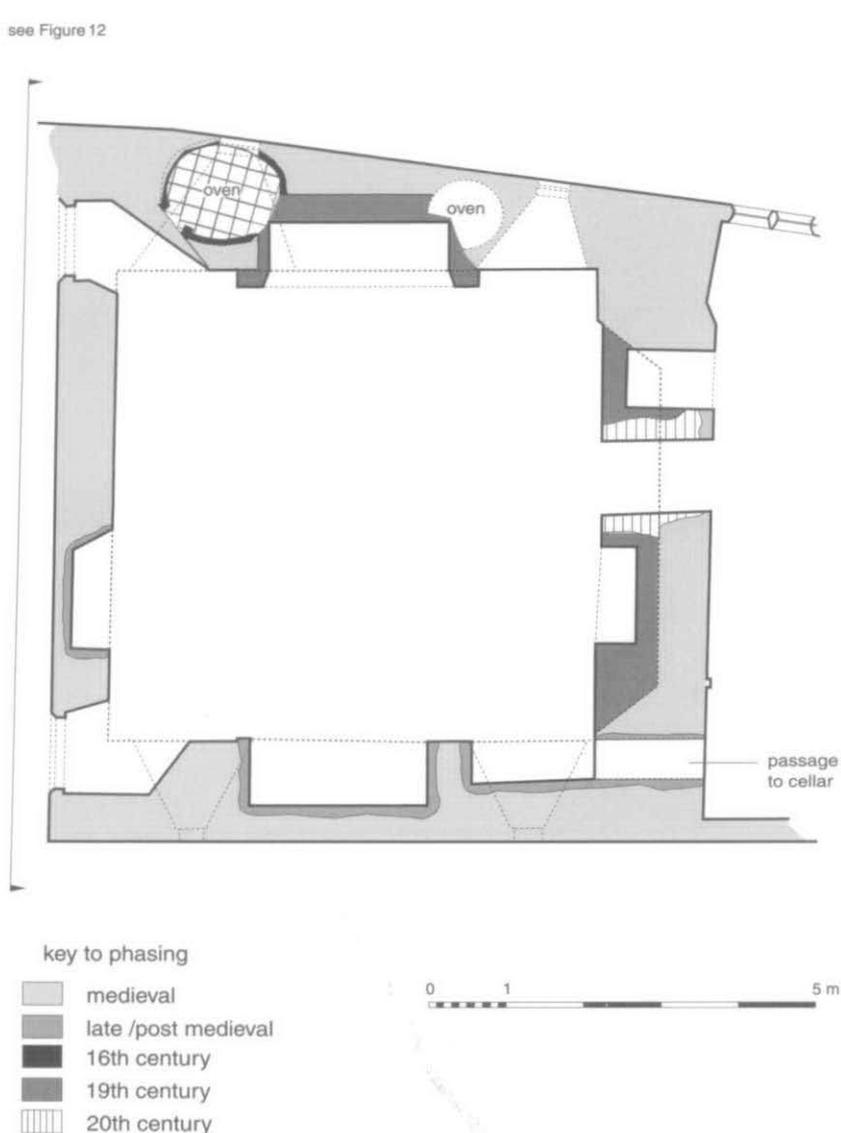


Fig. 11. Phased Kitchen building plan.

the southern and northern extremities of the Kitchen (respectively) than postholes 1033 and 1034 which are more centrally positioned. On the eastern side of the Kitchen were three postholes 1053, 1055 and 1049. The southern edge of posthole 1055 was cut by an oval pit 1051, whose dimensions were 1.35 m. x 0.9 m. x 0.4 m. maximum (Fig. 13). The dark grey, fine sandy loam fill (1050) of the pit was notable for the dense concentration of domestic waste including fish and small animal bones, assorted marine shells and charcoal. Other finds included German Stoneware, Brill/Boarstall ware, Medieval Oxford ware and a single sherd of grozed window glass. The pit probably represented the refuse left by the construction workers.

Internally, in the west wall there were two angled entry passages from the doors, and a blocked window with a moulded segmental head (perhaps late medieval) and a chamfered mullion (Fig. 12). Beneath the window was a splayed opening, possibly for a sink or access to the well, which may also be late or post-medieval.

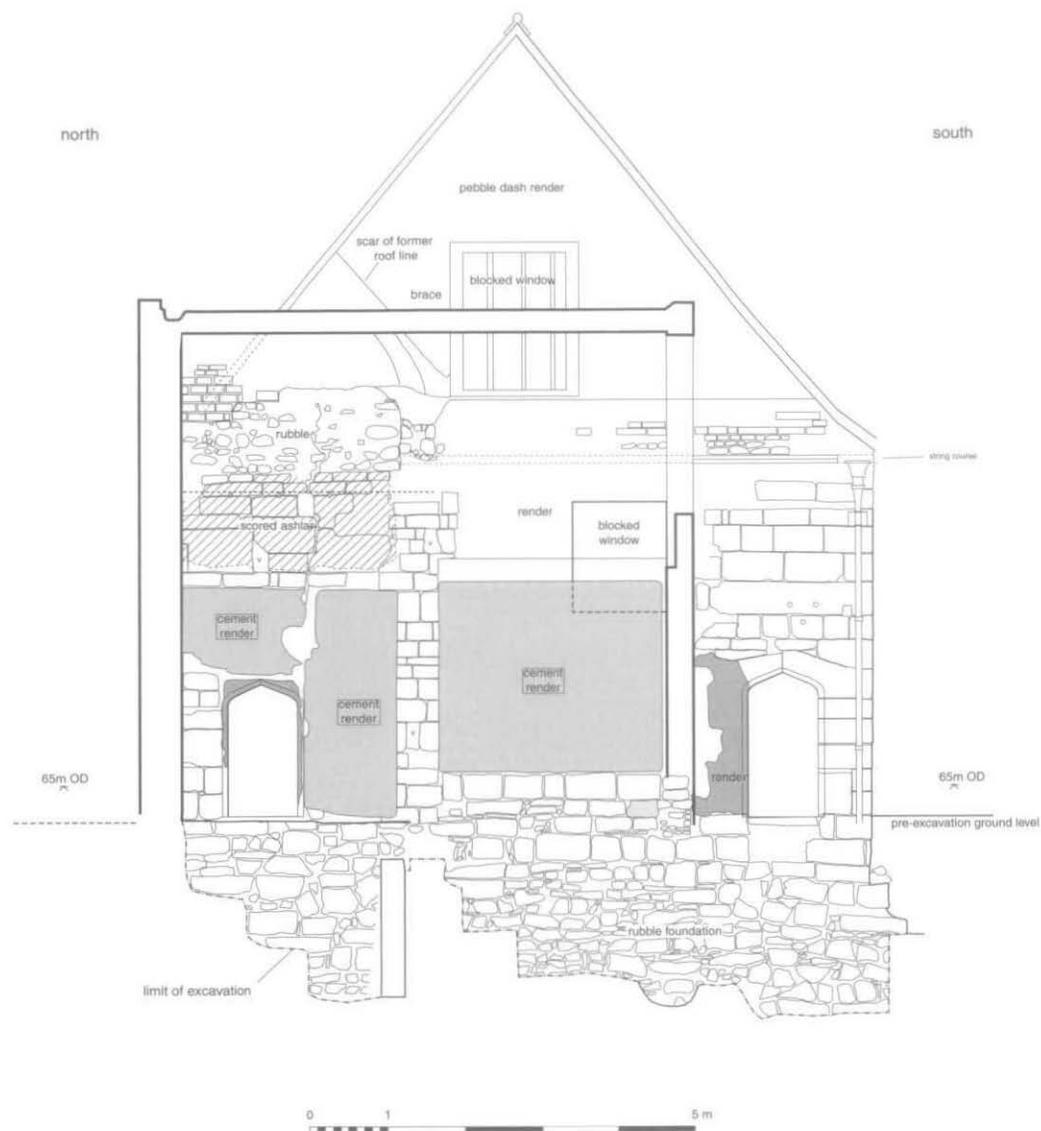


Fig. 12. West external elevation of Kitchen building.

Hearths were built up from the top of foundations in the east and north walls and on the removal of some of the 19th- to 20th-century accretions, the extent and form of the original openings was observed. The original form of the east fireplace (1040) was most clearly determined: a broad splayed opening (4.6 m. wide) beneath a segmental arch with a hollow chamfer. This had been altered in subsequent phases, partially blocked and pierced by a door (Phase 6). The internal recess was 0.95 m. deep.

The north and south fireplaces were smaller, with flat arches (that on the north appeared to have a relieving arch above). The northern hearth, 1005, which was constructed of mortared stone blocks, was 1.30 m. wide x 0.28 m. high with a recess depth of 0.33 m. The remains of two bread ovens were also revealed. In the NE. corner were the slight remains of an oven, probably an original feature, with walls of tile and limestone and a domed roof of tiles (20 mm. thick) set on edge. To the west side of the fireplace an inserted brick-built oven was recorded, its thin bricks suggesting a 16th- or 17th-century date.

The existing material of the southern fireplace was seen to abut the wall surface suggesting that the existing structure was not an original feature of the Kitchen. The style of this fireplace also differed from that of the original north and east wall examples; these original openings were splayed whilst those of the south was perpendicular to the wall with no sign of any further blocking concealing an earlier splayed opening. However, the back of the fireplace was of rubble build as seen in the backs of the original fireplaces unlike the rest of the original walling which was of ashlar stonework. This fireplace had clearly been altered considerably with the removal of the stack.

The works enabled a close examination of the roof carpentry, though the well-painted surfaces did not allow the surface of the timber to be seen. It is built in three bays, with two open trusses and differing end trusses, one built against the stonework of the east gable, and the other forming a timber-framed west gable. The construction is of principal rafters with two butt-purlins on each side, and two collars, the lower one arch-braced. There are two wallplates, the outer one taking the feet of the rafters and the inner one with mortices for the now missing ashlar to each rafter foot. No member joining the two wallplates is now apparent. There are windbraces in the central tier between the two purlins, rising from the principal rafters to the upper purlins, and pegged to a rafter at the centre.

There are two curious aspects to what would otherwise be a fairly standard late medieval roof. First, in the two open trusses there are ashlar posts at the foot of the principal rafters that curve up into the inclined plain of the arch braces, thus forming a continuous arch across the roof. It is not known if the other ashlar were similarly curved. The second feature is that all trusses except the western one are truncated below the apex, and the tops of the rafters are joined with a yoke, in the manner of a cruck roof (the curved ashlar would contribute to this appearance). Although this might appear to be related to the base of a large smoke louvre, this is unlikely given the varied height of the yokes (and the presence of chimneys). So, unless there is a special factor such as the eastern top of the roof burning off, this would seem to be an original design feature that is all the more remarkable for being nearly invisible from ground level.

The trusses are numbered I, II, III from the east end, the south side of the roof being distinguished with a semi-circle, and the north side with a tick. All joints where visible are of pegged mortice and tenon (including the rafter yokes), except the junction of purlin and rafter, which has a spurred tenon (perhaps allowing for maximum grip with minimum weakening of the rafter). In the west wall the soffit of the collar beam has mortices for a previous set of studs, since most of the present ones are modern. It is likely that some of the roof was replaced in the 19th century, though new and old work is hard to distinguish except by sharp arises on the timbers.



Fig. 13. The Kitchen (looking west) with Phase 4 scaffolding postholes and pit 1051.

*East of the Kitchen building*

Underpinning the east Kitchen wall was a poorly constructed relieving arch (Fig. 8). Wall 199 to the north seems to have been part of the original arch construction. This wall was trench built and comprised coursed limestone blocks in a sandy mortar. It was 2.10 m. deep, c. 0.60 m. wide and projected 0.60 m. east from the Kitchen wall. To the south, this arch was constructed using a possibly earlier wall (82). This wall was 0.40 m. wide, 1.10 m. deep and also projected 0.60 m. east from the Kitchen wall; it was a trench-built wall of uncoursed, limestone rubble in a sandy mortar. Both of these walls cut through Phase 3 soil layers. A further deposit (81) was deliberately placed under the arch, in order to stabilise the arch which appears to have flattened. Deposit 81 – 0.50 m. thick – was more substantial than the lower deposits and contained a clay pipe stem and part of a fireplace. As a further stabilising measure, a rubble layer was placed between the arch and 81. The projecting walls may have formed a sub-ground structure associated with the Kitchen such as a cellar or coal-store, built in the late 15th century after the college had acquired the site of Oliphant Hall in 1463.<sup>19</sup>

A third wall (150) to the south was also aligned E.-W., but does not relate to the walls described above. Wall 150 comprised five courses of sneaked, tabular limestone pieces bonded with clay. It was heavily truncated by 19th-century foundations to the west, so its true extent is unknown.

Further to the south in East Basement test pit 8 was a sequence of deposits (140, 139 and 138) seen in section which may have been further floors and occupation deposits, which overlay pit fill 141 (Phase 3). Overlying this gravel surface was a layer of brickearth with mortar and charcoal inclusions (137). Finally, a thick band of greyish brown silty sand (156) built up, suggesting a period of disuse in an external environment.

*The Kitchen courtyard: the well and other features*

Three pits were cut early in Phase 4 in the northern part of the New Wine Cellar: 749, 751 and 745=10 (which cut 751). Pits 749 and 751 cut the earlier Phase 3 soil deposit 753=778. Pit 751, 0.14 m. deep, was sub-circular, truncated by later works, with shallow sloping sides rounding to a concave base. Slightly further to the south and west was pit 749, 0.35 m. deep, that had been similarly truncated by later works; it was a subcircular cut with steep sloping sides rounding to a concave base. This pit contained at least one fill (950) that produced medieval pottery. It is possible that these pits were used to extract gravel during the construction phase. Overlying the fills of these pits were three gravel deposits varying in thickness from 0.03 m. to 0.10 m.: 748, 747 and 744. Deposit 744 was a cleaner gravel deposit than 748 and 747, which were dirty gravels mixed with debris probably associated with construction of the Kitchen. Deposit 748 contained large amounts of late Saxon pottery, as well as oyster shell. The third pit, 745=10, was circular and cut through deposit 744. This area of the site was then covered with a series of gravelly make-up layers for the courtyard surface. This pattern was also found in East Basement test pit 1 in the NE. corner area of the site.

In the central western part of the site, three layers are of particular interest: 535=14, 534 and 522. The earliest Phase 4 deposit, 535=14, was a grey brown loam that produced a coin of Edward II as well as German Stoneware. Overlying this deposit was 534, a more typical construction deposit that was cut by the well construction cut (537) and the construction cut (765) for wall 507. The deposit contained large quantities of tile and Brill/Boarstall ware as well as some vessel glass. This layer was then overlain by a thin mortar layer (522) which contained a 14th-century floor tile. Later deposits, i.e. post-Kitchen wall construction, were of a similar nature. Deposit 521, one of the latest in the sequence, was a thin loose dark grey sandy loam deposit that produced a single sherd of Brill/Boarstall ware; it was cut by well construction cut 514.

The construction cut for the well cut through earlier deposit 541 and was first observed from the level of construction debris layers 522 and 534; it was roughly circular and extended c. 0.75 m. to 1.0 m. from the western edge, while the east side of the well was built flush against the cut. There was a small amount of evidence for timber shoring since a tiny portion of timber remained *in situ* on the eastern side. This cut was filled by five deposits (stratigraphically later than the well construction): 552, 551, 550, 545 and 524. Fills 552 and 550 contained 11th-century pottery, and fill 545 contained oyster shell as well as pottery including Brill/Boarstall ware and Tudor Green ware. In addition, there was a layer of construction debris (525) that was localised around the well and was truncated by a Victorian brick gully 533. This debris was a 0.05 m. thick layer of loose yellow mortar and gravel that contained Brill/Boarstall ware. The well, built of coursed limestone blocks, was c. 7 m. deep and c. 1 m. in diameter (Fig. 14). The blocks were on average 0.5 m. x 0.8 m. x 0.4 m. (some were double this size) and were bonded by a sandy mortar. Although the outer stones were rough, the internal blocks were well-hewn and faced. Some of the stones on the upper edge were worn smooth which suggests that they had been worn by the use of a rope and pulley. The well was not entered or excavated since it contained water.

<sup>19</sup> Green, *Commonwealth*, 28, 32.

To the south of the well was a sub-rectangular cut (596), 2.40 m. x 1.50 m. x 1.20 m., with vertical sides. The base sloped E.-W. away from a gully/channel running to the south. The base was overlain by a loose mortar and gravel deposit which extended 1.10 m. across the feature. A thin layer of fired clay (616) overlay this deposit and again extended 1.10 m. A further layer of soft silty clay overlay 616 and extended 1.40 m. across the feature. There were no datable finds recovered from these contexts, but it is highly likely that this feature was associated with the Kitchen or its auxiliary structures.

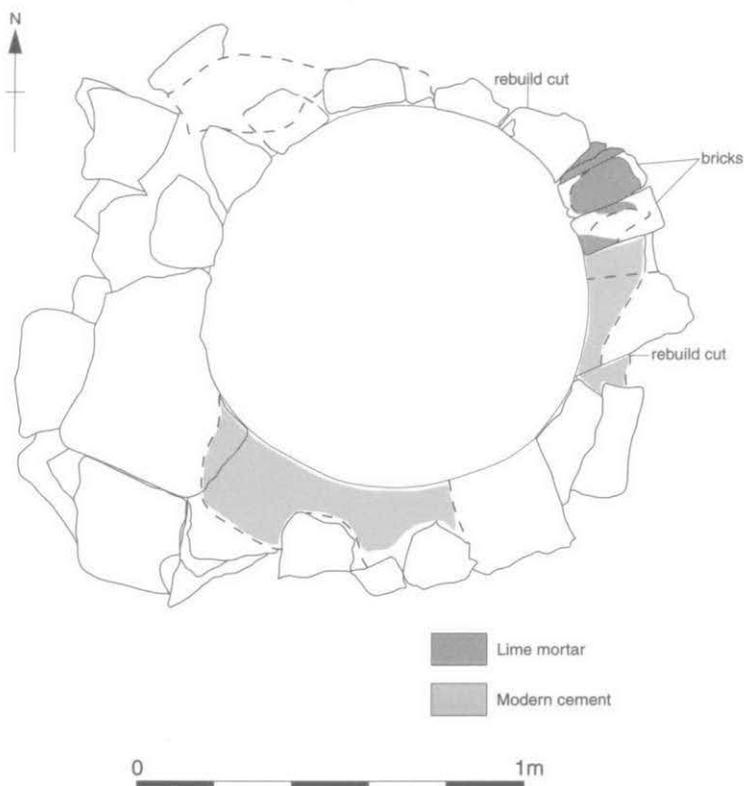


Fig. 14. New Wine Cellar: Plan of well structure, Phase 4.

#### *The Hall and Buttery Buildings (Fig. 15)*

The Hall forms the east side of the front quadrangle, with the screens passage giving access to the Kitchen yard. The east wall of the Buttery/Hall was N.-S. aligned and was identified on the western side of the New Wine Cellar. The wall was trench built and construction cut 794=771 cut away pit 703 (Phase 2). East wall 564=584 was built over foundation 583, which was limestone ashlar bonded in brickearth. Foundation 583 also included limestone relieving arch 812, which was sprung over soft ground and spanned at least 1.7 m. Wall 564=584, which overlay both of these structures, consisted of five courses of well-dressed limestone ashlar. The upper three courses contained blocks measuring c. 0.6 m. x 0.34 m., the lower courses were made of larger blocks measuring 0.9 m. x 0.4 m.

Buttress 803 was the northernmost buttress of the east facing wall of the Hall. The foundations, 804 and 805, which were of the same build as 583, were not fully exposed. As exposed, there was 1.40 m. of unfaced limestone blocks, the lower level of which (804) projected 1.95 m. from 564 and the upper level (805) 1.60 m. Overlying the foundation were six courses of ashlar (806) 1.45 m. high and projecting c. 0.95 m. The blocks ranged in size from 0.8 m. x 0.28 m. x 0.24 m. to 0.35 m. x 0.30 m. x 0.25 m.; they were not arranged into any pattern. The highest part of the buttress (807) was sandstone rather than limestone and bonded by lime mortar. Furthermore the blocks, which were c. 1.1 m. x 0.8 m. x 0.2 m., were either ashlar or sculpted which indicates that they were the outer face of the Hall.

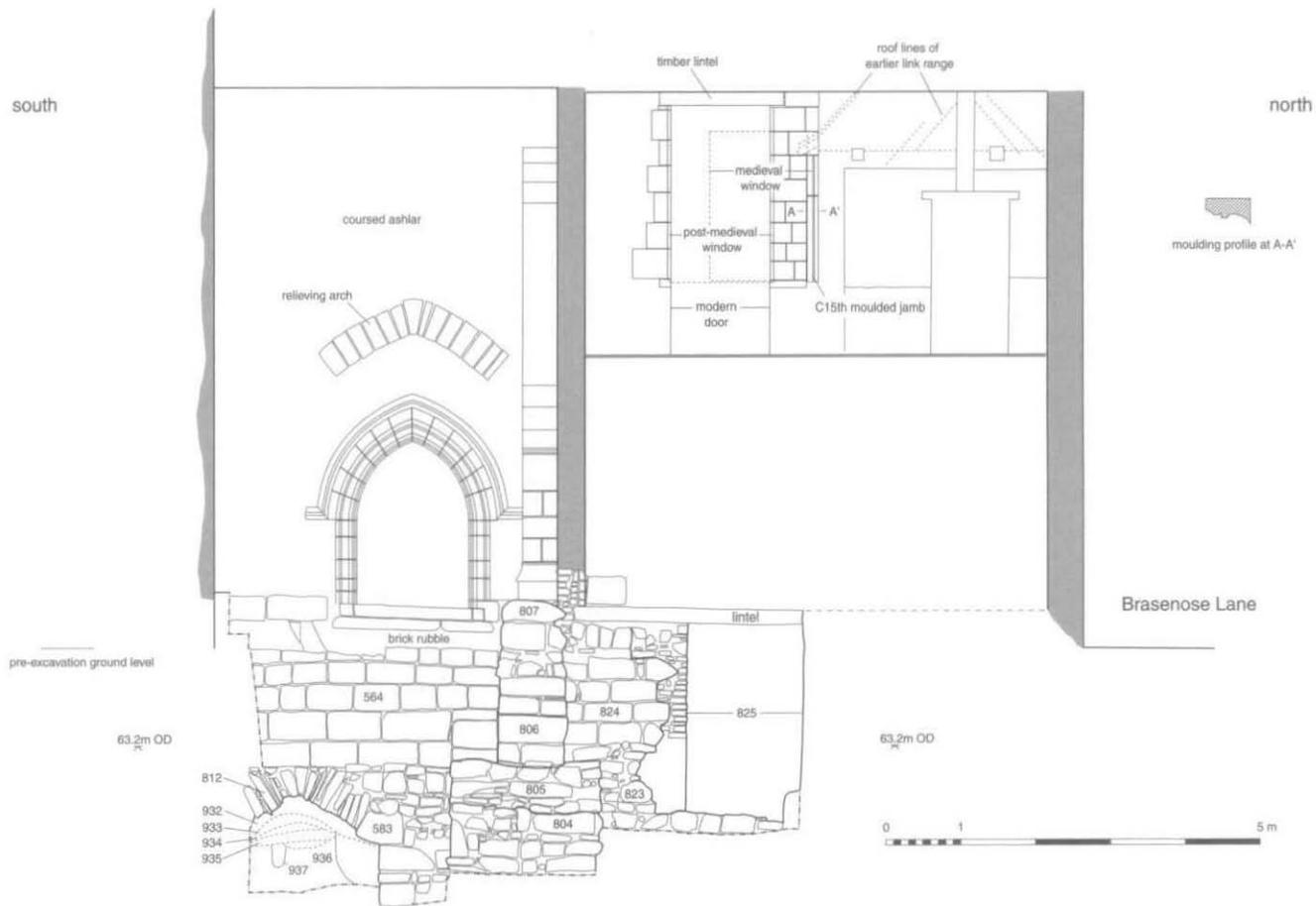


Fig. 15. East elevation of Buttery/Hall cross passage.

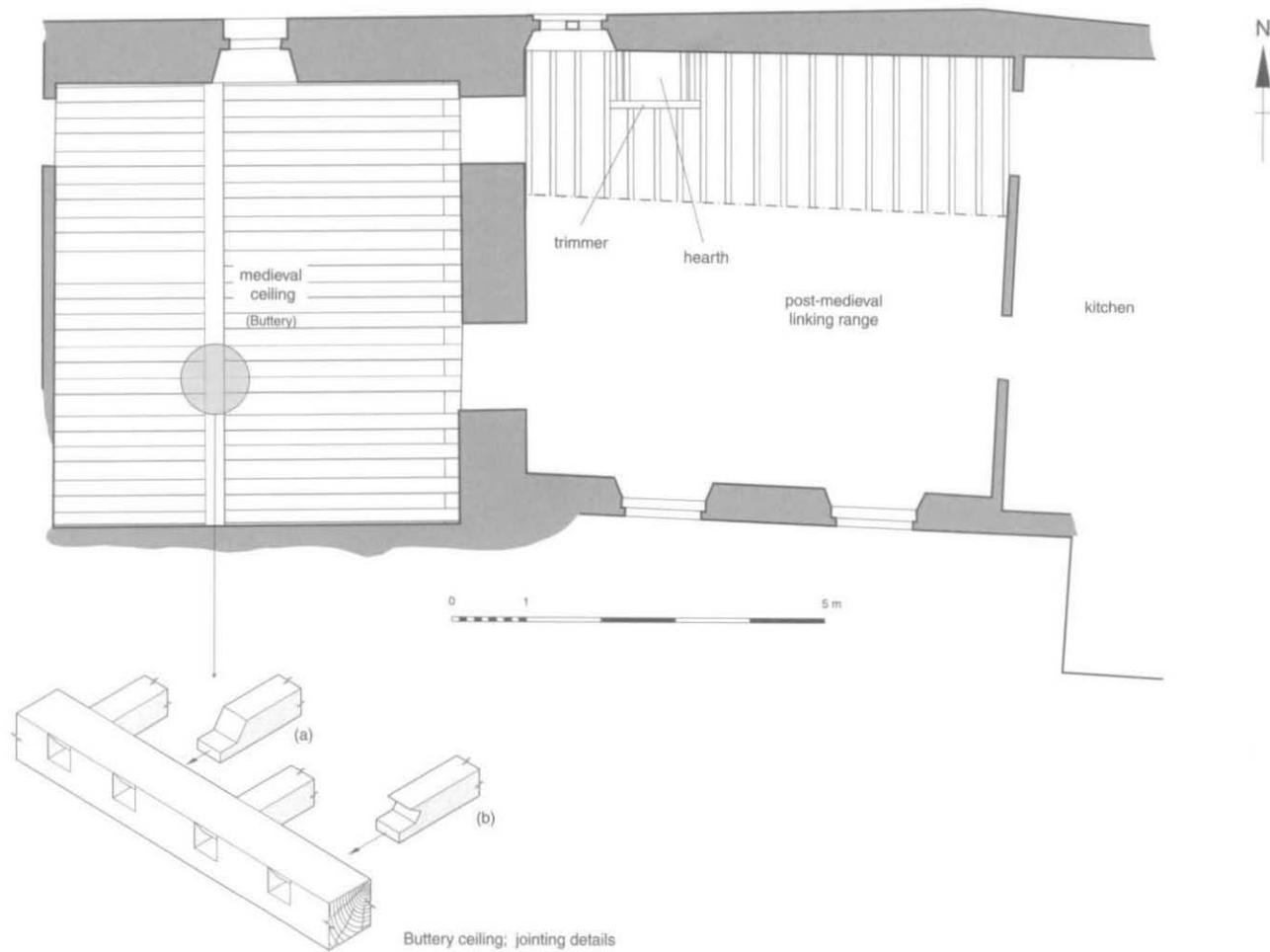


Fig. 16. Plan of link passage and Buttery ceiling including jointing details.

To the north of the buttress was wall 824 constructed on a slightly different alignment to wall 564. The foundation of the wall was made of ashlar, of which five courses were exposed. The wall above was also of ashlar bonded with yellowish grey sandy mortar; unusually, the blocks were placed with aligned (as opposed to staggered) joints. The wall extended 1.45 m. from the northern face of the buttress before being truncated by wall 825 (Phase 5).

In addition, further to the south, in the Grove Quadrangle watching brief, the faced east wall of the Hall (300) was identified, descending *c.* 1.4 m. below the paving (at 64.40 OD). Beneath the Hall, in Deep Hall Bar test pit 2, medieval soil deposits were identified at the base of the test pit (0.7 m. to 0.9 m. below the floor level); post-medieval deposits overlay these and contained fragments of clay pipe.

Next to the north end of the Hall, and contemporary with it, was the Buttery, with a cellar beneath it and a chamber above. The Buttery ceiling (i.e. the oak joists of the first floor) was of exceptional interest (Fig. 16) in that it was dated by dendrochronology to the winter of 1436/7 (corroborating the historical date, see below), and utilised a late medieval type of joint between the common and principal joists: a soffit tenon with a diminished haunch. This is the earliest date for this type of joint in Oxford, though it was used at Abingdon in 1429 (at 24 East St. Helen's), and was later to be used at All Souls College in 1438-42.<sup>20</sup> The series of connecting buildings between the Buttery and Kitchen had altered the medieval arrangements on more than one occasion. The majority of the walling was of medieval ashlar stonework, and on the first floor there was evidence for a medieval window with the survival of a moulded jamb from the north side of a former opening; its style suggests a 15th-century date and matches other original openings in the college indicating that the former window was an original feature. This window had later been blocked and then become a door.

#### PHASE 5: 16TH TO 18TH CENTURY (Fig. 17) with contributions by JULIAN MUNBY

Although the buildings in the Hall/Kitchen area continued in use without major changes in Phase 5, there were a continuing series of minor alterations and repairs, which are increasingly documented in college records. One new and unusual piece of building was the creation of a cellar beneath the Hall in 1640, which must have included the stone pillars to support the Hall floor (see Appendix 1).<sup>21</sup> David Loggan's view of the college in 1675 shows that the Kitchen had three chimneys, two dormers on the south side, but no louvre.<sup>22</sup> A connecting range was built between the Buttery and Kitchen, but documentation for this has not been identified.

#### *The Kitchen*

The main structural alteration identified in this phase was the insertion of a bread oven in the north wall (see above). This was of brick construction, accessed from the rear of the fireplace and with a flue into the chimney. It measured about 1.2 m. in diameter and was 0.48 m. high; the floor was formed of tiles (250 x 130 x 40 mm.) and the walls and dome of bricks (215 x 110 x 50 mm.). An additional hearth (1041) was built up from the top of the foundation of the south wall. It had an internal width of 2.3 m., a recess depth of 1 m. and a minimum height of 2.2 m. Other undated features possibly of this phase, if not later, include the sink recess in the west wall and the window above it, and the descending stairs and door in the SE. corner.

Evidence for the build-up of hearth deposits during Phase 5 was present in the south and north hearths. A 0.03 m. thick deposit of black charcoal and ash (1026) built up in the south hearth; it was 0.90 m. x 0.30 m. in extent. In the north hearth five layers (1004, 1003, 1010, 1012, 1013) built up on top of dump layer 1019. All of these deposits consisted of dark brown sandy clay of varying degrees of compaction and ranging in thickness from 0.10 m. to 0.28 m. Silt deposits 1020 and 1021 were associated with the northern hearth, but probably not with its use. In front of the hearth lay a single flagstone (1029) 0.33 m. x 0.25 m. x 0.05 m.; probably a remaining flagstone from the Kitchen floor. Four other flagstones (126) were also found in this area (in East Basement test pit 7), which were set into 1019=127; these flagstones varied in size from 0.70 m. x 0.70 m. x 0.08 m. to 0.40 m. x 0.70 m. x 0.10 m. A compact silty sand with ash and burnt soil material (132) built up over these stones during Phase 5. Later in Phase 5 new hearth stones (129) were laid down: limestone flagstones set into a dark yellow mortar set (133). Overlying all these layers at the end of Phase 5 was a sandy clay and ash dump layer (1002).

<sup>20</sup> D.H. Miles and M. J. Worthington, 'Tree-ring Dates from Oxford Dendrochronology Laboratory', *Vernacular Architecture*, 30 (1999), 103 (List 100, no. 11). These diminished haunch tenons were thus contemporary with the 'spurred tenons' reported by Hewett at Wells and Lambeth in the 1430s: C.A. Hewett, *English Historic Carpentry* (1980), Figs. 296-8.

<sup>21</sup> Green, *Commonwealth*, 165 n.6, 583.

<sup>22</sup> D. Loggan, *Oxonia Illustrata* (1675); the famous birdseye map in a rare error omits the kitchen and shows only a small building next to the Buttery.

Overlying 1020, but not flagstone 1029, was 1019=127: a general spread of dump material 0.18 m. to 0.30 m. thick that extended over the entire Kitchen floor area and contained large amounts of medieval pottery and 15th-century building materials. It seems that this deposit was a general spread of dumped material. Pit 1016, in the centre of the Kitchen, cut floor deposit 1019; it was an oval cut 2.50 m. x 0.70 m. and 0.40 m. deep with steep sides and a fairly flat base (Fig. 13). The primary fill (1028) of this pit was a silty sand deposit that contained Overfired Brill/Boarstall ware, Brill/Boarstall ware and Tudor Green ware, mortar fragments and oyster shell. The upper fill (1017), a clay silt deposit, also contained Brill/Boarstall ware as well as a large number of small flints and stones. Other finds included an iron knife and a fragment of a skimmer.

Overlying 1019 was floor deposit 1018: a hard clay deposit *c.* 0.12 m. thick that contained a high density of bone and shell fragments and several metal objects including three drop handles and a pastry cutter (Figs. 24.5-24.7) as well as a wide range of pottery. This deposit only survived in the NW. corner, but probably overlay the entire Kitchen; it is unclear whether it would have sealed the fills of pit 1016. Sealing this deposit was a compacted layer of silty clay with some crushed stone fragments (1023). In the centre of the Kitchen, to the south of pit 1016 and overlying 1019, lay a sub-rectangular spread of approximately 40 stone slab fragments (1037) 1.16 m. x 0.82 m. x 0.13 m., possibly representing the remnants of the paved floor.

#### *East of the Kitchen*

At the beginning of Phase 5 walls 82 and 199 from the Phase 4 outbuildings were dismantled and the stone removed. The dismantling of wall 199 was shown by the presence of robber trench 190 that was 0.95 m. deep and filled with building rubble, including faced ashlar. Evidence for the removal of stone from wall 82 was found in the form of a loose grey white mortar deposit (204), 0.4 m. deep, which contained pieces of limestone that overlay the remains of the wall.

Adjacent to Brasenose Lane, in the NW. corner of test pit 3, was wall 107, an E.-W. aligned red brick and limestone structure at least 0.20 m. wide. To the south of this wall was a hearth (108) of which a single burnt flagstone remained. This hearth was abutted by a compacted mortar layer 164=158=80 that probably represented a floor surface; clay pipe stems were recovered from this surface. Overlying this layer was a silty sand occupation deposit (168=157=100) with charcoal, mortar and limestone fragments; a thin compact lens of burnt material was found at its interface with 164=158=80. A thin burnt deposit of 40% charcoal was also found overlying 100. Overlying 168 the series of floor deposits continued: mortar floor 167, compact sand surface 166 and mortar floor 163 that also contained a clay pipe stem. Overlying all these deposits and wall 107 was a very dark greyish brown silty sand with gravel, charcoal and limestone fragments (119) which was deposited at the end of Phase 5.

To the south of these deposits was a sub-circular pit (161) 0.80 m. x 0.60 m. x 0.40 m. with sloping sides rounding to a flat base. This pit cut through wall 150 (Phase 4) and contained one fill (162), a silty sand deposit with charcoal, limestone and gravel.

#### *West of the Kitchen*

Before the Phase 5 structures were built several layers of sand and gravel accumulated in the northern part of this area, overlying Phase 4 deposits 937 and 28, and were identified both in the New Wine Cellar and East Basement test pit 1: 735, 736, 29, 30, 31. In addition, a spread of charcoal (523), which contained a single sherd of Stamford ware, overlay Phase 4 mortar deposit 522.

During Phase 5, a passage linking the Kitchen and the Buttery was constructed. This passage ran 8.5 m. E.-W. across the courtyard between these two college buildings, to the north of well 514. Originally, the passage consisted of walls 947 to the north and 515 to the south. Wall 947, *c.* 2 m. high, comprised faced limestone blocks 0.15 m. x 0.30 m. laid in courses and rendered. This wall sat upon footing 952 which was built of crudely faced limestone. It is of interest that there was only one course of footing to the west, but up to seven to the east, probably to compensate for softer ground in the NE. area caused by the pitting in earlier phases. Further to the east the wall changed in character and was constructed of ashlar, but not rendered. The southern passage wall (515) was a rough drystone construction of limestone blocks. At a later date in Phase 5 the southern wall of the passage was rebuilt slightly off the line of 515 and more squared with buildings. The foundation of the later wall (516=6) was trench built, and the wall constructed of coursed limestone with a rough face. The wall was offset by 0.25 m. northwards at its eastern end.

The eastern section provided good evidence for the passageway surfaces. The earliest deposit (731), was a mixed black charcoal layer, which overlay the fill of a pre-passage pit 738. This deposit was overlain by a partially intact layer of cobbles (730) set in a matrix of sandy gravel. Sandy silt (729) accumulated on this surface. Overlying this was a later cobbled surface made of irregularly-shaped stones, ranging in size from 0.2 m. to 0.6 m., which were set on edge. By the end of Phase 5 these cobbles had been covered by a loose light grey-brown silty clay (609).

After wall 516 had been built, a different passageway was constructed from the Buttery, heading diagonally SE. across the courtyard. This later passage (825) was brick built, laid in courses of alternating headers and stretchers bonded with grey mortar. 825 cut through and was bonded to the Phase 4 walls 823 and 824, and the earlier Phase 5 wall 515.

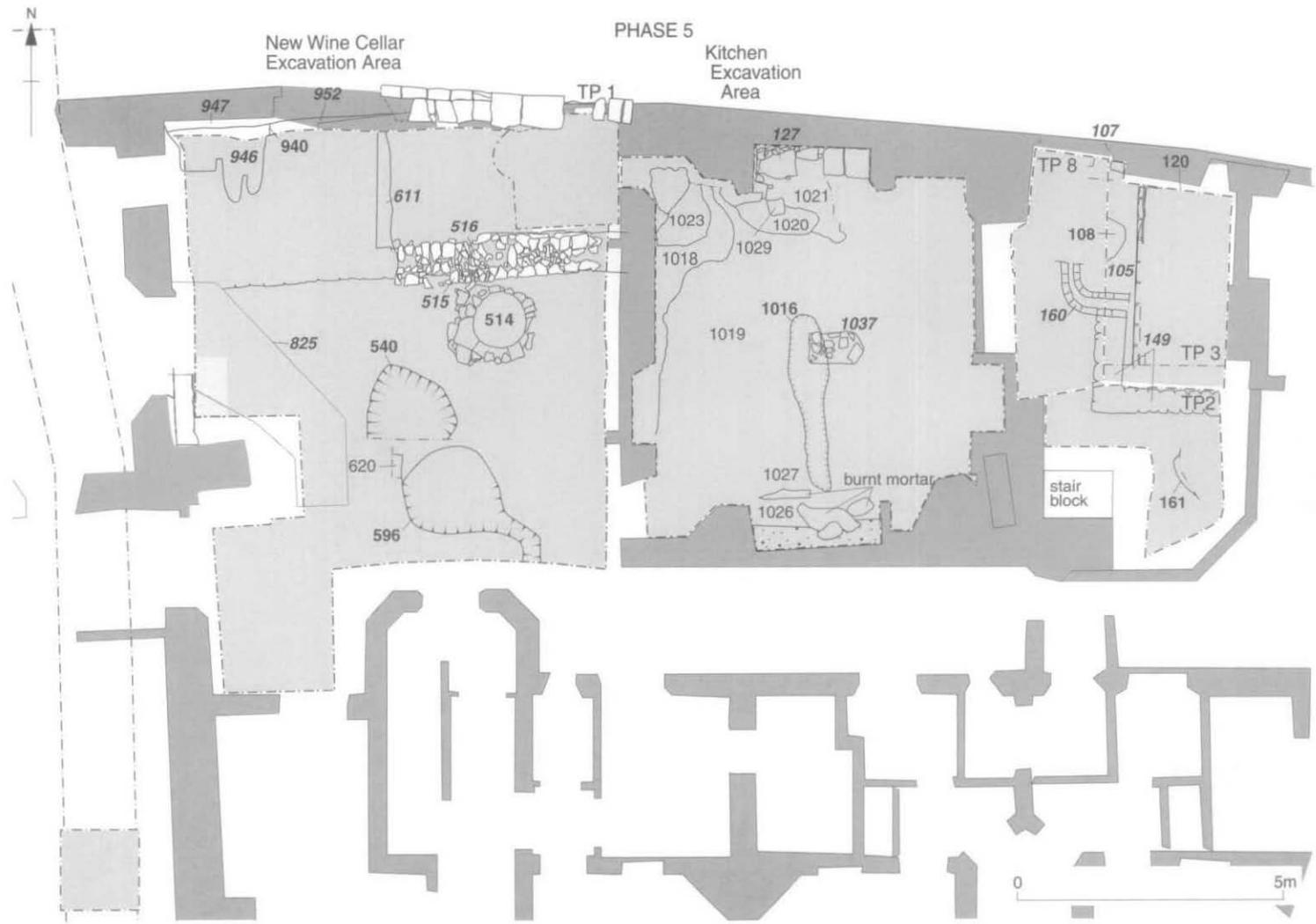


Fig. 17. New Wine Cellar, Kitchen and East Basement: Phase 5 features.

The link between the Buttery and Kitchen was raised to a two-storey structure, probably in the 17th century. The wall in Brasenose Lane has clearly been extended upwards, and the roof lines on the walls of the Kitchen and Buttery indicate the former outline of the building above first-floor level (Fig. 12). The 1939 RCHM inventory mentions 17th-century panelling and windows in this room, and in the recent investigations traces were found of a fireplace in the north wall, and remnants of a 17th- or 18th-century oak floor with a trimmer for a hearth (Fig. 16).<sup>23</sup> A doorway was made in the east wall of the Buttery in the 18th or early 19th century to give access to this room at first-floor level, and either then or subsequently the adjacent medieval window was partly blocked and extended southwards. This may have been associated with the higher and wider roofline that replaced the lower and earlier one (Fig. 15).

During Phase 5, a possible partition feature (620) of soft red brickearth, c. 0.30 m. thick was constructed to the NW. of the feature 596. Contemporary with this change further layers of burnt clay (615) and clayey loam (619) were deposited. Unlike Phase 4 deposits 616 and 617, 615 (0.40 m. in extent and 0.10 m. thick) was a localised deposit to the west of the cut and 619 (0.55 m. in extent and 0.38 m. thick) was a localised deposit on the eastern side.

In the SW. corner of the New Wine Cellar a later Hall buttress (918) was identified. The buttress overlay a series of earlier deposits and consisted of a support of brick and stone with a bed of gravel (919) and a single, large, rendered limestone slab.

### *The 17th-century cellars*

*Cellar east of the Kitchen:* The cellar east of the Kitchen was identified in East Basement test pits 2, 3 and 8. The cellar was 3.0 m. x 3.4 m. with trench-built southern and western walls (149) constructed of reused limestone blocks. These blocks varied in size from 0.11 m. x 0.07 m. x 0.36 m. to 0.57 m. x 0.20 m. x 0.26 m. and were faced inside and out; they were bonded with a soft yellow-brown mortar. This structure had a brick barrel-vaulted roof (104) bonded to the top of the western wall. The bricks (fabric 6) measured 0.07 m. x 0.22 m. x 0.11 m. and were bonded by a mid yellow-grey sandy mortar.<sup>24</sup>

A brick-built gully (160) was associated with the cellar. This drain had a steep slope and rounded a tight corner from the north into the western side of the cellar where it was bonded to an opening in wall 149 and vault 104. The bricks (0.24 m. x 0.10 m. x 0.07 m.) were laid on edge and set at an angle to form a channel with a concave base; they were bonded with a fine light grey mortar with a flush finish. The structure was three courses high and capped with limestone slabs.

The northern wall of the structure was formed by ashlar block wall 120. Wall 120 (sub-ground=121) followed an E.-W. alignment and formed the boundary between the college property and Brasenose Lane. The sub-ground section of the wall was made of rough-hewn limestone and brick bonded with light yellow-grey mortar. Furthermore, this section of the wall had a cut limestone door surround, which at a later date was made good by the addition of a concrete moulding.

*Cellar west of the Kitchen:* This cellar was located in the NW. corner of the New Wine Cellar excavation. The 3.2 m. long eastern wall (611) was aligned N.-S. and constructed of rough-hewn limestone blocks of various sizes (on average 0.2 m. x 0.3 m. x 0.2 m.) coursed and bonded with hard yellow-grey mortar. Passageway wall 515/516 formed the wall at the southern extent of the cellar. The northern wall was formed by wall 947. The final action in the construction of the cellar was the deposition of a rubble backfill up to 0.85 m. thick also identified within the construction cut for the structure (106).

At a later date 947 was underpinned by a crude limestone structure (946) 1.60 m. x 1.30 m., constructed in a large pit 2.5 m. x 1.7 m. that cut earlier Phase 5 wall footings 952. Two of the five fills of this pit (950 and 941) contained late Saxon to medieval pottery. This structure consisted of roughly dressed, large, reused blocks of limestone c. 0.80 m. x 0.40 m. x 0.25 m. As noted above, the footings of 947 were not as substantial in this area and may have succumbed to the earlier pitting in this part of the site. It is highly likely that this earlier pitting was also the reason that the foundations of wall 564 to the south were re-pointed or consolidated in Phase 5 as is evidenced by cut 574 which is positioned stratigraphically in Phase 5. This cut contained five fills (678, 718, 677, 608, 581=607) of which three contained late Saxon and medieval pottery. Deposits 677 and 608 both contained a high percentage of limestone rubble for packing.

*Cellar under Hall:* During the Grove Quadrangle watching brief, the east wall of this cellar was identified. Stone footings 317 were offset 0.6 m. from trench built stone wall 316 which consisted of six course of stones 1.7 m. high. The remaining 1.6 m. of wall comprised the Hall wall 300. (For the Hall cellar, see Appendix.)

<sup>23</sup> R.C.H.M., *An Inventory of the Historical Monuments in the City of Oxford* (1939) [hereafter *R.C.H.M. Oxford*], 67.

<sup>24</sup> Fabric 6 as identified by D. Brown, this report.

*PHASE 6: 18TH TO 20TH CENTURY (Figs. 18-19) with contributions by JULIAN MUNBY*

During Phase 6 further building works were carried out and the excavations provided direct evidence for the alterations to the college carried out by T.G. Jackson in the 1880s. On the 1878 1:500 OS plan the Kitchen is shown with fireplaces in three walls, and the linking building to the Buttery as a narrow two-room structure. Jackson's new building involved the reconstruction of the western half with a staircase and a diagonal wall to make a triangular corner room.<sup>25</sup> These were largely removed in the mid 20th century when the space was again reconstructed, and all have now been removed for the new servery area, and the first floor reconstructed. The remaining evidence for this was seen at the first floor level above the Buttery, where a 19th-century window replaced the medieval one, and was in turn cut through to form a door in the 1960s (Fig. 15). In the course of the 20th century a number of changes were made in the Kitchen yard to provide more scullery and preparation areas, but apart from the provision of new cookers in the centre of the Kitchen, the main Kitchen area continued to be used for the preparation and cooking of food.

*The Kitchen*

In the Kitchen the fireplaces were variously altered to meet changing fashions in cooking. The large fireplace in the east wall (1040) was partly blocked with brick to form a closed fireplace (with at least one range at the south end), and this was subsequently cut by brick piers to make a central door in the 20th century. The construction cut (1047) for this alteration, 2.65 m. x 0.7 m. x 0.20 m. (minimum) cut through a stratigraphically earlier Phase 6 layer 1046: a silty sand dump layer approximately 40% of which was sandstone blocks, some with adhering burnt mortar. The fill of the construction cut (1045) produced a lot of sandstone, brick and cement, as well as some residual pottery. Associated with these alterations was a 1 m. long red brick structure (1035) in the NE. corner (Fig. 19). The bricks, which were 0.22 m. x 0.11 m. x 0.07 m., were laid lengthways and bonded with light grey mortar. This structure may have been used as a partition wall footing or a cupboard base. Confined within this structure was a compact yellow mortar bedding (1034). To the south of 1035, lay another compact yellow mortar layer (1036) over 1019 that contained bricks and may therefore have been construction debris from the building of 1035. A similar brick structure (128) was found to the south in East Basement test pit 7. In addition, Phase 5 hearth stones 129 were disturbed and overlain by compact reddish brown silty sand debris (134).

In the north wall the fireplace (1005) was reduced in size and lined with white glazed tiles. In front of the hearth was a build-up of burnt mortar and ash (1009) over 1002 (late Phase 5 deposit); it was overlain by another deposit of mortar and ash (1008). These deposits were overlain by a further layer of pinkish brown mortar (1007), which was possibly bedding for a Victorian brickwork construction or the remains of a previous floor surface. The loose yellowish brown sand deposit (1011), to the west of the hearth and also overlying 1002, was bedding for the Victorian concrete foundation. To the NE. cut 1006, 0.70 m. x 0.50 m., cut through 1002 and exposed the hearth structure and foundation probably in the late 19th or 20th century. The cut was filled with sandy clay containing rubble and stone (1001). Further SW. of hearth 1005 was another modern intrusion (1014), which was an oval cut 1.10 m. x 0.60 m. x 0.18 m. filled with brick, stone and flint in a silty sand matrix (1015).

The fireplace in the south wall was abandoned and became a shelved recess. The latest deposit in the Kitchen was a make-up layer for the 20th-century floor comprising of sandy clay with brick, rubble and gravel (1000=131) that contained a single sherd of German Stoneware.

*East of the Kitchen*

At the end of Phase 5 and into the beginning of Phase 6, the area around hearth 108 was covered with three layers of dirty gravel, which overlay 119: 118, 117 and 116; two late 17th/18th-century wine bottle fragments and some 19th-century pottery were retrieved from 116. Overlying these layers was a sterile sandy silt abandonment accumulation (115). At a similar time the sequence of Phase 5 mortar floors was covered with a very dark brown silty sand deposit (151) with ash, mortar and charcoal. This deposit contained late 18th and 19th-century rubbish, e.g. 18th/19th-century glass, clay pipes and 19th-century pottery.

The 17th-century cellar was infilled in Phase 6 with a mixed deposit of loose silty sand with limestone, brick fragments, mortar and plaster (153). This fill contained a large number of finds, especially glass (including a college seal) and clay pipes as well as 19th-century pottery. (The late finds in the backfill of construction trench 147 for wall 149 may be explained by contamination from this infill deposit.) The cellar later suffered intrusions from Victorian period service trenches 110 and 109 that cut through Phase 5 rubble deposit 112.

<sup>25</sup> As shown on the plans in *V.C.H. Oxon.* iii, and *R.C.H.M. Oxford.*

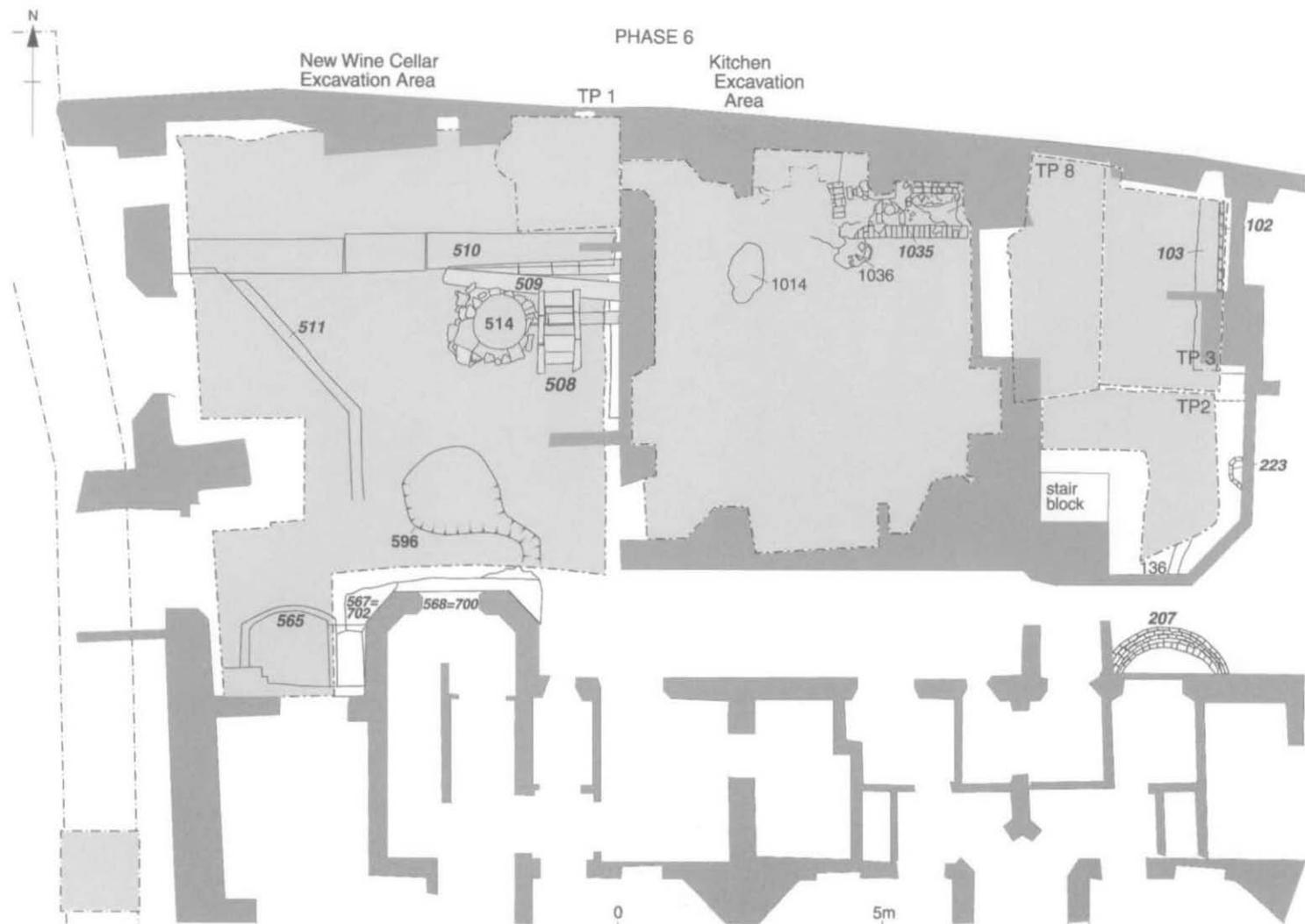


Fig. 18. New Wine Cellar, Kitchen and East Basement: Phase 6 features.



Fig. 19. North-east corner of Kitchen: Phase 6 brick structure 1035 and the east hearth.

To the east of the cellar wall 104, a late Victorian concrete and rubble foundation (103) on a N.-S. alignment was identified. This formed the foundation to brick wall 102, just visible in the west of the trench, that formed the western wall of two rooms in the NE. corner of a single storey structure. The eastern wall of this structure was founded upon a 2.15 m. deep rubble and concrete foundation (72) that also comprised some reused York flagstones. Over these foundations lay wall 74 which was more than six courses high and bonded with yellow brown mortar in an English bond; the bricks measured 0.225 m. x 0.115 m. x 0.07 m. Before this wall was constructed two service trenches had been cut through the Phase 5 layers in this area. Foundation 72 was also the backface of the wall for a stairwell which took stairs from the Kitchen down to the new cellars below the ranges in the south of the Kitchen.

To the east of the stair block was a 19th-century service trench (136) which contained a 7" ceramic pipe. This service trench, capped by limestone flagstones, ran out from the south baulk under the Victorian foundations in a NNE. direction to soakaway 223, which was over 2.5 m. lower than the base of the pipe trench. The soakaway was a circular brick-lined bottle drain, which tapered towards the top to an opening of c. 0.4 m. It is likely that this soakaway was used to take water from the lightwell to the south. The lightwell (207) was a semi-circular structure constructed out of red bricks (0.21 m. x 0.12 m. x 0.1 m.) in standard stretcher courses.

The latest surfaces in this area were two modern floors 75 and 124. Floor 75 in East Basement test pit 2 comprised hardcore c. 0.20 m. thick, covered by concrete 0.11 m. thick and 0.03 m. of screed with a finish of red quarry tiles. In East Basement test pit 3, the surface was also a quarry tiled floor over screed and concrete upon hardcore c. 0.25 m. to 0.30 m. thick.

#### *West of the Kitchen*

During Phase 6 the well was provided with a brick-built soakaway (508) that comprised of two parallel courses of bricks (0.2 m. x 0.12 m. x 0.1 m.) in stretcher courses with a hard white cement bond. The structure measured 1.8 m. x 1.1 m. and had a flat base angled slightly towards the south. This soakaway was part of the same construction as the top of the well. The top of the well was furnished with a red brick lining (502) laid as stretchers at least 1 m. deep and 2 m. in diameter and one brick wide. To the east of the well a thick rubble layer surrounded the well that related to rebuild 502. In addition, there was brick-built gully (509), 1.2 m. wide x 1.5 m. long, with a barrel-vault which housed a ceramic pipe. This structure was built of red bricks, 0.22 m. x 0.12 m. x 0.1 m., in stretcher courses. It is possible that this structure is contemporary with 502 and 508.

During Phase 6 structure 596 was infilled. The earliest backfill layer (612), which was a consolidation packing layer of limestone, contained modern tile and 18th-century glass. Overlying this was a deposit of fired clay (614) that probably originated from 620. A thick homogeneous deposit of soft greyish brown silty clay with some gravel and grit inclusions (618) was then deposited in the soakaway. This was in turn overlain by a soft bluish grey silty clay (599). Finally, a further layer of limestone rubble was placed in the feature (597).

The east wall of the bar cellar (511=35) was identified in the New Wine Cellar. The stonework consisted of pale red bricks (0.22 m. x 0.12 m. x 0.1 m.) in stretcher courses bonded with light brown cement.

The construction cut for the south wall of the Quincentenary Room (553) had a flat base and vertical sides 0.75 m. wide and 0.40 m. deep. This cut through a 20th-century make-up layer (530), which butted a silt layer to the east (531); deposit 530 contained 20th-century window glass. The fill of 553 was a loose grey silt with concrete and mortar chips (554) that also contained residual pottery. The brick foundations of the south wall comprised a 0.4 m. wide foundation of red bricks (0.22 m. x 0.12 m. x 0.1 m.) in stretcher courses bonded with a grey-brown cement. The upper part of the south wall (513) was also a modern brick wall, 0.5 m. wide and rendered on its southern face with a grey gritty render. The floor of the Quincentenary Room was a 0.2 m. thick concrete floor (501) that was overlain by floor timbers (506) 0.15 m. thick including joists. In addition, a reinforced concrete safe (500), which butted the eastern Kitchen wall, overlaid the concrete floor.

A third rebuild over the original southern passageway wall occurred in Phase 6 and probably dates to the alterations of the 1950s and may be contemporary with south wall 512 of the Quincentenary Room. This wall (510) comprised limestone blocks, concrete and bricks and supported two piers of a dividing wall. To the south was a dark yellowish brown gravel and mortar mix that may have been associated with this rebuild.

#### *Grove Quadrangle and Buildings*

In the southern area of the New Wine Cellar the foundations and footings for the Grove Building built in 1883 by T.G. Jackson were found. The footings (567=702) for structure 568=700 were roughly cut limestone blocks varying in size from 0.15 m. x 0.10 m. to 0.30 m. x 0.15 m. These footings were bonded directly to foundation core 566, which was the limestone and mortar rubble foundation core to 568; it was offset by 0.60 m. to 568. Structure 568 was brick-faced with bricks in an English bond (0.18 m. x 0.8 m. x 0.10 m.); the bricks above ground level were white-washed. To the west of these structures was a dump of compact yellow mortar rubble, 2.86 m. x 0.51 m. x 0.08 m., which was probably debris from the construction of the Grove Building.

To the north were two clay silt make-up layers associated with this building (563 and 571), one of which (563) produced 19th-century wares. Also associated with the 1880s construction may be a 1.45 m. thick concrete deposit that lay between 511 and 515 and may represent the foundation for a spiral staircase.

The watching brief in the Grove Quadrangle identified some interesting aspects from Phase 6. The earliest Phase 6 feature was a N.-S. aligned stone-lined culvert (322) whose inner depth was 0.4 m. The cut for this feature (323) had vertical sides and a flat base, 0.9 m. x 0.5 m. and cut through several possible make-up layers: 328, 326, 327, 325 324 and 320. The culvert cut was backfilled with 0.15 m. of material and subsequently the whole area was covered by a series of 19th/20th-century make-up layers, through which service trenches were cut. Finally, the quadrangle was paved with stones (301) which were set into 0.12 m. of make-up material (302).

#### *The Rector's Garden*

Several structures were identified during the watching brief in the Rector's Garden. At the base of Trench B was a 0.5 m. thick layer of mid brown clay-silt with crushed mortar (8) that contained animal bone, two clay pipe bowls, the top of an 18th-century wine bottle, a sherd of post-medieval window glass and a mixed pottery assemblage of Bellarmine, 17th- to 18th-century red earthenware and some intrusive white china fragments. This deposit was cut by a construction trench (6) for a structure (7) aligned NNE.-SSW. The stonework comprised several courses of stones and occasional brick fragments; the full extent of the wall is unknown, but must have been substantial since it was 1.7 m. wide and at least 0.44 m. high.

In Trench C the remains of an E-W. aligned wall (5) were identified. The construction cut (4) for this wall also cut layer 8 and the wall was constructed in a similar fashion to 7, i.e. unbonded stone rubble with occasional brick fragments. The wall was 1 m. wide and exposed to a height of 0.3 m.; two modern service pipes had disturbed the top of the stonework.

At the base of Trench D was a light brown sandy silt deposit with crushed mortar and rubble (10); a mixed pottery assemblage was recovered that included German Stonewares, red earthenwares and intrusive Willow Pattern china. The construction cut (9) for wall (1) cut this layer. Wall 1 was aligned E.-W. and 1 m. wide; it was exposed to a depth of 0.24 m. Unlike the other walls, this stone rubble wall had remnants of a fine reddish sandy mortar.

## THE FINDS

### THE POTTERY by PAUL BLINKHORN

The pottery assemblage comprised 2358 sherds with a total weight of 31,526 g. The minimum number of vessels (MNV), by summation of rimsherd length, was 20.48. A full record of the number and weight of pottery sherds per fabric type can be found in the site archive. The range of pottery present indicates continuous activity at the site from the early to middle 11th to the 15th centuries, after which time no pottery was deposited until the 19th century. This corresponds well with the known history of the site.

#### *Fabrics*

All the fabrics are well-known types, with the majority common finds on contemporary sites in Oxford and its surrounding region. As a result, and where appropriate, the 'OX'- prefix coding system of the Oxfordshire County type-series has been used,<sup>26</sup> as follows:

- F100: OXR: *St. Neots ware*.<sup>27</sup> Wheel-turned shelly ware, c. AD 800-1200. 755 sherds, 5068 g., MNV = 5.59.  
 F101: OXB: *Late Saxon Oxford ware* ('Oxford Shelly ware'). Handmade, later vessels wheel-finished. Late 8th to early 11th century. 13 sherds, 1165 g., MNV = 0.12.  
 F102: OXBF: *South-West Oxfordshire ware*. Flint and limestone-gritted ware, handmade, wheel-finished, c. mid 11th to early 13th century. 44 sherds, 857 g., MNV = 0.25.  
 F103: *Thetford-type ware*.<sup>28</sup> Wheel-thrown sandy ware, c. AD 900-1150. 2 sherds, 30 g., MNV = 0.

<sup>26</sup> M. Mellor, 'Oxford Pottery: A Synthesis of Middle and Late Saxon, Medieval and Early Post-medieval Pottery in the Oxford Region', *Oxoniensia*, lix (1994), 17-217.

<sup>27</sup> V. Denham, 'The Pottery', in J.H. Shaw, M. Shaw and V. Denham, *Middle Saxon Palaces at Northampton* (1985), 46-64.

<sup>28</sup> A. Rogerson and C. Dallas, *Excavations in Thetford 1948-59 and 1973-80* (E. Anglian Archaeol. 22, 1984).

- F200: OXAC: *Cotswold-type ware*. Limestone-gritted ware, c. AD 975-1350. 613 sherds, 8994 g., MNV = 7.28.
- F202: OXAQ: *East Wiltshire ware*. Flint and limestone-tempered ware, c. mid 12th to 15th century. 21 sherds, 319 g., MNV = 0.21.
- F205: *Stamford ware*. Wheel-thrown sandy ware, often glazed, c. AD 850-1150.<sup>29</sup> 15 sherds, 214 g., MNV = 0.45.
- F300: OXY: *Medieval Oxford ware*. Sandy ware, glazed and unglazed, c. AD 1075-1350. 615 sherds, 7083 g., MNV = 4.12.
- F305: OX162: *South-East Oxfordshire ware*. Part of the 'M40' ware tradition.<sup>30</sup> Wheel-finished sandy ware with combed decoration, late 11th to late 13th century. 2 sherds, 27 g., MNV = 0.
- F352: OXAM: *Brill/Boarstall ware*. Sandy ware, glazed and unglazed, c. AD 1200-1600. 175 sherds, 3590 g., MNV = 2.81.
- F355: OXBB: *Minety-type ware*. Limestone-gritted glazed ware, probably from a Cotswolds source. Early 13th to 16th century in Oxford. 2 sherds, 37 g., MNV = 0.
- F403: *Tudor Green wares*. Green-glazed whitewares produced at several centres in the south of England, such as Farnborough Hill, Hants.<sup>31</sup> c. AD 1380-1500. 16 sherds, 235 g., MNV = 1.13.
- F404: *Cistercian ware*. Hard, smooth fabric, usually brick-red, but can be paler or browner. Vessels are inevitably covered with a thick, glossy, purplish-black or brown glaze. Range of vessel forms somewhat specialized, and usually very thin-walled (c. 2 mm.). c. AD 1470-1550. 2 sherds, 7 g., MNV = 0.
- F405: *German Stoneware*. Hard grey stoneware fabric, vessels produced at numerous Rhineland centres.<sup>32</sup> AD 1400-1700. 20 sherds, 221 g., MNV = 0.
- F408: OXAP: *Overfired Brill/Boarstall 'proto-stoneware'*. Very hard, brown or purple version of OXAM. Such vessels can be as early as the 13th century, but such pottery did not occur in pre-Dissolution contexts at Eynsham Abbey.<sup>33</sup> 12 sherds, 211 g., MNV = 0.23.
- F456: *Surrey whiteware*. Sandy-glazed whitewares. This category encompasses the Kingston, Cheam and Coarse Border ware traditions.<sup>34</sup> These sherds are all Kingston type, and can be dated broadly AD 1250-1450. 6 sherds, 116 g., MNV = 0.

Two of these fabrics are worthy of particular comment. The Thetford-type ware (F103) is the first to be noted from the *burh* of Oxford.<sup>35</sup> The material was made in very large quantities at a number of centres in East Anglia, most notably the eponymous town, but also at Ipswich and Norwich.<sup>36</sup> It was also produced at several rural kiln-sites, such as Bircham and Langhale.<sup>37</sup> One of the Lincoln College sherds appears to be a product of the Thetford kilns, as it has a sagging base, which is typical of that particular source. The other, a finger-grooved bodysherd from a jar or pitcher, appears more typical of the Ipswich industry. The former may have arrived overland, as the material is known from sites in Northamptonshire such as North Raunds, while the latter may have been traded up the Thames via London, as Ipswich-Thetford ware vessels are known in the capital.<sup>38</sup> The sherds occurred in contexts 880 and 950, the former being late Saxon in date, the latter 13th century (Phase 5), and thereby residual.

The two sherds of F305 are also worthy of comment, as they are very early, particularly the sherd from context 845, which is dated no later than the early to mid 11th century. The other sherd is from context 676, attributed to Phase 2.

<sup>29</sup> K. Kilmurry, *The Pottery Industry of Stamford, Lincs. c. AD 850-1250* (BAR Brit. Ser. 84, 1980).

<sup>30</sup> D.A. Hinton, 'M40 Ware', *Oxoniensia*, xxxviii (1973), 181-3.

<sup>31</sup> M.R. McCarthy and C.M. Brooks, *Medieval Pottery in Britain AD 900-1600* (1988), 450.

<sup>32</sup> D. Gaimster, *German Stoneware* (1997).

<sup>33</sup> Mellor, op. cit. note 26, p. 117; P.W. Blinkhorn and N. Jeffries, *Excavations at Eynsham Abbey*:

*The Post-Medieval Pottery* (forthcoming).

<sup>34</sup> J. Pearce and A. Vince, *A Dated Type-Series of London Medieval Pottery. Part 4: Surrey Whitewares* (1988).

<sup>35</sup> M. Mellor, pers. comm.

<sup>36</sup> Rogerson and Dallas, op. cit. note 28; J.G. Hurst, 'The Pottery', in D.M. Wilson (ed.), *The Archaeology of Anglo-Saxon England* (1976), 283-348; M. Atkin, B. Ayers and S. Jennings, 'Thetford-type Ware Production in Norwich', *East Anglian Archaeol.* 17 (1983), 61-97.

<sup>37</sup> A. Rogerson and A. Adams, 'A Saxo-Norman Pottery Kiln at Bircham', *East Anglian Archaeol.* 8 (1978), 33-44; K. Wade, 'Excavations at Langhale, Kirstead', *East Anglian Archaeol.* 2 (1976), 101-30.

<sup>38</sup> P.W. Blinkhorn, 'The Post-Roman Pottery', in M. Adouy, *Excavations at North Raunds, Northamptonshire* (forthcoming); A.G. Vince, 'The Saxon and Medieval Pottery of London: a review', *Medieval Archaeology*, 29 (1985), 25-93, Fig. 8.5.

*Chronology*

The range of relatively well-dated wares at the site allows the following phases, based on the known start-dates of the wares in the city of Oxford.<sup>39</sup> A few small assemblages of 19th-century material were noted, but there were no pottery groups dating from the 16th to 18th centuries. The phasing and pottery occurrence by number and weight of sherds and MNV, is shown in Table 3.

TABLE 3. CERAMIC PHASING: POTTERY OCCURRENCE PER PHASE, BY NUMBER AND WEIGHT (G.) OF SHERDS AND MNV

<i>Phase</i>	<i>Date</i>	<i>No. Sherds</i>	<i>Wt. Sherds</i>	<i>MNV</i>
1	E-M 11th C	592	3414	2.82
2	M/L11th -12th C	1037	13021	10.07
3 (a)*	13th C	306	6000	3.66
3 (b)	14-15th C	270	4094	2.64
4	15th C	102	607	1.29
TOTAL		2307	27136	20.48

\*Phase 3 has been split into Phases 3(a) and 3(b) solely for the purposes of this pottery report and reflects no clear stratigraphic division.

There is little doubt that the earliest activity on the site dates to the early to middle 11th century. The pottery from the earliest occupation horizons comprises, in the main, St. Neots ware and Cotswolds-type ware. The earliest finds of St. Neots ware from the *burh* of Oxford date to the early to mid 10th century, where it has been found in association with Oxford Shelly ware.<sup>40</sup> However, the *floruit* of St. Neots ware in the city appears to have been during the first half of the 11th century, by which time Oxford Shelly ware had generally fallen from use, and Cotswolds-type ware was becoming present in significant quantities.<sup>41</sup>

The late Saxon assemblages from this site, which mainly comprise St. Neots ware, generally lack Oxford Shelly ware, but often contain sherds of Cotswolds-type ware, thus suggesting that the occupation dates to the first half of the 11th century; the St. Neots ware itself supports this. Denham identified four sub-groups within the tradition, one of which, T1(2), was datable in Northampton to AD 1000-1200.<sup>42</sup> The majority of the assemblage from this site appears to be of that type, which, if the chronology is the same, suggests that the earliest occupation at this site does not date to before AD 1000.

The large quantity of later 11th- to 12th-century material is noteworthy since the site lies within the area of collegiate buildings that grew in the early medieval period. This period certainly saw the highest rate of pottery deposition during the lifetime of the site. The small amount of 15th-century material present agrees with the documented date of c. 1437 for the construction of the Kitchen and Hall. These buildings would have sealed the area uncovered by the excavation trenches, and thus prevented pottery deposition from that date.

*Fragmentation Analysis*

The fragmentation data in Tables 4 and 5 show that, generally, the pottery assemblage is not particularly fragmented.<sup>43</sup>

Both sherd and rim fragmentation is comparable with the contemporary assemblages at the Sackler Library, Oxford.<sup>44</sup> The apparent increase in the mean sherd weight for St. Neots ware during Phases 2 and 3(a)/(b) is likely to be due to the fact that T1(2) vessels, particularly the jars, were on the whole larger during

<sup>39</sup> Mellor, *op. cit.* note 26.

<sup>40</sup> *Ibid.* 57.

<sup>41</sup> *Ibid.* 41, 51.

<sup>42</sup> Denham, *op. cit.* note 27.

<sup>43</sup> Pottery recovered from soil samples was excluded due to the differential recovery method.

<sup>44</sup> P.W. Blinkhorn, 'Pottery', in D. Poore and D.R.P. Wilkinson, *Beaumont Palace and the White Friars: Excavations at the Sackler Library, Beaumont Street, Oxford* (2001), 37-45.

the later life of the industry, and that storage jars were probably a late introduction. This is borne out by the rim fragmentation data, which shows little change over the same period. Generally, larger vessels break into heavier sherds, but rim fragmentation, in terms of the percentage complete of the sherds, appears largely constant, irrespective of the size of the original vessel. This also suggests that most of the late Saxon assemblage is the product of secondary deposition; as a large portion of the assemblage of that date was stratified in constructional features of a building, this is only to be expected.

The high mean sherd weight of OXAM during Phase 4 is due to the presence of a large sherd from a dripping dish, but generally the small assemblage of this date appears to be of a more primary nature, i.e. it was subject to very little redeposition after breakage and disposal.

TABLE 4. MEAN SHERD WEIGHT PER PHASE (MAJOR FABRICS)

<i>Phase</i>	<i>Date</i>	<i>OXR</i>	<i>OXAC</i>	<i>OXY</i>	<i>OXAM</i>
1	E-M11th C	9.1	17.0	—	—
2	M/L11th-12thC	14.5	14.7	12.5	—
3 (a)	13th C	13.0	15.8	14.1	29.7
3 (b)	14-15th C	14.3	17.7	12.9	15.7
4	15th C	0	12.3	15.2	38.0

TABLE 5. MEAN RIM FRAGMENTATION PER PHASE (FRAGMENTATION EXPRESSED AS THE PERCENTAGE COMPLETE, MAJOR FABRICS)

<i>Phase</i>	<i>Date</i>	<i>OXR</i>	<i>OXAC</i>	<i>OXY</i>	<i>OXAM</i>
1	E-M11th C	11.1	8.3	—	—
2	M/L11th-12th C	10.4	7.2	8.1	—
3 (a)	13th C	8.8	7.8	7.0	14.0
3 (b)	14-15th C	9.0	7.1	7.9	13.6
4	15th C	0	5.3	7.5	0

#### *Reliability of Deposits*

Comparison of the site matrices with the pottery groups indicates that the pottery chronology is largely accurate, but some contexts which have been dated by ceramics to Phases 1 or 2 are stratigraphically later. This is due to the fact that all the assemblages in question are small in size, and lacking the wares which are the chronological markers for the phases in question.

The data in Table 6 show that levels of redeposition were variable. The presence of relatively large quantities of St. Neots ware in Phase 2 contexts is not wholly due to residuality; as noted earlier, much of the assemblage comprises sub-group T1(2), which was current in Northampton up to the end of the 12th century, and possibly beyond it.

#### *Cross-fits*

All the stratigraphic sequences from the site were checked for cross-fits, but relatively few were found, suggesting that in the main, most deposits were the result of separate actions, or from unrelated sources. Those cross-fits which were noted were as follows:

556=562 (OXAC small jar (Fig. 20.8)).  
1017=1028 (F408).  
189=192 (OXAM)

Non-joining sherds from a highly decorated OXY pitcher were noted in contexts 775 and 826. Sherds from the same OXAM vessels were noted in 188, 189, 191 and 192.

TABLE 6. POTTERY OCCURRENCE PER CERAMIC PHASE BY FABRIC TYPE (OCCURRENCE EXPRESSED AS A PERCENTAGE OF THE MNV PER PHASE)

<i>Fabric</i>	<i>Phase 1</i>	<i>Phase 2</i>	<i>Phase 3(a)</i>	<i>Phase 3(b)</i>	<i>Phase 4</i>
F100	86.9%	25.4	16.7	3.4	
F102		2.5			
F200	8.9	41.0	55.5	26.9	12.4
F202		1.4		2.7	
F205	4.3	1.5	4.9		
F300		2.84	11.5	23.9	17.8
F352		28.2	11.5	25.8	
F403				8.7	69.8
F408				8.7	
PHASE TOTAL	2.82	10.07	3.66	2.64	1.29

TABLE 7. VESSEL OCCURRENCE PER PHASE (OCCURRENCE EXPRESSED AS A PERCENTAGE OF THE MNV PER PHASE)

<i>Form</i>	<i>Phase 1</i>	<i>Phase 2</i>	<i>Phase 3(a)</i>	<i>Phase 3(b)</i>	<i>Phase 4</i>
Jars	85.8%	85.1	84.2	49.2	25.6
Bowls	9.9	10.9	7.9	11.0	0
Jugs	4.3	4.0	5.2	39.8	0
Storage Jars	0	0	2.7	0	0
Cups	0	0	0	0	74.4
Others*	lamp	lamp	curfew x2	bottle x2, curfew	dripping dish
TOTAL MNV	2.82	10.07	3.66	2.64	1.29

\* Present as feature bodysherds or non-symmetrical rims

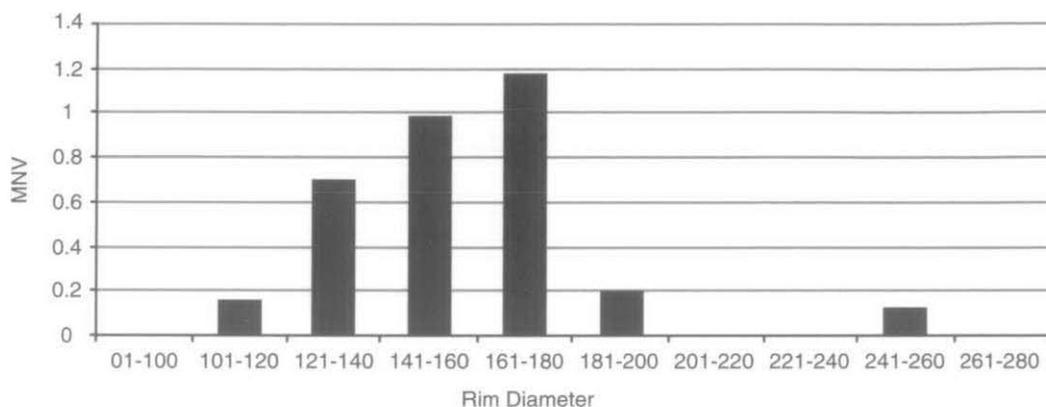
#### *Vessel Types*

The data in Table 7 show a relatively normal pattern for the medieval period, although, as at the Sackler Library, Oxford, the proportion of jugs in the Phase 3 assemblages appears rather low. Previous work has shown that T1(2) St. Neots ware jar assemblages tend to comprise a large number of small vessels, with a few larger ones.<sup>45</sup> Other recent research has also shown that there is a reasonable correlation between rim diameter and capacity for early medieval pottery.<sup>46</sup> Thus, the rim diameters of vessels are a reflection of the original capacity of the complete vessel, and summation of MNV by rim diameter can give a good idea of the range of vessel sizes that were in use at a site. The data in Table 8 show that the Lincoln College assemblage shows a fairly typical pattern for St. Neots ware jars: a broad spread of small to medium-sized vessels, with a small number of large pots.

<sup>45</sup> Denham, *op. cit.* note 27.

<sup>46</sup> P.W. Blinkhorn, 'The Trials of Being a Utensil: Vessel use at the medieval hamlet of West Cotton, Northamptonshire', *Medieval Ceramics* (forthcoming).

TABLE 8. RIM DIAMETER OCCURENCE BY MNV, ST. NEOTS WARE JARS



The later material contains a number of vessels which would be expected at a site associated with the preparation and consumption of food. The 'Tudor Green' drinking cup (Fig. 21.15) is a typical tableware of the period, and bases from two other similar vessels were noted in contexts 545 and 1028. The two dripping dish fragments (Figs. 21.12-13), which would have been used in the kitchen to catch the fat from spit-roasting meat, are also worthy of note.

#### *The Assemblage in its Regional Context*

The Lincoln College assemblage is an important and useful addition to the small, but growing number of sites from the eastern area of the *burh* of Oxford, and supports previous findings that this area of the town was not developed until around the beginning of the 11th century.<sup>47</sup> Certainly, the general pattern of late Saxon pottery occurrence at this site is similar to that from the excavations at Logic Lane in the eastern area of the medieval town.<sup>48</sup> There the late Saxon assemblage was dominated by St. Neots ware and Cotswolds-type ware, with very little Late Saxon Oxford ware occurring. By comparison, sites in the western area of the town, such as New Inn Court, suggest earlier settlement, with Late Saxon Oxford ware being relatively plentiful, and St. Neots ware scarce.<sup>49</sup> As mentioned above, the sherds of Thetford-type ware are the first to be noted from the city, and are a rare find this far to the west of the production centre(s).

The late Saxon and Saxo-Norman assemblage is typical of a domestic settlement of the period in the region, comprising mainly jars and bowls, with a few fragments of jugs and lamps. Some of the jars were scorched and heavily sooted, with a few vessels exhibiting limescaling and charred internal residues. The Oxford Shelly ware bowl (Fig. 20.4) is worthy of comment. The vessel, which appears to be a rather crude copy of contemporary St. Neots ware types, is unique.<sup>50</sup> Mellor has noted that the appearance of St. Neots ware in Oxford in the 10th century coincided with the introduction by the Oxford Shelly ware potters of small jars and limited roller stamping.<sup>51</sup> The fact that small jars, along with inturned rim bowls, were the mainstay of the earlier St. Neots ware industry, and also that limited roller-stamping was also utilised, led her to suggest that the Oxford potters were being influenced by the 'new' pottery. The inturned rim OXB bowl from Lincoln College can only support this idea.

<sup>47</sup> Mellor, *op. cit.* note 26, pp. 57-60.

<sup>48</sup> F. Radcliffe, 'Excavations at Logic Lane, Oxford: The prehistoric and early medieval finds', *Oxoniensia*, xxvi/xxvii (1963), 38-64.

<sup>49</sup> C. Halpin, 'Late Saxon Evidence and Excavation of Hinxey Hall, Queen Street, Oxford', *Oxoniensia*, xlviii (1983), 41-69; M. Mellor, 'Pottery', in Halpin, *op. cit.*, p. 61.

<sup>50</sup> M. Mellor, *pers. comm.*

<sup>51</sup> Mellor, *op. cit.* note 26, p. 38 and *pers. comm.*

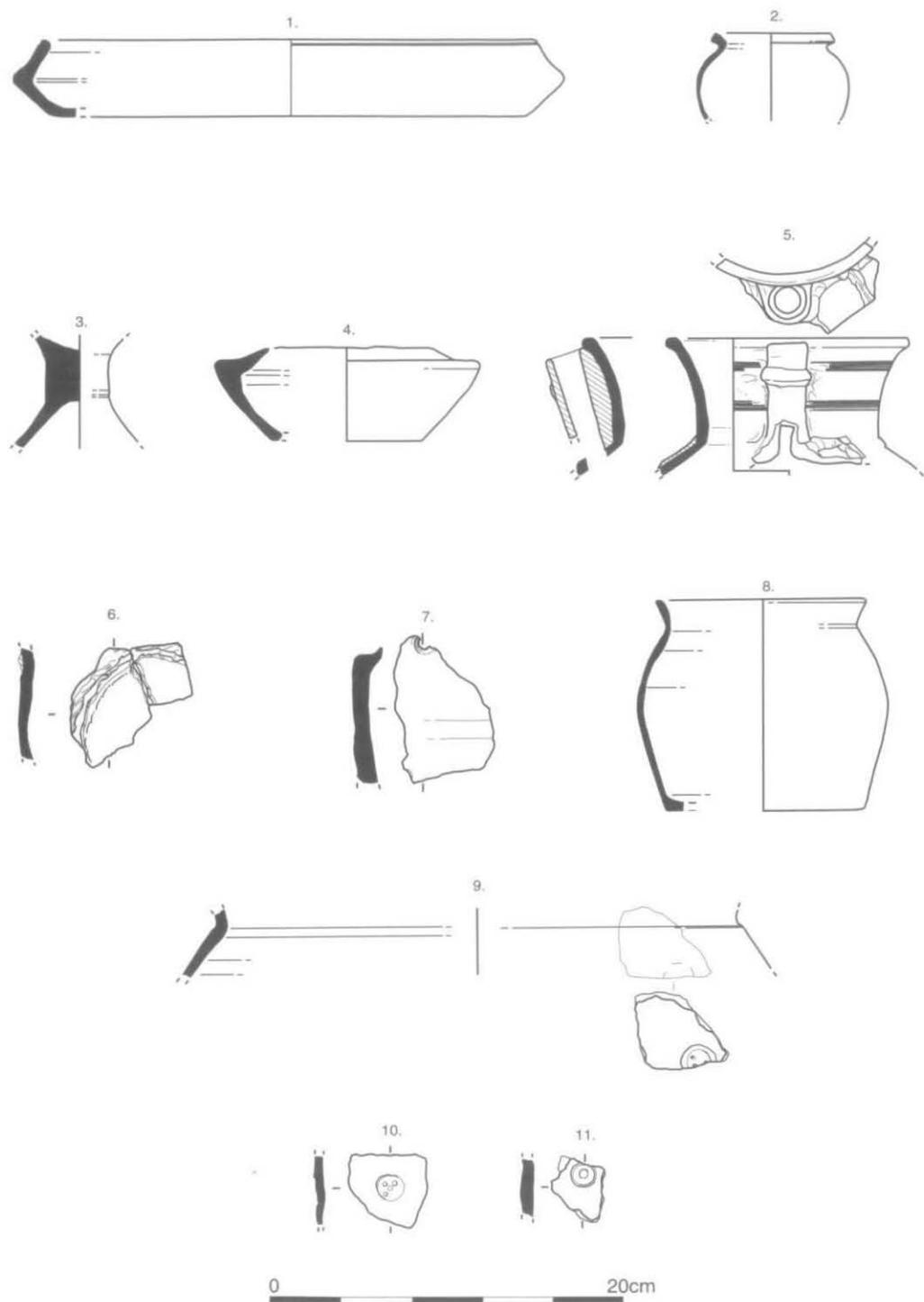
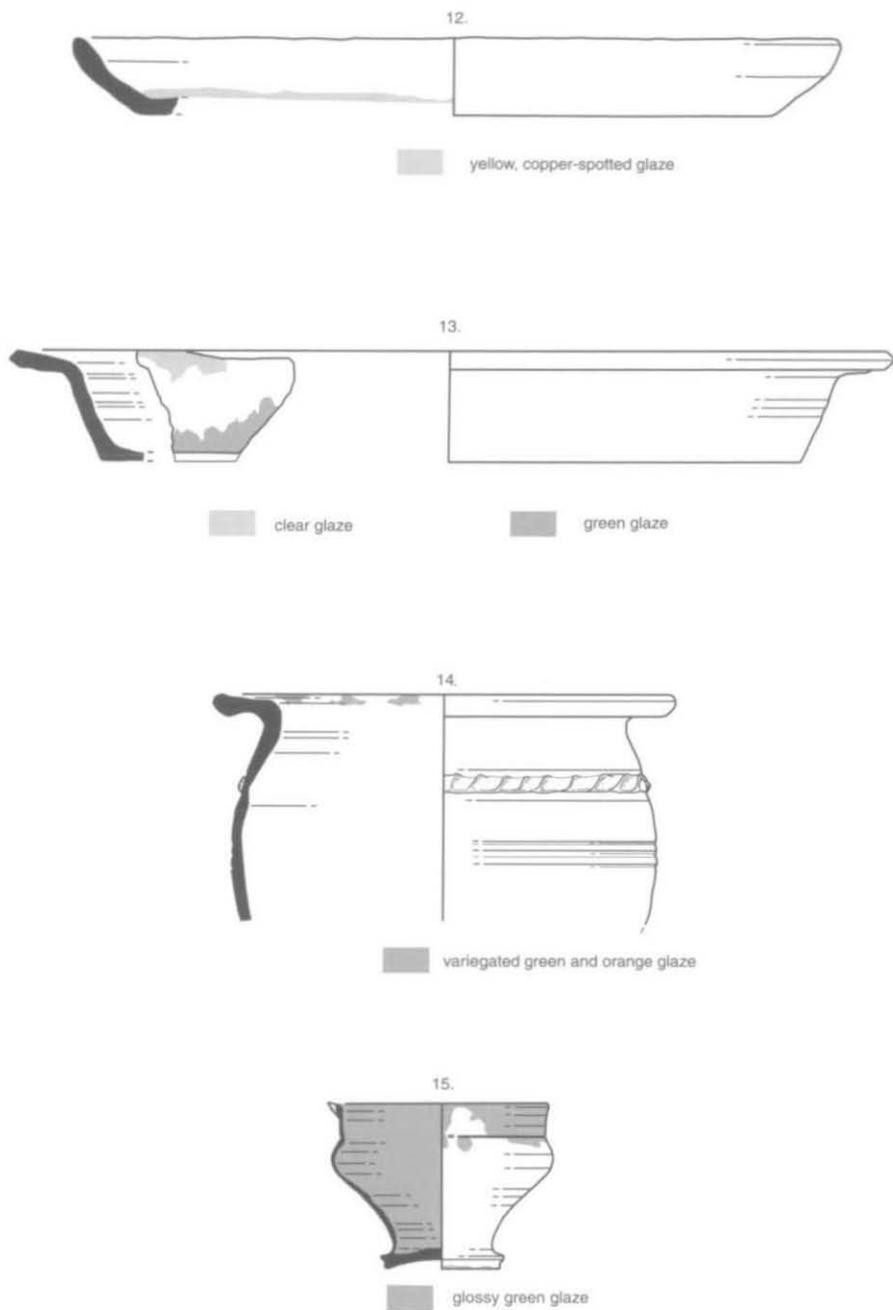


Fig. 20. Pottery (nos. 1-11).



0 20cm

Fig. 21. Pottery (nos. 12-15).

The medieval assemblage appears typical of higher status sites in the region, particularly the vessels associated with the preparation of food, as might be expected of a college site. Dripping dishes, for example, tend to be more common at sites of higher status, such as Eynsham Abbey, which produced fragments of at least eleven such vessels. This suggests that the fat was collected for use in the preparation of sauces etc. for the *haute cuisine* of the late medieval high table, but the rate of consumption of such vessels at sites like this and Eynsham Abbey is probably also a reflection of mass-catering and far more frequent formal dining, and a more regular consumption of roasted meat, than in poorer households.

As noted earlier, the representation of jug sherds in the later medieval assemblage appears rather low, as was the case at the Sackler Library site. Again, this may be a result of high site status, with metal vessels having been used at the table in preference to cheaper pottery examples.

*Illustrated pottery (Figs. 20-21)*

- 20.1: OXR. Full profile of shallow inturned-rim bowl. Context 748.  
 20.2: OXR. Upper part of jar. Sherd very burnt, with even covering of a thick black residue on the inner surface, sooting on the outer. Some limescaling on the lowest part of the inner surface. Context 587.  
 20.3: OXR. Stem from pedestal lamp. Context 561.  
 20.4: OXB. Full profile of inturned-rim bowl. Context 1045.  
 20.5: OXY. Rim and tubular spout from jug. Thick, dull olive-green glaze on outer surface. Context 598.  
 20.6: OXY. Bodysherd with applied strips from a jar. Context 775.  
 20.7: OXAC. Fragment of curfew. Smoke-blackened inner surface and vent-holes. Context 545.  
 20.8: OXAC. Small jar. Contexts 556 and 562.  
 20.9: OXAC. Stamped sherd. Context 220.  
 20.10: OXAC. Stamped sherd. Context 737.  
 20.11: OXAC. Stamped sherd. Context 704.  
 21.12: OXAM. Dripping dish. Yellow, copper-spotted glaze on the internal surface of the base. Some scorching on the outer surface. Context 521.  
 21.13: OXAM. Dripping dish. Glossy green, copper-spotted glaze on the inner surface, some smoke blackening of the outer surface of the rim. Context 534.  
 21.14: OXBB. Rimsherd from storage vessel. Small pools of variegated green and orange glaze on the upper surface of the rim. Unstratified.  
 21.15: 'Tudor Green'. Drinking cup. Rich, glossy green glaze over the entire inner surface and the outer surface of the rim. Very similar to late 15th-century kiln examples. Context 526.

## THE FIRED CLAY by KAYT BROWN

The excavations produced 146 fragments (13,888 g.) of burnt and fired clay. Of this material only two fragments, of a loomweight and a crucible, were of deliberately fired clay objects. The remainder of the material comprised burnt clay, produced through accidental burning. The majority of this material could be identified as daub (13,364 g.); the rest consisted of amorphous fragments of indeterminate function. Most of the burnt clay was retrieved from Phase 1 and 2 deposits and was in a relatively good condition with large fragments surviving. All burnt clay and the loomweight fragment consisted of the same natural sandy clay with occasional large pebbles; similar to the fabric identified for the 11th-century daub from St. Ebbe's.<sup>52</sup>

A large proportion of the daub at Lincoln College was retrieved from two contexts: Phase 2 burnt layers 637 and 852. These contexts produced 11,483 g., and probably represent collapsed walls. The daub displayed evidence of burning, a roughly smoothed surface, including possible palm impressions, and was 30 to 40 mm. thick. Also visible were impressions from withies, which would have formed the wattle frame onto which the clay would have been placed; these measured between 10 mm. and 20 mm. in diameter (Fig. 22.1, context 737). This material is again very similar to that recovered from other 10th- and 11th-century deposits at St. Ebbe's and Cornmarket.<sup>53</sup> In addition, a large amount of daub was recovered from pit fill 837 (Phase 1 pit 834) as well as from Phase 2 layers 758 and 791.

<sup>52</sup> J. Munby, 'Daub', in T.G. Hassall, C.E. Halpin and M. Mellor, 'Excavations in St. Ebbe's, Oxford 1967-76: Part I: Late Saxon and medieval domestic occupation and tenements and the medieval Greyfriars', *Oxoniensia*, liv (1989), 247.

<sup>53</sup> *Ibid.*; D. Sturdy and J. Munby, 'Early Domestic Sites in Oxford: Excavations in Cornmarket and Queen Street 1959-62', *Oxoniensia*, l (1985), 67.

TABLE 9. FIRED AND BURNT CLAY PER PHASE AND TYPE BY WEIGHT (G.)

<i>Type</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>TOTAL</i>
Amorphous	18 g.		19		13	50
Crucible					25	25
Daub	1244	12323				13567
Loomweight				220		220
Vitrified clay lining		26				26
TOTAL	1262	12349	19	0	258	13888

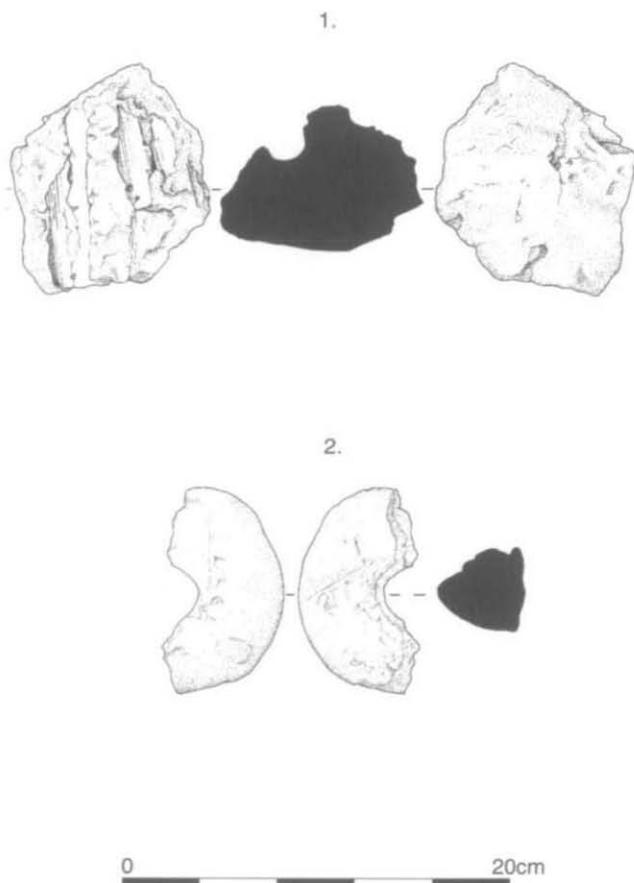


Fig. 22. Fired clay: Daub showing wattle impressions, and loomweight.

The loomweight (SF 106) was redeposited in Phase 4 layer 737; it comprised approximately 50% and measured 110 mm. in diameter with a 25 mm. diameter central perforation (Fig. 22.2). Loomweights provide evidence of textile production on a warp-weighted loom and are a common find on urban Saxon sites, for example in Oxford at the Clarendon Hotel and in Queen Street.<sup>54</sup> Following Hurst's classification, bun-shaped loomweights are generally attributed to the mid to late Saxon period and are characterised by a small central hole.<sup>55</sup> This type of loomweight ceased to be used after the introduction of the horizontal treadle loom in the 12th century.<sup>56</sup>

The small crucible fragment recovered from the lower fill (677 – Phase 5) of a construction cut provided evidence for small-scale metalworking. In addition, a small fragment of vitrified clay lining from pit fill 704 (Phase 2) is likely to be either hearth or oven lining.

## THE METAL AND WORKED BONE by LEIGH ALLEN

A total of 128 metal objects and two worked bone objects were recovered from the excavations. A large proportion of the iron work consisted of nails and other structural objects such as hasps, split pins and staples. These objects together with the miscellaneous (unidentifiable) fragments have not been reported on here, but a full list has been deposited with the archive. The remaining assemblage of 27 objects comprises objects of silver, copper alloy, iron and bone. There are objects from each of the six phases, but the majority were recovered from refuse pits 1051 (Phase 4) and 1016 (Phase 5).

*Phase 1:* The earliest finds from the site came from the fills of pit 834. The finds comprise a silver coin (context 837) and an arm from a horseshoe from context 838. The coin is an Edgar Reform Small Cross, minted at Tamworth, and the moneyer is Deowulf (Fig. 23). Edgar's Reform issues date between 972/3 and 975. This particular combination of type, mint and moneyer has not previously been recorded; this example therefore fills the gap.<sup>57</sup> The horseshoe arm has a lobate profile and a calkin at the tip. The three circular nail holes are set within lozenge-shaped countersinkings. This type of horseshoe was hardly known before the Conquest, but was common thereafter; the type predominates throughout the 12th century, but was replaced by a heavier, more developed type of shoe in the 13th century.<sup>58</sup>

*Phase 2:* An iron whittle-tang knife (SF 125), from hearth 788 in Building 3, has a triangular blade and a centrally placed tang. At Winchester knives of this type were recovered from contexts dating from the 10th century to the late medieval period.<sup>59</sup> In London knives with pronounced triangular blades date from the late 13th century onwards.

A bone side plate from a simple double-sided comb was recovered from context 786, a fill of pit 782 (Fig. 24.4). The narrow rectangular strip has been manufactured from a cattle rib. The back of the plate is flat and the outer surface slightly convex. The ends are angled inwards giving a trapezoidal outline reflecting the general trapezoidal form of these combs with one set of teeth being shorter than the other. There is a circular hole at each end of the plate where an iron rivet would have been inserted to attach the plate to the comb. The plate has nicks cut into both long edges; these are a result of cutting or re-cutting the teeth after the comb has been assembled. The size and spacing of the cuts indicate narrow teeth on one side and wide teeth on the other. This type of bone plate was generally used with horn combs to keep them flat and prevent warping. At Winchester they are believed to have appeared alongside the double-sided composite combs of bone and antler as early as the 9th or 10th century and during the course of the 11th to 12th centuries effectively supplanted them.<sup>60</sup>

Four objects were recovered from pits 770 and 721. The fills of pit 770 produced a barrel padlock, a copper alloy point and an iron horseshoe nail. The barrel padlock (SF 112) came from primary fill 775 and is in very poor condition (Fig. 24.3). Fragments of the case and the spine survive together with one end plate

<sup>54</sup> E.M. Jope and W.A. Pantin, 'The Clarendon Hotel, Oxford', *Oxoniensia*, xxiii (1958), 73; Sturdy and Munby, op. cit. note 53, p. 87.

<sup>55</sup> J.G. Hurst, 'Middle Saxon Pottery', in G.C. Dunning, J.G. Hurst, J.N.L. Myres and F. Tischler, 'Anglo-Saxon Pottery: A Symposium', *Medieval Archaeology*, 3 (1959), 13-31.

<sup>56</sup> D. Hooke, *The Landscape of Anglo-Saxon England* (1998), 207.

<sup>57</sup> Identification of the coins by N. Mayhew, Ashmolean Museum, Oxford.

<sup>58</sup> J. Clark, 'Horseshoes', in J. Clark (ed.), *Medieval Finds from Excavations in London: 5. The Medieval Horse and its Equipment c. 1150 – c. 1450* (1995), 96.

<sup>59</sup> I.H. Goodall, 'Knives', in M. Biddle, *Object and Economy in Medieval Winchester* (Winchester Studies 7.ii, 1990), 847-9.

<sup>60</sup> M. Biddle, 'Combs of horn and bone', in Biddle, op. cit. note 59, pp. 678-90, Fig. 187.



Fig. 23. Edgar Reform Small Cross silver coin: obverse and reverse.

and the remains of one of the strengthening rods which originally would have run the length of the case. There is evidence on the x-ray of plating and also several sections of decorative applied wavy strips on the case. This type of padlock would have been used (according to size) for securing chests, caskets, doors and shutters. It is a pre-Conquest form that probably did not continue in use long after the 12th century. Examples of this form have been recovered from Winchester.<sup>61</sup> The broken copper alloy point recovered from context 777 is either from a needle, pin or brooch pin. The horseshoe nail (SF 113) from context 774 is of the fiddle key form; it has a semicircular head which in profile is the same thickness as the shank. This type of nail was designed to sit in the countersunk holes in horseshoes with lobate profiles (see above). Context 725 (pit 721) produced a small cross pane hammer. This hammer type was used by farriers to drive nails into horseshoes or by blacksmiths to spread iron during the later lighter stages of forging.

A copper alloy finger ring (SF 121) was recovered from context 761 (Fig. 24.1). The ring is penannular with an oval section, only one terminal remains and it tapers to a point. A similar example was recovered from an 11th-century context at St. Ebbe's, Oxford.<sup>62</sup>

*Phase 3:* Layer 589 contained an iron whittle-tang knife with an angled back and a worn blade (Fig. 24.2). This S-shape is characteristic of knives dating to the Saxon period. In the SW. corner of the trench was a build up of deposits, one of which contained an iron hasp (context 698). Context 695, dumped over these deposits, contained a horseshoe arm with a lobate profile and a calkin at the tip. The three circular nail holes are set within lozenge shaped countersinkings (see above). Another horseshoe arm of this type was recovered from context 595. Context 698 also produced a fragment of sheep metatarsal with a circular perforation through the surviving proximal end.

*Phase 4:* The fill of pit 1050 (1051) contained a buckle frame, three copper pins and three lace tags. The copper alloy buckle frame is of double oval form with an iron pin. There are four decorative knobs on the outside of the frame and the central bar extends beyond the edge of the frame. A similar example from Great Linford was recovered from a late 16th- to 17th-century context.<sup>63</sup> The pins with wire wound heads and the lace tags are probably of the same date. These finds must be intrusive and probably contaminated the context when the beaten earth floors were replaced. The only other object recovered from this phase was a silver coin of Edward II dated 1307-1327 from context 535.

*Phase 5:* In the centre of the Kitchen was an oval pit 1016, the upper fills of which produced an iron knife and a fragment of perforated copper alloy sheet (SF 124). The knife has a whittle tang with a triangular blade and a centrally placed tang. The tip of the blade is missing and the blade edge is very corroded. The fragment of perforated sheet has a gently curving edge and regularly spaced perforations and could come from a strainer or skimmer. Skimmers were used to remove items from stew pots and superseded flesh hooks in the 14th century.<sup>64</sup>

The other Phase 5 context to produce finds was context 1018, a substantial layer of domestic refuse containing three drop handles, a fragment of vessel rim, a pin, a lace tag and a possible pastry cutter (Fig. 24.5, context 117). The three drop handles are all of the same basic form and are probably from chafing dishes. SF 114 and 116 are looped handles with squared-off ends and a moulded rivet attachment (Fig. 24.7). SF 115 is heart-shaped with a similar moulded rivet for attachment (Fig. 24.6). Similar examples from Southampton were recovered from late medieval and post-medieval contexts.<sup>65</sup> The lace tag and the wire wound pin are probably of the same date.

*Phase 6:* The latest deposit in the Kitchen, context 1000, contained a large iron spoon or ladle. The long handle has an expanded terminal which hooks over backwards; the bowl is damaged.

<sup>61</sup> I.H. Goodall, 'Locks and keys', in Biddle, op. cit. note 59, pp. 1001-1009, Fig. 311, nos. 3642 and 3647.

<sup>62</sup> A.R. Goodall, 'Copper alloy objects', in Hassall, Halpin and Mellor, op. cit. note 52, pp. 223-4, Fig. 60, no. 6.

<sup>63</sup> R.J. Zeepvat, 'The Finds', in D.C. Maynard and R.J. Zeepvat, *Excavations at Great Linford, 1974-80* (1991), 142-3, Fig. 53, no. 39.

<sup>64</sup> G. Egan, *Medieval Finds from Excavations in London: 6. The Medieval Household. Daily Living c. 1150 - c. 1450* (1998), 155-8, Figs. 126-7.

<sup>65</sup> I.H. Goodall, 'Copper Alloy Loop Handles', in S. Margeson, *Norwich Households: The Medieval and Post-Medieval Finds from Norwich Survey Excavations 1971-1978* (1993), 78-80, Fig. 45, no. 491; Y. Harvey, 'The Small Finds Catalogue', in C. Platt and R. Coleman-Smith, *Excavations in Medieval Southampton 1953-1969, vol. 2: The Finds* (1975), 265-7, Fig. 245, no. 1864.

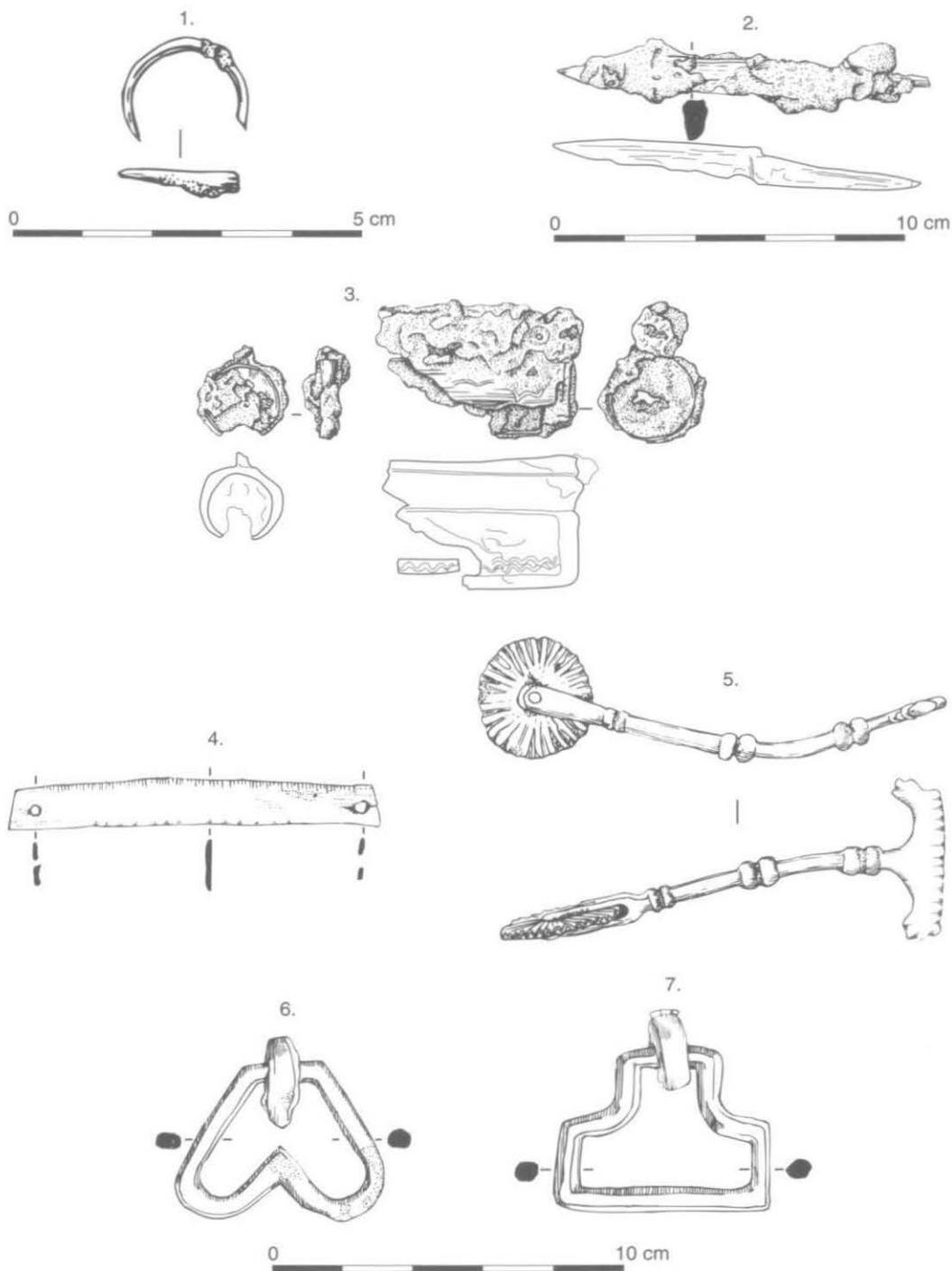


Fig. 24. Objects of metal and worked bone: finger ring (1), knife (2), barrel padlock (3), comb (4), pastry cutter (5), drop handles (6-7).

## THE GLASS by RACHEL TYSON

A total of 51 fragments of glass were recovered from the excavations, and details of the assemblage have been deposited with the archive. All of the glass is English. The majority of the assemblage (42 fragments) consisted of post-medieval bottles. There were also fragments from two possible medieval vessels, four fragments of window glass, two of which were modern, and two beads of uncertain date.

*Medieval glass*

Two window glass fragments, a pale greenish and a heavily weathered fragment, both had indications of grozed edges. These show at least one right-angled corner on each of the fragments, indicating square or rectangular quarry panes. They were found in Phase 4 contexts (1022 and 1050) and probably date to the 15th century, possibly as early as the 14th century. The more efficient diamond cutter largely replaced the grozing iron, which 'nibbled' the edges of the quarry to the correct shape, in the course of the 16th century.<sup>66</sup>

Medieval vessel fragments include a kicked base (context 534, Phase 4), which may come from one of a number of vessel types, dating to anywhere between the 14th and 17th century. The context suggests a 14th- or 15th-century date here. The rim and base of a urinal (context 734, Phase 5; Fig. 25.1) again has a wide date range; the urinal was introduced in the 13th century, but was in use in the same form as late as the 17th century.<sup>67</sup> Although found in a Phase 5 context, it is possible that it is residual. These vessels were used to practise uroscopy, the main method of medical diagnosis in this period from the analysis of the urine colour and consistency. Medical practitioners such as William Vaughan (in 1602) recommended 'urine gazing' every morning, 'that by looking on it, you may ghesse somewhat the state of your body'.<sup>68</sup> In the medieval period the use of urinals was restricted to higher-status sites including royal castles (e.g. Ludgershall, Wiltshire), wealthy urban sites (e.g. Cuckoo Lane, Southampton), and monastic sites (e.g. Eynsham Abbey, Oxon.).<sup>69</sup> They became more widespread amongst the population from the late 15th century.<sup>70</sup>

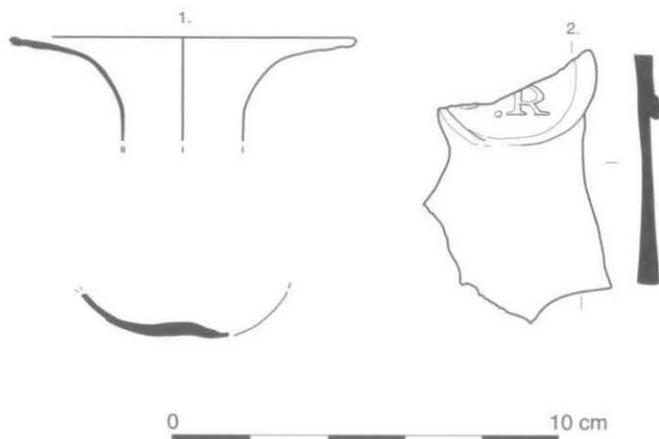


Fig. 25. Glass vessels: Urinal rim and base, and wine bottle seal.

<sup>66</sup> S. Brown, *Stained Glass. An Illustrated History* (1992), 24.

<sup>67</sup> R. Tyson, *Medieval Glass Vessels found in England c. AD 1200-1500* (CBA Res. Rep. 121, 2000), 149.

<sup>68</sup> *Ibid.* 150.

<sup>69</sup> *Ibid.* 149-67.

<sup>70</sup> *Ibid.* 149-67 and 27, table 1.

*Post-medieval glass*

A fragment from a wine bottle (context 153, Phase 6; Fig. 25.2) retained the lower section of the seal, with part of the letters 'C.R.' surviving. These stand for 'Common Room', commonly seen on seals of all the Oxford colleges;<sup>71</sup> the location of this one strongly suggests that it is a Lincoln College seal. The wine cellar accounts for All Souls College include a note in 1760 stating that 'no Wine shall be carried out of All Souls College in ye College Bottles upon any Account whatsoever',<sup>72</sup> and it is likely that other colleges had similar rules. Unfortunately, records of wine and bottles from Lincoln College are limited.<sup>73</sup> Nine Lincoln College seals are known in total, the oldest of which could date to c. 1770;<sup>74</sup> none has a lower line identical to the example here. The Oxford colleges started to establish their own wine cellars from c. 1750 and therefore nearly all bottles with a college seal date to after 1750, although an Exeter College seal has a date as early as 1744.<sup>75</sup> Prior to that, wine was supplied from taverns, in bottles often with the tavern's personal seal. The body fragment confirms that it is from a cylindrical bottle type that was in production up to c. 1810. The style and irregular shape suggest that it is pre-1800.

## THE CERAMIC BUILDING MATERIAL by DUNCAN H. BROWN

A total of 344 fragments of building material, weighing 22,371 g., were recovered from 63 contexts. The finds from each context were sorted by fabric type, form type, glaze colour and distribution, and decorative technique and motif, then quantified by weight and fragment count. The database has been deposited with the archive. Twenty-four different fabrics were identified and are described below, by form.

*Flat roof tile*

Flat roof tile comprised the bulk of this assemblage. Eight different roof tile fabrics were identified all of which are probably medieval in date and may be considered local in origin.

*Fabric 1:* 2367 g., 48 fragments. A fine, hard, dense sandy fabric with inclusions of sparse to moderate, fine and medium angular quartz and coarse to fine red iron. Surfaces are usually pink with a grey core. No complete dimensions survive but the presence of a few circular peg-holes indicates the purpose of these tiles. Only two fragments bear traces of a greenish-clear lead glaze. Found in all phases, except Phase 1, and a 13th- or 14th-century date is likely.

*Fabric 2:* 4441 g., 71 fragments. A common fabric in the assemblage and similar to Fabric 1, although the matrix contains slightly more sand. Inclusions of sparse fine quartz, red iron and white calcareous material. Fragments are prone to laminate when fractured. Colours range from dark red to red-brown with a grey core. Several tiles are glazed, with colours ranging from dark green to clear. Three fragments have circular peg-holes. Found in all phases, except Phase 1, and a 13th- or 14th-century date is likely.

*Fabric 3:* 8231 g., 147 fragments. The most common tile fabric in the assemblage. The sandy matrix contains abundant fine and medium rounded and sub-angular quartz with red iron. Surfaces are dark red with a dark grey core. There are several examples of circular peg holes, and in three instances the hole has not been pushed right through, which has resulted in a circular pad of clay stuck to the underside of the tile. One fragment has a capital letter 'A' scratched into the surface after firing. The lead glaze, which occurs on parts of upper surfaces, ranges in colour from dark green to clear. Found in all phases, except Phase 1, and a 13th- or 14th-century date is likely.

*Fabric 4:* 96 g., 2 fragments. A sandy fabric with abundant, well-sorted, medium, rounded and sub-angular quartz and moderate red iron; fired red throughout. Both fragments have circular peg-holes and neither has glaze. The holes are wider in diameter than those in the other peg-tiles and one fragment has a blackened

<sup>71</sup> F. Banks, *Wine Drinking in Oxford 1640-1850. A Story Revealed by Tavern, Inn, College and Other Bottles* (BAR Brit. Ser. 257, 1997).

<sup>72</sup> J. Haslam, 'Oxford Taverns and the Cellars of All Souls in the 17th and 18th Centuries', *Oxoniensia*, xxxiv (1969), 71.

<sup>73</sup> Banks, *op. cit.* note 71.

<sup>74</sup> *Ibid.* 133-9.

<sup>75</sup> Haslam, *op. cit.* note 72.

interior, which may suggest that this was from a louvre, although the absence of glaze might counter this. One sherd came from a Phase 4 context (1025), the other from Phase 5 (81); both finds are likely to be residual and an earlier, medieval, date is most probable.

*Fabric 8:* 20 g., 1 fragment. A fine sandy matrix with abundant, ill-sorted, sub-angular and rounded, grey, white and clear quartz; there is also coarse to fine red iron and sparse, medium-sized chert. Pink surfaces and grey core. This fabric is quite unlike any other in the assemblage and might be considered non-local in origin. This sherd was found in context 189 (Phase 3), suggesting a medieval date, and the 13th or 14th centuries are likely, in accordance with the date of much of the other roof-tile.

*Fabric 12:* 999 g., 22 fragments. A fine sandy matrix with inclusions of moderate, ill-sorted, angular and sub-angular quartz; also red iron and white calcareous inclusions. This fabric is similar to fabric 2. Surfaces are pink with a pale grey core. There are no fragments with peg-holes, but the thickness suggests that this fabric was made into flat roof tiles. Some fragments have a partial green or clear glaze. Found in Phases 3, 4, 5 and 6 and a medieval date is likely.

*Fabric 17:* 228 g., 1 fragment. A hard-fired, fine fabric with sparse to medium, sub-angular quartz, ill-sorted red iron, red clay pellets and occasional white, calcareous pieces. It may be related to fabric 2. The single fragment has splashes of clear glaze and a raised strip of clay, a sort of cordon, both on the upper surface. This is an unusual tile in this assemblage. It appears well-made and well-fired. It occurs in Phase 3 (context 631), which does no more than suggest a medieval date; the technique and hardness suggest a late 14th- or 15th-century date.

#### *Ridge Tile*

Three ridge tile fabrics were identified. All of them are probably medieval in date, most likely 13th to 14th century and of a local origin.

*Fabric 22:* 161g., 2 fragments. A sandy fabric with abundant, well-sorted, rounded, clear quartz; also sparse red iron. Surfaces may be red to grey with a grey core. Both sherds have a green glaze on the upper surface. There is one ridge fragment, but no evidence for a crest. Both sherds occur in Phase 5 contexts, but a date prior to the 16th century is suggested.

*Fabric 23:* 335 g., 2 fragments. This coarse fabric has a fine clay matrix with inclusions of abundant, ill-sorted quartz, chert, red iron, sparse white calcareous material and occasional organics. Surfaces are red-brown in colour with a grey core. Both sherds have a greenish-clear lead glaze on the upper surface. One fragment has evidence of triangular crests. Both fragments came from the Kitchen: one from pit fill 1051 (Phase 4), the other from 1019 (Phase 5). They are both likely to be residual, and this fabric is almost certainly 13th- or 14th-century in date.

*Fabric 24:* 95 g., 1 fragment. A fine sandy fabric with abundant well-sorted, fine, rounded and sub-angular quartz and fine red iron. Fired pink to pink-red throughout. The upper surface has a dark green lead glaze. This is a ridge fragment with a plain squared end, there is no indication of a crest. Fabric 24 occurs in a Phase 5 pit fill (1028), but an earlier, medieval, date is likely.

#### *Floor Tile*

There was a single piece of decorated medieval floor tile, and two modern types.

*Fabric 9:* 60 g., 1 fragment. Sandy, with abundant medium to fine, well-sorted, sub-angular quartz, fired red throughout. This is a medieval type, with stamped and white-slipped decoration. The motif is not discernible. This find occurred in Phase 4 (context 522), and the decorative technique of stamping, rather than inlay, is later medieval, suggesting a date at the end of the 14th or into the 15th century.

*Fabric 16:* 101 g., 1 fragment. A 19th- or 20th-century hard-fired red floor tile from deposit 612 (Phase 6).

*Fabric 20:* 380 g., 1 fragment. A dark grey floor tile, probably 18th-century in date from layer 1004 (Phase 5).

#### *Wall Tile*

*Fabric 10:* 21 g., 2 fragments. Both fragments of this white, 20th-century wall tile occurred in Phase 6 contexts (529 and 612).

*Miscellaneous Tile*

*Fabric 5:* 72 g., 9 fragments. A general number issued to small, formless fragments of ceramic building material.

*Fabric 18:* 89 g., 1 fragment. There is a single fragment of a Romano-British tile from deposit 677 (Phase 5), with white and red clay pellets in sandy matrix. Surfaces are pink with a grey core, indicative of a Romano-British date.<sup>76</sup> There are also pieces of possible grog. This is possibly a hearth tile.

*Fabric 19:* 28 g., 1 fragment. A sandy fabric with abundant, ill-sorted, angular and sub-angular quartz, fine red iron and sparse white calcareous inclusions. The upper surface is covered in a green lead glaze; the underside has traces of mortar. This is slightly thicker than those types identified as flat roof tiles, and it may be a fragment of ridge tile. It occurred in a Phase 3 context, suggesting a medieval date, perhaps in the 13th or 14th centuries.

*Fabric 21:* 222 g., 7 fragments. This has a fine, sandy matrix with sparse, medium, sub-angular quartz and burnt-out calcareous inclusions and is distinctively buff-white throughout. All the fragments may represent a single tile and it is possible that it is a burnt example of fabric 2. White tiles are known and it is perhaps more circumspect to identify this as a separate fabric; white roof tiles are not unknown, but they are often glazed, unlike this example. The thickness (15 mm.) certainly suggests a roof tile. Fragments occurred in Phases 4, 5 and 6, which suggests a date earlier than the 15th century.

*Brick*

Six brick fabrics were identified. All of them are likely to be 18th-century or later.

*Fabric 6:* 2881g, 1 fragment. A complete brick in a fine, sandy pink-red fabric. The stretcher measures 225 mm. and it is 105 mm. wide and 67 mm. thick. There is no frog. From brick arch 104 (Phase 5).

*Fabric 11:* 626 g., 10 fragments. A very fine, sandy fabric with occasional quartz inclusions, fired red throughout. Fragments occurred in Phases 2, 3, 5 and 6; the pieces from Phase 2 occurred in layers, were relatively small and likely to be intrusive.

*Fabric 13:* 22 g., 1 fragment. A fine sandy fabric with abundant, very fine quartz and moderate, fine to very coarse red iron. It is fired pink-red throughout. The single sherd was found in Phase 6 (context 599).

*Fabric 14:* 588 g., 8 fragments. A very hard-fired fabric, red throughout, with a fine clay matrix and no visible inclusions. Two fragments occurred in Phase 4 contexts; the remainder came from Phase 6 deposits.

*Fabric 25:* 154 g., 1 fragment. A sandy fabric with coarse red iron and sparse coarse quartz inclusions, fired dark red throughout. It is at least 50 mm. thick, although two opposing faces do not survive. There is mortar over the breaks, and this together with the dark red colour, might suggest that this is a hearth brick; it came from pit fill 1050 and therefore may be late medieval in date.

*Drain Pipe*

*Fabric 15:* 154 g., 3 fragments. Post-industrial stoneware drainpipe. All three fragments occurred in context 599 (Phase 6).

*Discussion*

Fabrics 1, 2 and 3 represent 77 % of the total weight and sherd count (not including the complete brick). These three wares no doubt originated locally and probably date to the 13th or 14th centuries. The presence of several other medieval tile fabrics suggests that a variety of products might have been utilised in the construction and maintenance of the medieval structures near or at this site. The ridge tiles are especially diverse, with three fabrics represented within five fragments.

Phase 2 produced fifteen fragments of ceramic building material. Three of those are small pieces classified as fabric 5, and may be disregarded, three more are small fragments of fabric 11 brick that might be intrusive.

<sup>76</sup> K. Brown, pers. comm.

Three others, which are likely to be 13th or possibly late 12th century, are from cellar pit 594. This pit was heavily truncated by Phase 3 pits and well cut 537, which is probably the cause of these intrusive fragments.

The bulk of this assemblage was retrieved from Phase 3 deposits. Flat roof tile fabric 2 accounts for 30 % by weight, and 22 % by fragment count of all the Phase 3 ceramic building material and fabric 3 comprises 48 % by weight and 55 % by fragment count. A fragment of a fabric 11 brick, in layer 958, may be interpreted as intrusive.

Phase 4 produced the only fragment of decorated medieval floor tile, but roof tile fabrics 1, 2 and 3 dominated. This is the first phase to produce fragments of ridge tile, and these are likely to be residual. The fills of the construction cut for the well (537) contained sherds of fabrics 1, 2, 3 and 12, all medieval flat roof tiles, and all likely to be earlier than the 15th century.

Roof tile fabrics 1, 2 and 3 are the most common types in Phase 5, and might be considered residual. There is also a broad selection of other types, including brick and late floor tile. Phase 6 continues into the 20th century, and this is endorsed by the presence of modern wall tile and drain pipe. Despite this, medieval tile fabrics 2 and 3 are well represented, which is unsurprising when one considers the amount of residual late Saxon and medieval pottery.

## THE WORKED STONE AND STONE BUILDING MATERIAL by ZENA KAMASH and HUGO LAMDIN-WHYMARK

with ARCHITECTURAL WORKED STONE by JULIAN MUNBY

Eight pieces of identifiable worked stone, six pieces of identifiable stone building material and two architectural fragments were recovered from the excavations.

The Saxon deposits in the New Wine Cellar yielded six fragments of lava quernstone (Table 10). All the pieces were formed of dark grey vesicular basalt, probably Niedermendig lava, making them similar to those found on other Oxford sites: Littlegate, Oxford Castle Mound, and 113-119 High Street.<sup>77</sup> Five of the six pieces had unidentifiable forms. However, a larger piece from 784 (secondary fill of Phase 2 pit 782) came from a rotary quern. This fragment measured 74 mm. x 50 mm. x 32 mm. The surface of one side of the stone was noticeably worn, part of which was highly polished and bore striation marks.

TABLE 10. NUMBER OF LAVA QUERNSTONE FRAGMENTS BY CONTEXT AND PHASE

<i>Context</i>	<i>Phase</i>	<i>No. of fragments</i>
776	2	1
784	2	1
808	1	2
866	1	1
976	2	1

Two fragments of whetstone made of fine sandstone were retrieved from the Phase 1 burnt deposit 665. These pieces probably came from a single whetstone; it is probably about 25% complete. Both pieces are burnt and exhibit wear on one convex surface. The larger piece has an asymmetrical V-shaped groove *c.* 5 mm. deep and *c.* 6 mm. wide (maximum) from sharpening a blade. Other whetstones have been recorded at Church Street and 113-119 High Street.<sup>78</sup>

<sup>77</sup> Hassall, Halpin and Mellor, *op. cit.* note 52, p. 237; E.M. Jope, 'Late Saxon Pits under Oxford Castle Mound: Excavations in 1952', *Oxoniensia*, xvii/xviii (1952-3), 98; F. Roe, 'Worked stone', in G. Walker and R. King et al., 'Early Medieval and Later Tenements at 113-119 High Street, Oxford: Excavations in 1993-5', *Oxoniensia*, lxx (2000), 425.

<sup>78</sup> G. Egan, 'Stone objects from Church Street (Site A)', in Hassall, Halpin and Mellor, *op. cit.* note 52, pp. 236-9; Roe, *op. cit.* note 77.

Also from Saxon contexts were four pieces of burnt shelly limestone. Two of three large pieces came from pit fill 725 (Phase 2); the other came from pit fill 845 (Phase 1). The small piece was recovered from Phase 1 burnt deposit 665. All exhibit some signs of wear on the upper surface, which may have resulted from use as a cobbled floor surface.

In addition, there were six identifiable pieces of stone building material. Two small fragments of slate were recovered: one from late deposit 599 (Phase 6) and the other from Kitchen pit fill 1017 (Phase 5). Three large fragments of limestone roof tile were recovered: two from 1017 and one from the fill of a Phase 5 construction cut (734). The fragment from 734 was rectangular with a width of 150 mm. and a peg hole with a diameter of 10 mm.; the length did not survive. The pieces from 1017 had no widths, but both possessed holes also 10 mm. in diameter. A smaller fragment of limestone roof tile came from well construction cut fill 545, and showed signs of pecking down one edge. Another 28 limestone pieces probably represent broken roof tiles.

Two pieces of architectural worked stone were recovered from the excavations. One is part of a fireplace, being part of a chamfered sunken panel made from local oolitic limestone. The piece was recovered from context 81, part of the deliberate backfill in Phase 5 under the relieving arch in the east wall of the Kitchen. The second piece is also made from oolitic limestone and is part of a stone mortarium, a large mixing bowl used in the medieval kitchen for the preparation of herbs and spices. This piece was recovered from a post-medieval context.

### THE CLAY PIPES by ZENA KAMASH

A total of 32 pieces of clay pipe were recovered from the excavation, of which 21 were from stratified deposits (Table II). All the clay pipes were fashioned out of English white clay.

Six bowls were retrieved during excavation. The two early bowls were, sadly, unstratified. Both of these bowls had thicker clay sides than the later bowls and were more crudely fashioned. The earliest bowl was a small, unmarked bulbous bowl with its spur projected slightly forward; no part of the stem survived. This bowl was similar in style to Oswald's type 16 or 17 and thus probably dates to the mid 17th century.<sup>79</sup> The other unstratified bowl was probably slightly later in date; it had a larger bulbous bowl with decorative incised lines around the top of the back of the bowl. This bowl also had a larger, circular base *c.* 9 mm. in diameter; *c.* 10 mm. of stem survived, *c.* 10 mm. in diameter with a bore of *c.* 4 mm. diameter.

TABLE II. CLAY PIPES BY CONTEXT AND PHASE

<i>Context</i>	<i>Phase</i>	<i>Number of bowls</i>	<i>Number of stems</i>	<i>Comment on stems</i>
U/S	—	2	9	1 stem with spike and 1 well-used
81	5	—	1	Bore burnt and cracked
116	6	—	1	Bowl end of stem, blackened and burnt
151	6	—	2	—
153	6	4	6	Mouth piece of 1 stem with traces of red paint
163	5	—	1	Burnt bore
164	5	—	6	—

Two of the bowls from Phase 6 cellar fill deposit 153 had makers' stamps. The first of these bowls bore a circular incuse mark on the back of the bowl. Around the top of the mark the name Huggins (in capitals) could clearly be seen, around the bottom were faint traces of the word Oxford (in capitals) and in the centre was a quatrefoil. In addition, the spur bore the initials B (left) and H (right). This pipe maker can be identified as Benjamin Huggins who worked in Oxford between 1841-76.<sup>80</sup> The bowl, the interior of which was heavily burnt with use, was upright, thin-walled and narrow, *c.* 20 mm. diameter, with a narrow spur and stem. The stem survived to a length of *c.* 20 mm.; it was *c.* 6 mm. in diameter with a bore of *c.* 1 mm. diameter. The back

<sup>79</sup> A. Oswald, *Clay Pipes for the Archaeologist* (BAR Brit. Ser. 14, 1975), 40.

<sup>80</sup> *Ibid.* pl. V.6 and 189.

of the second bowl was incised with a shield design inside which the words 'Norwood, Oxford' (over two lines and in capitals) was clearly visible. In addition, the spur bore the initials G (left) and N (right). Therefore, this pipe was the work of George Norwood who worked in Oxford from 1852-63.<sup>81</sup> This bowl was, similarly, upright, thin-walled and narrow, *c.* 21 mm. in diameter, with a narrow spur and stem. The stem survived to a length of *c.* 57 mm.; it was *c.* 6 mm. in diameter with a bore of *c.* 1 mm. diameter. The two other bowls from this context could not be clearly identified, but their shape and size suggest that they were of a broadly similar date to the others retrieved from this context. Both pipes had moulded decorative leaves up the centre of the front of the bowl and a star-shaped flower on each side of their spurs.

## THE ENVIRONMENTAL EVIDENCE

### THE ANIMAL BONE by BETHAN CHARLES

A total of 3428 fragments of bone were recovered by hand from the excavations. A further 10,583 fragments were recovered from environmental samples, sieved through meshes of >10 mm., 10 to 4 mm. and 4 to 2 mm. A large number of mostly sieved material (4669 fragments) consisted of small mammal, bird and fish bone, which is discussed separately below.

#### *Condition*

The condition of the bone was graded from 1 to 5 using the criteria stipulated by Lyman,<sup>82</sup> grade 1 being the best preserved bone and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable. The condition of the bone was very good, between grades 1 and 2 for the majority. Almost none had signs of chemical etching or root damage and very little had signs of gnawing damage from dogs.

Butchery cut marks were recorded on many of the bones. A large proportion of sheep vertebrae from all phases had clearly been cut dorso-ventrally down the length of the body, as was widely practised in England from the 11th century. The sagittal cutting of the vertebrae tends to occur if the carcass is split lengthways and this splitting of the sides of the animal would necessitate the suspension of the animal from sturdy hooks in order to cut the animal from tail to head.<sup>83</sup> The majority of the long bones had cut marks across the shaft. In addition, some of the cattle and sheep horncores had been butchered, but there were no concentrated deposits of butchered horncores or skull fragments.

Only a small number of bones recovered from the site had been burnt in relation to the total number of fragments recovered. Most of the fragments were found amongst the sieved material from Phases 1 and 2. The largest group of burnt fragments (129 fragments) was recovered from Phase 1 domestic pit 834 (contexts 837 and 845).

#### *Methodology*

The analysis followed standard OAU procedure, details of which are included in the archive.

#### *Results (Tables 12, 13 and 14)*

*Phase 1:* A total of 187 identifiable fragments of bone were recovered from both the hand-retrieved and sieved material from Phase 1 deposits. It is clear that sheep represent the most numerous bones found at the site with 65% of the identified hand-retrieved material and 69% of the sieved material. The age at death of the sheep according to tooth wear stages indicates that both younger and older sheep were at the site. The evidence from the epiphyseal fusion of the bones indicates that at least some of the animals were killed before 2 years of age. Cattle bones were the second most numerous elements found on the site from the hand-collected material. In addition, pig also constituted a large part of the diet of the inhabitants. Only a single wild mammal bone – a fragment of roe deer scapula – was recovered from this phase.

*Phase 2:* A total of 668 fragments of hand-retrieved material and 207 fragments of sieved material was identified to species from Phase 2 deposits. It is clear from both data-sets that sheep were the most numerous elements recovered from the site, comprising 58% of the identified hand-retrieved material and 71% of the sieved material.

<sup>81</sup> Ibid. 189.

<sup>82</sup> R.L. Lyman, *Vertebrate Taphonomy* (1996).

<sup>83</sup> T.P. O'Connor, *Animal Bones from Flaxengate, Lincoln c. 870-1500* (1982).

The age at death of the sheep according to tooth wear stages indicates that the majority of the animals were killed at 3 to 4 years of age or older. Cattle bones were the second most numerous elements recovered, the majority of which were killed before 2 to 3 years of age. One cattle bone from context 791 was identified as female.

Pig bone appears to have been over represented in the sieved material, in comparison to the hand-retrieved material. The epiphyseal fusion of the pig bones suggests that the almost all animals were killed *c.* 2 years of age; only one mandible that could be aged was over 2 years old.

Again, only a single fragment of red deer bone was recovered from this phase. Two fragments of horse bone were recovered, including a radius and a phalanx from context 676. None of the bones had signs of butchery. In addition, four dog bones were recovered, including two phalanges from context 725, the right second metatarsal from context 704 and a dog femur from context 983.

TABLE 12. TOTAL NUMBER OF MEDIUM TO LARGE MAMMAL BONE RECOVERED BY HAND ACCORDING TO SPECIES AND PHASE

<i>Phase</i>	<i>Horse</i>	<i>Cattle</i>	<i>Sheep</i>	<i>Pig</i>	<i>Red Deer</i>	<i>Roe Deer</i>	<i>Dog</i>	<i>Cat</i>	<i>Unidentified</i>	<i>TOTAL</i>
1	0	26	55	3	0	1	0	0	51	136
2	2	218	385	58	1	0	4	0	551	1219
3	1	141	367	25	0	2	0	2	367	905
4	1	79	108	8	0	0	0	1	169	366
5	2	92	171	11	2	0	0	5	180	464
6	0	11	46	2	0	0	0	0	270	329
Unphased	0	1	8	0	1	0	0	0	0	39
TOTAL	6	568	1140	107	4	3	4	8	1588	3428

TABLE 13. NUMBER OF SIEVED BONE ACCORDING TO SPECIES AND PHASE

<i>Phase</i>	<i>Cattle</i>	<i>Sheep</i>	<i>Pig</i>	<i>Unidentified</i>	<i>TOTAL</i>
1	19	70	13	916	1018
2	18	146	43	2103	2310
3	5	37	7	582	631
4	6	63	5	1196	1270
5	7	89	7	561	664
TOTAL	55	405	75	5358	5893

TABLE 14. MNI FOR THE MAIN DOMESTIC SPECIES FROM HAND-COLLECTED MATERIAL BY PHASE

<i>Phase</i>	<i>Cattle</i>	<i>Sheep</i>	<i>Pig</i>
1	2	4	1
2	8	15	4
3	8	19	3
4	2	7	2
5	5	8	1
6	1	2	1

*Phase 3:* A total of 375 fragments of bone were identified to species from the hand-collected material from this period. No elements from the larger mammalian species were recovered from environmental samples. The number of domestic species found at the site appears to change slightly during this period of occupation. Whilst sheep bones are still the most numerous found at the site, it is clear that cattle also played a large part in the meat diet of the inhabitants with a slight reduction in consumption of pork, as is common in Oxfordshire.<sup>84</sup>

The evidence from tooth wear stages and epiphyseal fusion rates of the sheep bones shows that the majority of the sheep were killed between the ages of 1 to 2 years and older. The cattle mandibles indicate that some of the animals were being kept until old age before being killed for their meat. Most appear to have been killed at over 2 to 2.5 years of age according to the epiphyseal fusion rates of the bones. The pigs appear to have been killed before 2 years of age, as in earlier periods.

Three innominate bones from female sheep were recovered from gravel deposit 949 and pit fill 643 and one male innominate bone was recovered from soil deposit 589. A single horse tooth was found within pit fill 826. In addition, a juvenile cat femur and mandible were found in pit fill 948; it is likely that they were related. None of the cat bones from any of the periods of occupation on this site had any indication of butchery marks.

*Phase 4:* A total of 179 fragments of bone were identified to species from hand-collected material from this phase and a further 74 fragments were identified from the sieved material; a lower number of identified fragments than other phases. Sheep were the most numerous animals killed, the majority of which were killed after 1 to 2 years of age. One cattle innominate bone from context 14 was identified as female. A single cat mandible from deposit 737 and part of a horse pelvis from deposit 741 were the only other fragments recovered.

*Phase 5:* A total of 286 fragments of bone were identified to species from the hand-collected material and an additional 103 fragments of bone were identified from sieved deposits. It appears that sheep were the most numerous of the species eaten at the site, while cattle were the second most numerous. However, it is possible that there is a retrieval bias since pig and cattle were recovered in equal numbers from the sieved material.

The cattle appear to have been slaughtered around 2 to 3.5 years of age, whilst the majority of the sheep may have been killed when slightly older. Again, the pigs appear to have been killed before the age of 2 years.

A single horse phalanx was recovered from context 950. Two fragments of red deer were also found, including part of a tibia and a phalanx. The majority of the cat bones were recovered from this period and include a skull and both mandibles from deliberate fill 81, another mandible from Kitchen floor 1018 and a femur from pit fill 1017. None of the bones had any butchery marks.

*Phase 6:* Only a small number of bones were recovered from this period of occupation; sheep, cattle and pig were identified.

#### *Biometric Data*

From the recovered assemblage 159 fragments of bone were complete enough to be measured, the majority of which were elements from the main domestic species (cattle, sheep and pig). However, only the sheep bones, in particular the metapodial bones, provided enough comparative data to look at variations in the sizes of the animals during the separate periods of occupation. In general the bones were not large and would have been an unimproved variety, as has been suggested for other sites in Oxford, and would have remained the same size from Phase 1 to Phase 4.<sup>85</sup>

#### *Pathology*

Only a small number of bones had signs of pathological changes, all of which were found on the sheep bones from the site. Elements included a sheep mandible from Phase 2 (context 791) with pitting around the teeth on the external part of the jaw, probably caused by gum disease. Another bone from Phase 2 (context 775) included a sheep radius with a small amount of bone growth on the lateral side of the proximal articulation. A sheep rib with a healed fracture was recovered from Phase 3 (context 592). In addition, slight bone growth just below the top of the proximal articulation on the posterior side of a sheep metacarpal was found on a bone from Phase 5 (context 1018).

<sup>84</sup> M. Robinson and B. Wilson, 'A Survey of Environmental Archaeology in the South Midlands', in H. Keeley (ed.), *Environmental Archaeology: A Regional Review*, vol. 2 (1987), 16-100.

<sup>85</sup> B. Wilson, 'Animal bone and shell', in N. Palmer, 'A Beaker Burial and Medieval Tenements in The Hamel, Oxford', *Oxoniensia*, xlv (1980), 124-225.

### *Representation of Elements*

The cattle, sheep and pig bones from all periods of occupation were similar with regards to the elements recovered: mostly fragments from around the head and feet. However, there do not appear to be any concentrations of particular elements that might signify industrial use of any of the animals at the site, so the refuse was most likely domestic.

### *Discussion*

The main domestic species indicate an extensive period of occupation and urbanisation of the site. It appears that a greater number of inhabitants were at the site during the late Saxon period with a general decrease in animal bone refuse from Phase 3 onwards, almost certainly as a result of less intensive occupation of the site.

It is clear that sheep bones represent the majority of the identified assemblage in keeping with many early medieval sites which, as well as documentary evidence such as the Domesday survey, point to sheep being the most numerous animals farmed from the early medieval period onward.<sup>86</sup> It has also been suggested that sheep may have been the most easily produced and least time-consuming for farming.<sup>87</sup>

The age of the animals in Phases 1 to 4 indicates that both cattle and sheep brought to the site for consumption were mostly mature animals with only a small number of calves and lambs. Both animals were almost certainly farmed for their secondary products or used on the farms as work animals before being considered for meat. This evidence suggests that the site was not one of high status. During the later periods, cattle and sheep are also likely to have come from outside the immediate area, probably originating from breeding and dairying manors.<sup>88</sup> The pig bones from all phases indicate that most of the animals were slaughtered at *c.* 2 years of age and would have been kept primarily for their meat.

The incidence of wild species such as deer did not contribute greatly to the diet of the inhabitants during the medieval period, as has also been shown at other Oxford sites,<sup>89</sup> and reflects a general lack of wild mammals in assemblages from urban deposits of 11th- to 13th-century date in Oxfordshire.<sup>90</sup> Although horses featured at the site, it is unlikely that they were eaten in the Saxon and medieval periods due to Pope Gregory III's ban on horse meat consumption in AD 732.<sup>91</sup>

## THE BIRD, FISH AND SMALL MAMMALS by CLAIRE INGEM

This report discusses the fish, bird and small mammals (rabbit, rodent and other micromammals) recovered by sieving and hand collection. The animal bones discussed here were recovered primarily from sieved samples taken from a variety of context types including pits and a Kitchen floor.

### *Methodology*

The animal bones were identified and recorded at the Centre for Human Ecology and Environment (CHEE), Department of Archaeology, University of Southampton. All of the anatomical elements were identified to species where possible with the exception of ribs and vertebrae which were assigned to size categories. Mandibles and limb bones belonging to mammals and birds were recorded using the zonal method developed by Serjeantson.<sup>92</sup> This produced a basic fragment count of the Number of Identified Specimens (NISF). The presence of gnawing, butchery and burning together with the responsible agent, was recorded. The calculation of the minimum number of individuals (MNI) is based on the most numerous bone taking into account side and zone.

<sup>86</sup> J.M. Maltby, *Faunal Studies on Urban Sites: The Animal Bones from Exeter 1971-1975* (1979); O'Connor, *op. cit.* note 83; R. Trow-Smith, *A History of British Livestock Husbandry to 1700* (1957).

<sup>87</sup> Robinson and Wilson, *op. cit.* note 84.

<sup>88</sup> B. Wilson, 'Mortality Patterns, Animal Husbandry and Marketing in and around medieval and post-medieval Oxford', in A.R. Hall and H.K. Kenwood (eds.), *Urban and Rural Connections: Perspectives from Environmental Archaeology* (Oxbow Monograph 47, 1994), 103-15.

<sup>89</sup> Wilson, *op. cit.* note 85; B. Wilson, 'Medieval animal bones and marine shells from Church Street and other sites in St. Ebbe's, Oxford', in Hassall, Halpin and Mellor, *op. cit.* note 52, pp. 258-68 and fiche.

<sup>90</sup> Robinson and Wilson, *op. cit.* note 84.

<sup>91</sup> B. Wilson and P. Edwards, 'Butchery of horse and dog at the Witney Palace, Oxfordshire, and the knacker and feeding of meat to hounds during the post-medieval period', *Post-Medieval Archaeology*, 27 (1993), 43-56.

<sup>92</sup> D. Serjeantson, 'The animal bones', in S. Needham and T. Spence (eds.), *Runnymede Bridge Research Excavations, vol. 2. Refuse and Disposal at Area 16 East Runnymede* (1996), 194-233.

The rabbit bones were distinguished from hare on the basis of size. Frog was distinguished from toad using the morphology of the ilium. All of the goose remains were of a size suggestive of domestic geese and the duck remains comparable with mallard, however this has not been confirmed by detailed metrical analysis. Galliforms were not identified further but the majority probably belong to domestic fowl and will be referred to as such for the purposes of this report.

The material from contexts 1018, 1025 and 1050 was sub-sampled and only approximately half the remains from each sieve size were included in the analysis. A scan suggested that the balance of the material was similar in character to that studied in detail. Of the unidentifiable mammal bone only that which could be positively identified as small mammal has been quantified.

### Results (Tables 15-16)

A total of 1,411 identifiable fragments of animal bone was recorded from securely dated contexts of which the majority was recovered using <10 mm. mesh. The largest samples were recovered from Phases 2, 4 and 5 whilst relatively small amounts of material came from Phases 1, 3 and 6.<sup>93</sup>

*Phase 1:* A total of 100 fragments of identifiable animal bone was recovered from Phase 1 deposits. The identifiable material from the >10 mm. samples is predominantly composed (92%) of bird bones, with small numbers of small mammal and fish. In contrast, the <10 mm. sample is dominated (64%) by fish bones.

Bird remains are more numerous than small mammals or fish in the >10 mm. sample; goose (*Anser* sp.) and passerine are both present but the majority of bones belong to domestic fowl. In contrast, identifiable bird bones make up a very small proportion (6%) of the <10 mm. sample and all belong to domestic fowl. Anatomical representation shows that all parts of the domestic fowl skeleton are represented.

There was only one identifiable fish bone amongst the >10 mm. material and this belongs to common eel (*Anguilla anguilla*). However, fish remains dominate the <10 mm. sample with herring (*Clupea harengus*) and common eel the most numerous species; single fragments belonging to cyprinid (carp) and muglid (mullet) were also present. Anatomical representation shows that eel is represented by cranial elements and vertebra from all parts of the spinal column whilst herring, cyprinid and muglid are represented solely by posterior abdominal or caudal vertebra.

A few bird bones displayed cut marks, the majority of these belong to domestic fowl, but one bone belonging to goose had also been cut. Several bones are burnt, the majority of which are unidentifiable bird and fish fragments.

One pit fill (context 837) produced a significant quantity of fragments; domestic fowl is the most numerous species from this deposit with several herring and eel bones also present.

*Phase 2:* A total of 509 identifiable fragments were recovered from deposits dated to the later half of the 11th century. The majority (85%) of fragments in the >10 mm. samples belong to bird with smaller amounts of small mammal and fish. In contrast, the <10 mm. samples are dominated by fish (97%) with small mammal and bird making up the remainder.

The bird remains are again dominated by domestic fowl whose remains are comprised predominantly of major limb bones, but the skull and axial skeleton are also represented. Goose, duck (*Anas/Aythya* sp.) and golden plover (*Pluvialis apricaria*) are present in small numbers.

A variety of fish are present; herring is clearly the dominant species followed by eel and salmonid, pike (*Esox lucius*), chub (*Leuciscus cephalus*), cod (*Gadus morhua*) and flatfish all present. Herring, pike, and eel are represented by both cranial and vertebral bones.

One goose, one duck and two domestic fowl bones possess cut marks and one unidentified bird bone showed signs of gnawing. A single herring vertebrae is crushed in a manner suggestive of gnawing, probably by a human. In addition, a few bones are burnt including three belonging to domestic fowl and five to herring.

The largest number of fish bones was recovered from two fills of pit 782. In fill 786, which produced 392 fish bones, herring comprised more than half of the material recovered with a smaller amount of eel. Fill 773 also contained a considerable quantity of material, half of which again belonged to herring although several eel bones were also present.

*Phase 3:* A total of 13 identifiable fragments were recovered from Phase 3 deposits, four belong to goose and nine to domestic fowl; all came from material over 10 mm. Cut marks were visible on a domestic fowl bone and an unidentifiable bird bone had been gnawed.

<sup>93</sup> All tables relating to anatomical representation, cut marks, gnawing, burning and concentrations of fish bone can be found in the archive.

*Phase 4:* A total of 421 identifiable fragments were recovered from 15th-century deposits, of which the majority came from the <10 mm. samples. In contrast to earlier phases, identifiable fish (53%) and small mammal (28%) remains dominate the >10 mm. samples with bird making up a small proportion (20%). Fish remains (98%) almost completely dominate the <10 mm. samples whilst identifiable bird remains are absent. No evidence for butchery or gnawing was visible on any of the bones and only one bone belonging to a small mammal was burnt.

The small mammal remains are dominated by rabbit (*Oryctolagus cuniculus*) bones representing a minimum of one individual, however as the bones were distributed throughout two contexts it is likely that more than one individual is represented. Rodent is also present.

The identifiable bird remains belong to duck, domestic fowl and rock dove (*Columba livia*). Duck is represented by a single femur and domestic fowl by most major limb bones and a thoracic vertebra. Of the five dove bones, four are tarsometatarsi.

A variety of fish are represented including elasmobranch (rays and sharks), herring, salmonid, pike, chub, common eel, whiting (*Merlangius merlangus*), pollack (*Pollachius pollachius*), cod, ling (*Molva molva*), mackerel (*Scombra scombrus*), gurnard and flatfish. As in previous phases, herring dominate the fish remains followed by common eel, but elasmobranch, cyprinid, whiting and flatfish are also fairly numerous. With the exception of a posttemporal, all of the herring remains are from the vertebral column. Pike, chub, eel, some gadids and flatfish are all represented by both cranial and vertebral elements.

Two deposits in the Kitchen contained noteworthy assemblages. The fill (1050) of pit 1051 contained a particularly rich deposit including 20 rabbit bones, but again herring comprised the bulk of the identifiable assemblage and eel was fairly numerous. The fill (1024) of posthole 1025 contained a large number of fragments; herring and eel were almost equally represented, but the majority of the remains were unidentifiable fragments of fish.

*Phase 5:* A total of 236 identifiable fragments were recovered from this phase, the majority from the <10 mm. samples. The >10 mm. samples are dominated by fish remains with smaller amounts of small mammal and bird. Similarly, the <10 mm. samples are also dominated by fish remains (87%) with little small mammal or bird. There is no evidence on any of the bones for butchery or gnawing and only one bone, belonging to eel was burnt.

All the identifiable small mammal remains belong to rabbit and rodent, the latter including house mouse (*Mus musculus*). Rabbit was represented by elements from the skull, hind limb and sacrum and the calculation of MNI indicates that at least two individuals are represented.

A variety of birds are present including goose, domestic fowl, golden plover, rock dove and passeriform. Numerous types of fish are again present including elasmobranch, herring, salmonid, cyprinid, common eel, whiting, pollack, ling, gurnard and flatfish. Eel becomes the most numerous species for the first time being almost twice as numerous as herring. Cyprinid, whiting and flatfish are the only species represented by elements other than vertebra.

The Kitchen floor (1018) produced a considerable number of fragments including 20 rodent and 16 rabbit bones. The largest number of identifiable remains belonged to eel, which was twice as numerous as herring.

*Phase 6:* A total of 132 identifiable animal bones were recovered from these deposits; all but one unidentifiable bird bone came from the <10 mm. samples. Again, none of the bones possess evidence for butchery or gnawing, but 20 herring bones are burnt. Most of this material was recovered from the fill of a construction cut (793) and was comprised almost entirely of herring bone.

The <10 mm. samples produced four amphibian bones but no identifiable small animal remains and none of the three bird bones are identifiable. The majority of the identifiable fragments belong to herring and the only other identifiable fish remains are eel which comprise a much smaller proportion of the fish assemblage. Cranial elements are absent.

The number of species recovered from these deposits is considerably reduced compared to earlier phases. This reduced species diversity is quite possibly a function of sample size and context type, rather than a true reflection of the dietary habits of the occupants.

### Conclusion

During the first half of the 11th century there is no evidence to suggest that small mammals contributed to the diet; mole and rodent are most likely to represent natural casualties. In contrast, there is no reason to believe that the bird and fish remains represent anything other than domestic food waste. Domestic fowl appear to have been the bird eaten most frequently and along with goose, are likely to represent the remains of domestic birds kept to supply meat, eggs and feathers. Passerines may also have comprised part of the diet; small birds are known to have been considered exotic during the medieval period when they were served at feasts.

TABLE 15. SPECIES REPRESENTATION IN &gt;10MM SAMPLES ACCORDING TO PHASE

<i>Species</i>	<i>Phase 1</i>	<i>Phase 2</i>	<i>Phase 3</i>	<i>Phase 4</i>	<i>Phase 5</i>	<i>Phase 6</i>	<i>TOTAL</i>
Mole	1						1
Rabbit				21	16		37
Rodent	2				2		4
Small mammal	1	4		8	32		45
<i>Total identifiable mammal</i>	3			21	18		42
<i>% of identifiable assemblage</i>	6			28	33		18
Goose	2	3	4		2		11
Duck		1		2			3
Galliform	40	27	9	8	6		90
Golden plover		2			1		3
Rock dove				5	2		7
Passeriform	4				1		5
Unidentifiable bird	40	37	7	27	15	1	127
<i>Total identifiable bird</i>	46	33	13	15	12		119
<i>% of identifiable assemblage</i>	92	85	100	20	22		51
Elasmobranch				1	1		2
Herring		1					1
Salmonid				2	1		3
Pike				4			4
Common eel	1	2		2	4		9
Pollack					1		1
Cod		2		1			3
Ling				5	2		7
Chubb				1			1
Cyprinid (carp)				2	6		8
Gadid (cod family)		1		5			6
Triglid (gurnard)					1		1
Flatfish				17	9		26
Unidentifiable fish	2	7		104	11		124
<i>Total identifiable fish</i>	1	6		40	25		72
<i>% of identifiable assemblage</i>	2	15		53	45		31
TOTAL IDENTIFIABLE	50	39	13	76	55		233

TABLE 16. SPECIES REPRESENTATION IN &lt;10MM SAMPLES ACCORDING TO PHASE

<i>Species</i>	<i>Phase 1</i>	<i>Phase 2</i>	<i>Phase 4</i>	<i>Phase 5</i>	<i>Phase 6</i>	<i>TOTAL</i>
Rodent	15	3	4	18		40
Rabbit			4			4
Frog		1				1
Amphibian		5			4	9
Small mammal	7	2	45	20		74
<i>Total identifiable mammal</i>	<i>15</i>	<i>9</i>	<i>8</i>	<i>18</i>	<i>4</i>	<i>54</i>
<i>% of identifiable assemblage</i>	<i>30</i>	<i>2</i>	<i>2</i>	<i>10</i>	<i>3</i>	<i>5</i>
Galliform	3	4		1		8
Charadriiform		2				2
Passeriform				4		4
Unidentifiable bird	28	24	114	24	3	193
<i>Total identifiable bird</i>	<i>3</i>	<i>6</i>		<i>5</i>		<i>14</i>
<i>% of identifiable assemblage</i>	<i>6</i>	<i>1</i>		<i>3</i>		<i>1</i>
Elasmobranch			29	6		35
Herring	16	375	151	41	119	702
Salmonid		4	8	6		18
Pike		2	3			5
Common eel	14	62	57	76	9	218
Whiting			22	10		32
Pollack			1			1
Mackerel			2			2
Flatfish		8	31	2		41
Chubb		2	1			3
Cyprinid (carp)	1		25	12		38
Gadid (cod family)		2	6	5		13
Triglid (gurnard)			1			1
Muglid (mullet)	1					1
Fish fragments	38	139	1031	299	15	1522
<i>Total identifiable fish</i>	<i>32</i>	<i>455</i>	<i>337</i>	<i>158</i>	<i>128</i>	<i>1110</i>
<i>% of identifiable assemblage</i>	<i>64</i>	<i>97</i>	<i>98</i>	<i>87</i>	<i>97</i>	<i>94</i>
TOTAL IDENTIFIABLE	50	470	345	181	132	1178

Several varieties of fish appear to have been consumed in Phase 1, but herring and eel made up the bulk of the fish diet. Body-part representation suggests that eel were present as whole fish, whilst the absence of cranial elements belonging to herring suggests these fish may have been decapitated prior to arriving at the site, but it is possible that the absence of cranial elements is a reflection of their fragile nature. Herring fisheries developed after the 11th century and it is likely that being a marine fish with a short shelf life, herring was imported to the site in a pickled form. Freshwater fish are also represented and whilst the marine fish would have been transported from the coast, the freshwater carp may have been caught in a local river or fishpond.

It appears that a greater variety of birds and fish were consumed during the later half of the 11th century with the addition of duck, plover, salmonid, pike, cod, chub and flatfish to the diet. Plovers are wild fowl that inhabit moors, farmland, estuaries and muddy seashores and their remains indicate either that the inhabitants were hunting locally available food sources or purchasing luxury foods.<sup>94</sup> Pike, chub and eel would have been available in local rivers or may have been kept in fishponds; salmonids are anadromous and would, therefore, also have been found in rivers during the spawning season. The low density of salmonid bone suggests they may be more easily destroyed than the remains of more robust species and hence their low frequency may reflect preservation bias rather than a real absence.

By the 15th century some changes seem to have been made in the diet: the appearance of dove and possibly rabbit, the otherwise virtual absence of birds and the increased variety of fish are all interesting. Rabbits are believed to have been introduced to Britain from Spain between 1205 and 1238 and were expensive until post-medieval times.<sup>95</sup> Although domestic fowl, duck and rock dove appear in the diet, the overall proportion of bird had dramatically declined compared to the 11th-century assemblages. Hammond states that doves were a 'source of food for the lord' and that they were 'considered a great delicacy'.<sup>96</sup> A noticeable increase in the number of marine species is seen in 15th-century deposits, but herring continues to form the bulk of the fish eaten.

It is noteworthy that, in general, the amount of fowl in the diet appears to have been reduced in the post-medieval period relative to fish. The wide variety of fish present suggests that the inhabitants continued to enjoy an extremely varied diet. It is also interesting that neither eel nor herring are represented by cranial elements and it is possible that both species were arriving at the site in a decapitated form.

The fish, bird and small mammal remains from the site of Lincoln College conform to the general medieval pattern of food consumption. However, it is clear that the diet was varied and became more so with time, especially in the case of fish and included many luxury and exotic foods. This bone material, mostly gathered from environmental samples, indicates the inhabitants' status and affirms the importance of careful sampling strategies on archaeological sites.

#### THE MARINE SHELL by GREG CAMPBELL

These excavations recovered a small assemblage of marine mollusc shells (190 in total) from 38 deposits (Table 17). Shells of common mussel (*Mytilus edulis*) and common cockle (*Cerastoderma edule*) were present, but very rare, and the great majority was from oyster (*Ostrea edulis*): 159 shells representing at least 107 individuals.

Shells exclusively of oyster were present in very low numbers in the early Saxon buildings of Phase 1, the later Saxon buildings of Phase 2, and the earlier medieval soils and pits of Phase 3. Although Phase 3 deposits contributed 24% of the total oyster shells, this period lasted about eight times longer than either of the Saxon phases and, therefore, the amount of marine shell being discarded annually was broadly similar. This low density was confirmed by the soil samples; only 11 samples contained shells, an average of about two shells per 100 litres.

<sup>94</sup> H. Heinzel, R. Fitter and J. Parslow, *Birds of Britain and Europe with North Africa and the Middle East* (1998).

<sup>95</sup> S. Davis, *The Archaeology of Animals* (1987), 194.

<sup>96</sup> P.W. Hammond, *Food and Feast in Medieval England* (1993), 17.

TABLE 17. OCCURRENCE OF MARINE SHELL PER PHASE

<i>Phase</i>	<i>Oyster top</i>	<i>Oyster base</i>	<i>Cockle</i>	<i>Mussel</i>
1	4	1		
2	3	8		
3	18	20		1
4	21	22	2	20
5	26	27	3	5
6	3	6		

It is clear that marine molluscs were a very rare part of the diet during these phases. This is because the small proportion of meat in such a heavy-shelled animal made it difficult, and therefore expensive, to keep them alive while transporting them from the sea either by wagon overland or by boat up the Thames. The conclusion that oysters must have been a rare delicacy is reinforced by the size range (30 to 90 mm.) and age range (3 to 5 years), showing that only young delicate oysters were selected. Most of the oysters were long and narrow (more common on muddy or silty bottoms) and many had a distinct concave curve to the back of the shell, probably indicating that they had been collected from the same bed. Shellfish other than oysters began to be eaten at some time in Phase 3 (a single mussel shell was recovered from layer 791), probably as transport had become rapid enough to bring them to the town before spoiling.

There was an increase in the eating of shellfish during the earliest use of the college Kitchen (Phase 4), as this phase produced 27% of the oyster shells. Most of these were recovered from deposits relating to the construction of the Kitchen, such as the scaffolding post-holes and the fill of pit 1051. This bone-rich pit, sealed under the Kitchen floor, was the earliest confirmed instance of the eating of cockles at the site; it contained 17 mussel shells per 100 litres of fill and 13 oysters per 100 litres. The oysters of this phase were of a similar shape and size to those in the earlier phases, arguing that the majority of the oysters continued to come from the same source.

Eating shellfish became even more common during the late medieval and early post-medieval period of Phase 5. During these two centuries 33% of all the oyster shells were discarded at the site. Occupation layer 1018 was the richest source of shell in the site, with the highest density – 36 oyster shells per 100 litres – and all three molluscs. There was a range of oyster shell-shapes in the layer, indicating that oysters were now being supplied from more than one source.

Throughout these five phases, about one in eight of the oyster shells have recognisable breaks due to their being opened by a knife, and these breaks are almost always on the edge opposite the hinge, unlike modern practice where the knife is inserted along the back edge. The range of sizes and ages increased slightly through time, indicating that oysters gradually became more common without becoming regular fare. The late post-medieval period (Phase 6) contributed very little to the assemblage. This is likely to be an underestimation since deposits of this date were not sampled.

## THE CHARRED PLANT REMAINS by RUTH PELLING

Excavations in the New Wine Cellar area revealed a series of organic-rich burnt deposits related to several significant episodes of burning. The recovery of charred plant remains from a major conflagration event is unusual and offers a potential insight into activities related to the use of that building or feature not normally recovered, as well as providing information about the actual product intended for use, rather than the discarded waste. The deposits below the proposed wine cellar, therefore, had the potential for shedding light on the nature of storage and crop processing activities taking place within that particular area of the late Saxon town of Oxford. A series of samples were taken from burnt horizons, some directly relating to the burning episodes. In addition, samples were taken from pits and other features related to the Phase 1 and 2 buildings.

Limited sampling took place within the Kitchen area to shed light on the possible diet and kitchen activities of the earlier phases of the college.

### Methodology<sup>97</sup>

The samples were processed at the Oxford Archaeological Unit by bulk flotation using a modified Siraf-type machine. The volume of deposit processed ranged from 1 to 40 litres. Flots were collected onto a 250 mm. mesh, while the mineral fraction was retained on a 1 mm. mesh. A total of 43 dried flots were submitted to the Oxford University Museum of Natural History for assessment.<sup>98</sup>

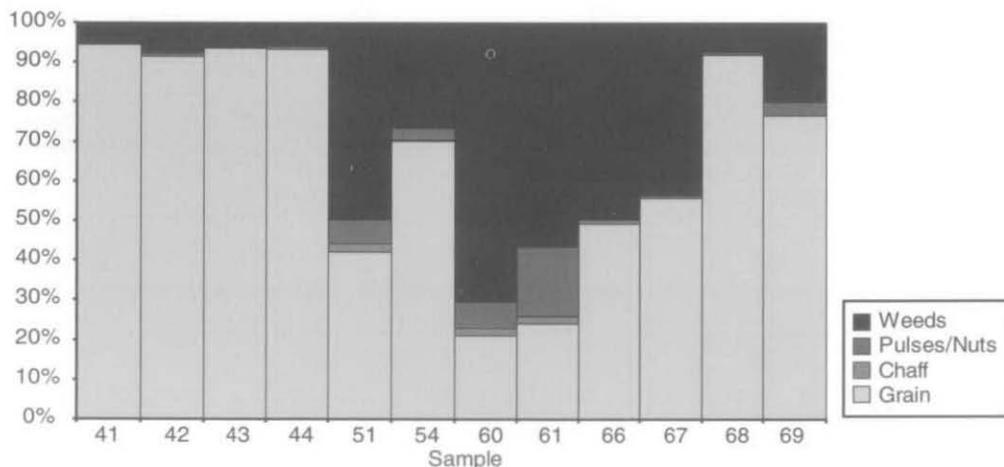
All samples were initially scanned under a binocular microscope at x10 magnification to assess the potential for analysis. All samples selected for analysis were sorted under a binocular microscope at x10 to x20 magnification for identifiable and quantifiable items. Large flots were fractioned and a quarter was sorted. Identifications were based on well established morphological criteria and by comparison with modern reference material. Cereal grain was quantified on the basis of embryo ends. The chaff items recorded are given (rachis, floret base etc.). All other items recorded are seed, nutlet etc. unless otherwise stated. Nomenclature and taxonomic order follows Clapham, Tutin and Moore.<sup>99</sup>

### Results

The samples produced some very substantial flots, generally characterised by large quantities of cereal grain. The detailed results of the twelve samples selected for analyses are shown in Table 20. A summary of the sample composition is shown in graph form in Table 18, while Table 19 shows the ratio of the identified cereal grain.

The majority of deposits which were assessed, but not analysed in full, produced only small mixed deposits of grain, weeds and charcoal with very limited chaff. These assemblages are thought to represent scatters of waste, which have been subsequently spread about the area. The Kitchen samples (samples 39, 40, 71 and 72) produced no significant cereal or weed remains but did produce remains of *Vitis vinifera* (grape), *Ficus carica* (fig), some mammal bones and a large quantity of fish bone.

TABLE 18. SAMPLE COMPOSITION

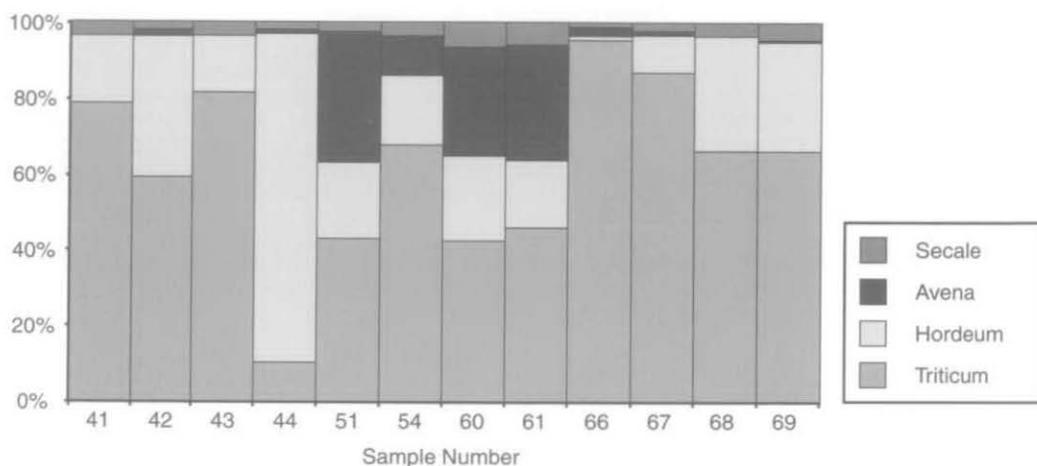


<sup>97</sup> Sampling was at the excavator's discretion and was limited by potential contamination by later intrusive material.

<sup>98</sup> Due to limitations of funding and available time only samples thought to offer the maximum potential information were selected for further analysis. Samples with fewer cereal grains were sorted if they were noted to contain useful quantities of other categories of remains, such as cereal chaff or pulses.

<sup>99</sup> A.R. Clapham, T.G. Tutin and M. Moore, *Flora of the British Isles* (1989).

TABLE 19. THE RATIO OF IDENTIFIED CEREAL GRAIN



### Cereals

All four major cereals were represented in the samples: *Triticum* sp. (wheat), *Hordeum vulgare* (barley), *Avena* sp. (oats) and *Secale cereale* (rye). Chaff was very limited so the majority of information about the cereals is derived from the grain. The *Triticum* sp. appears to be all free-threshing and includes a short-grained variety. The paucity of rachis meant that it was not possible to establish if a hexaploid, *Triticum aestivum* (bread wheat) type, or tetraploid, *T. turgidum* (rivet wheat), wheat was represented.

A hulled variety of *Hordeum vulgare* is represented, as is common in Britain at this time. The presence of asymmetric lateral grains and occasional lemma bases with the characteristic transverse crease attest to the presence of six-rowed barley. The ratio of lateral to central grain in six-row barley is 2:1. In the samples the central straight grains generally outnumber the asymmetrical lateral grains suggesting that two-rowed barley might also be present, although this cannot be conclusively demonstrated in the absence of two-rowed barley rachis.

The two minor cereals represented, *Avena* sp. (oats) and *Secale cereale* (rye) were generally present in low numbers with slightly more significant amounts of *Avena* sp. in four samples. Four grains of *Avena* sp. still retained the remains of the floret with sufficient preserved to enable the identification of a cultivated species. It was not possible to establish if the species represented was *Avena sativa* or *strigosa* (common or bristle oat).

### Grain Preservation

Preservation of the grain tended to be very good in all samples with many grains still retaining a virtually intact epidermis and with visible rachillae and hairs characteristic of Hubbard's Preservation Class 2.<sup>100</sup> The preservation of grain was not recorded in detail, although it ranged from 2 to 5 with the majority of grains in the big grain-rich samples falling between 2 to 4. The preservation of the grain may suggest that charring occurred at low to moderate temperatures or that it was not subjected to high temperatures for an extended period.<sup>101</sup> Distortion tended to be minimal, but on occasional grain tarry material had exuded from the distal end, sides or dorsal surface, Hubbard's distortion Class 6, attributed to unripe grain.<sup>102</sup> Alternatively, the grain may have been slightly damp. In the samples this sort of distortion was more prevalent amongst the *Hordeum* grains than the *Triticum* grains, perhaps suggesting that the *Hordeum* crop was less ripe or was stored in a slightly damp state, which would in turn indicate storage in a separate vessel or bag. Very occasional grain of *Triticum*, *Hordeum* and *Avena* sp. showed clear evidence of having sprouted, which might have happened in

<sup>100</sup> R.N.L.B. Hubbard and A. al Azm, 'Quantifying preservation and distortion in carbonised seeds and investigating the history of *Friké* production', *Jnl. of Archaeol. Science*, 17 (1990), 103-106.

<sup>101</sup> S. Boardman and G. Jones, 'Experiments on the Effects of Charring on Cereal Components', *Jnl. of Archaeol. Science*, 17 (1990), 1-11.

<sup>102</sup> Hubbard and al Azm, op. cit. note 100, p. 105.

storage, particularly if the grain was slightly damp. The low number of germinated grain suggests deliberate sprouting for malt had not taken place.

#### Pulses, Fruits and Nuts

Non-cereal food plants were poorly represented as is typical on British archaeological sites, but occasional pulses, fruit remains and nut-shell fragments were present. The pulses include *Vicia faba* var *minor* (Celtic or broad bean) and *Pisum sativum*, both presumably cultivated for human consumption. A single seed of *Vicia* cf. *sativa* subsp. *sativa* (possible cultivated vetch) was identified. There is documentary evidence for the cultivation of *Vicia sativa* subsp. *sativa* from the early 13th century.<sup>103</sup> Recently large seeded *Vicia sativa*, possibly the cultivated variety has been recorded from an 11th-century deposit at Northfleet, Kent and from a 9th- or 10th-century deposit at Drayton, Oxfordshire.<sup>104</sup>

Two *Prunus* stones were identified, one of *P. cf. avium* (possible cherry) and one *P. spinosa* (sloe). In addition nut shell fragments of *Corylus avellana* (hazel nut) were present, particularly in samples 51, 54 and 61. Minor fruits, which were noted in other contexts, include *Malus/Pyrus* sp. (apple or pear) recovered from an 11th-century deposit (context 764) and *Ficus carica* (fig) and *Vitis vinifera* (grape) from the 16th-century Kitchen (contexts 1026 and 1050). Fig and grape are common finds on medieval urban or high status sites. Also in context 1026 were bracken (*Pteridium aquilinum*) fronds, possibly present as flooring or bedding material. Bracken would not have been growing within Oxford but may have been collected from the acid soils on the hills around the town. Waterlogged bracken was also recovered from deposits at the Hamel in Oxford.<sup>105</sup>

Seed capsules of *Beta vulgaris* (beet) were noted in two samples and are likely to be of the subsp. *vulgaris*, cultivated beet. The seeds in the samples probably derived directly from the harvested vegetable or they indicate that it was cultivated in a previous season. The cultivation of sugar beet is relatively recent, possibly Napoleonic, in origin, and the origins of the leaf beets is unclear.<sup>106</sup> It is likely, therefore, that the capsules derive from beetroot.

#### Weeds

The wild flora includes several taxa which are characteristic weed species of cereal crops such as *Agrostemma githago* (corn cockle), *Valerianella dentata* (narrow fruited cornsalad) and *Anthemis cotula* (stinking mayweed). *Agrostemma githago* produces a large seed, which is difficult to separate from cereal grain by sieving. Similarly, *Anthemis cotula* forms a large composite seed head. Such seeds are likely to have remained with the grain as contaminants. Other primarily arable weeds, which also occur in other cultivated soils, were *Silene* cf. *noctiflora* (night-flowering campion), *Euphorbia helioscopia* (sun spurge) and *Lithospermum arvense* (corn gromwell).

The largest group of weed species are those that are characteristic of disturbed ground, which includes arable fields, as well as garden plots and uncultivated nitrogen-rich soils. This group includes *Chenopodium album* (fat hen), *Polygonum aviculare* (knotgrass), *Fallopia convolvulus* (black bindweed), *Odontites verna* (Red Barstia) and *Galium aparine* (goosegrass). *Odontites verna* has not been distinguished from *Eurphrasia* sp. (eyebright) on morphological criteria, but as the latter species tends to be a coastal plant, it is assumed the seeds are of *Odontites barsita*. *Agrimonia eupatoria* (agrimony) and *Arctium* sp. may have been growing on the field margins along with some of the grasses. *Bromus* subsect *Eubromus* may have been growing as an arable weed or on the field margins. *Agrostemma githago*, *Anthemis cotula*, *Galium aparine* and *Lithospermum arvense* tend to be characteristic of autumn sown crops, including bread-type wheats. *Anthemis cotula*, *Galium aparine* and with *Odontites verna* suggest the cultivation of heavy clay soils. *Fallopia convolvulus* is more characteristic of spring-sown barley crops. *Valerianella dentata* and *Rumex acetosella* tend to be characteristic of light sandy, circum-neutral to acidic soils.

Species of wet or damp environments and of grassland are present in most samples, but more so in the more mixed assemblages (see below), particularly sample 51. Some of these species do occur within archaeological arable assemblages, noticeably *Eleocharis palustris*, a rhizomatous species of at least seasonally wet ground.<sup>107</sup> *Eleocharis palustris* and *Carex* spp. are thought to have invaded arable fields in the past where they extend onto rather margin damp ground.<sup>108</sup> Other of the damp ground species are less likely to have derived from

<sup>103</sup> C.R.J. Currie, 'Early Vetches in Medieval England: a note', *Econ. Hist. Review*, 41 (1988), 114-16.

<sup>104</sup> R. Pelling, 'The Charred Plant Remains from Northfleet East Substation, Kent' (unpubl. OAU report); R. Pelling, 'The Charred Plant Remains', in D. Challinor, D. Petts, D. Poore and D. Score, 'Excavations at Manor Farm, Drayton, Oxfordshire' (forthcoming).

<sup>105</sup> M. Robinson, 'Waterlogged and Invertebrate Evidence' in Palmer, op. cit. note 85, pp. 124-207.

<sup>106</sup> S.G. Harrison, G.G.B. Mansfield and M. Wallis, *The Illustrated Book of Food Plants* (1985).

<sup>107</sup> S.M. Walters, 'Eleocharis', *Jnl. of Ecology*, 37.1 (1949), 192-206.

<sup>108</sup> M.K. Jones, 'The Arable Field: a botanical battleground', in M.K. Jones (ed.), *Archaeology and the Flora of the British Isles* (1988), 86-92.

harvested cereals. *Ranunculus cf. acris* (identified on the basis of small surface cell structure and sharp margin), is a species of damp grassland. *Alisma plantago-aquatica* is an aquatic species, which grows in the muddy sub-strata at the edges of slow flowing streams and rivers. *Isolepis setacea* (bristle club-rush) will sometimes occur in wet hay meadows. Several seed heads of *Juncus* sp. (rushes) were recovered from sample 51. Evidence for grassland habitats is provided by *Centaurea nigra* (lesser knapweed), *Lathyrus nissola* (grass vetchling), *Prunella vulgaris* (self heal) and *Plantago media/lanceolata* (plantain). This mixture of grassland species and wet ground plants would be appropriate for the utilisation of floodplain grassland for hay production.

Finally, some of the ruderal species of nitrogen-rich soils are unlikely to have derived from arable fields, but may have been growing around the town. Others may represent deliberate collection for food, perhaps from local hedgerows, such as *Rubus* sp. (blackberry/raspberry etc.) and *Sambucus nigra* (elderberry), as well as the *Corylus avellana* nuts. The bracken from the Kitchen area also suggests the collection of wild vegetation during later phases of activity.

The wild taxa, therefore, represent plants from a range of habitats including arable fields, or garden plots, as well as grassland and damp environments, hedgerows and areas within the town. The soils cultivated for arable crops seem to have been essentially circum-neutral to calcareous and both heavy clay soils and lighter sandy soils may have been cultivated. Taken together these species suggest that a range of locations around Oxford, including the hills some distance from the town, were exploited for both the cultivation of crops, possibly hay and the collection of wild resources such as bracken and hedgerow foods.

### Discussion

#### Sample Composition

The analysed Phase 1 and 2 samples fall into three recognisable types clearly visible in Table 20: grain-rich, mixed grain and weeds (semi-clean grain) and mixed deposits. Samples 41, 42, 43, 44, 68 and 69 are grain-rich with the grain forming over 90% of each sample except 69. Weeds make up most of the rest of these samples, while chaff and pulses/nuts are very minor components. Sample 44 is clearly dominated by barley, forming c. 90% (Table 21). The other samples contain mostly wheat. In all the grain-rich samples rye and oats are only present as minor contaminants. Samples 41, 42, 43 and 44 (contexts 664, 808 and 665) produced very high concentrations of cereal grains which were exceptionally well preserved. The weed seeds present in these samples are few in number and generally large seeded, including *Agrostemma githago*, *Chenopodium album*, *Carex* and *Bromus*, with some species of composite seed heads including *Anthemis cotula* and the small seeded grasses. These weeds are all likely to be occasional contaminants of an otherwise fully processed clean grain. The absence of chaff is unlikely to be the result of differential preservation given that the grain is so well preserved. It is suggested, therefore, that these samples represent stored clean grain burnt *in situ*.

The concentration of remains in samples 68 and 69 is much lower although the preservation is still very good. These samples, like 43 and 44, are from a previous burning episode, pre-dating Building 1. The composition is again consistent with fully processed grain. The concentration of remains was much lower than in samples 41 to 44, however, so these early deposits may be the result of a deliberately discarded processed crop.

Two samples produced weeds and grain in similar proportions with little chaff or pulses/nuts (samples 66 and 67). These samples are particularly striking because the cereals are dominated by wheat, forming in the region of 90% of the identifiable cereal grain assemblage. The weed seeds again tend to be dominated by large seeded varieties or species which form composite seed heads. Arable weeds dominate, while some damp ground and grass seeds were also present. These two samples are interpreted as semi-clean wheat grain, the product of fine sieving.<sup>109</sup> The fact that these samples seem to contain material from a single harvest and/or burning events raises the possibility that they were also burnt *in situ* in the pre-building phase and at the end of Phase 1, and as such may also represent stored material. Certainly they indicate that grain did not enter the site in a fully processed state, hence some final cleaning must have taken place within the vicinity of the building.

<sup>109</sup> G. Hillman, 'Reconstructing Crop Husbandry Practices from the Charred Remains of Crops', in R.J. Mercer (ed.), *Farming Practice in British Prehistory* (1981), 123-62; G. Hillman, 'Interpretation of Archaeological Plant Remains: The application of ethnographic models from Turkey', in W. van Zeist and W.A. Casparie (eds.), *Plants and Ancient Man: Studies in Palaeoethnobotany* (1984), 1-41; G. Jones, 'Interpretation of Archaeological Plant Remains: Ethnographic models from Greece', in van Zeist and Casparie, op. cit., pp. 43-61.

TABLE 20. THE CHARRED SEEDS AND CHAFF

	Sample	41	42	43	44	51	54	60	61	66	67	68	69	
	Context	664	664	808	665	837	845	852	587	866	917	907	927	
	Feature	-	-	-	-	834	834	-	-	-	-	-	-	
	Fraction	25%	25%	100	25%	100	100	100	100	100	100	100	100	
	Volume (litre)	20	30	40	8	40	20	40	20	20	24	40	4	
	Phase	1/2	1/2	1	1	1	1	2	2	1	1	1	1	
	Description	Habitat	layer	layer	layer	layer	pit fill	pit fill	burning	fire	layer	layer	layer	layer
<b>Grain</b>														
<i>Triticum</i> sp.	Wheat, free-threshing, short		217	75	159	-	29	63	11	15	52	50	23	28
<i>Triticum</i> sp.	Wheat, free-threshing grain		174	71	98	35	38	59	14	10	49	120	29	30
<i>Triticum</i> sp.	Wheat, free-threshing, germinated		-	-	-	-	-	-	2	-	-	-	-	1
<i>Triticum</i> sp.	Wheat, cf. free-threshing		69	69	93	24	-	61	-	21	68	87	7	-
<i>Triticum</i> sp.	Wheat		102	72	48	12	50	38	9	13	15	29	62	-
<i>Hordeum vulgare</i>	Barley, hulled asymmetric		6	17	5	40	1	6	-	-	1	3	2	-
<i>Hordeum vulgare</i>	Barley, hulled straight		15	27	8	90	5	7	7	-	1	-	5	4
<i>Hordeum vulgare</i>	Barley, hulled straight, germinated		-	-	-	1	-	-	-	1	-	-	-	-
<i>Hordeum vulgare</i>	Barley, hulled, germinated		-	-	-	-	-	-	1	1	-	-	-	-
<i>Hordeum vulgare</i>	Barley, hulled		85	75	44	335	20	38	11	12	1	26	29	17
<i>Hordeum vulgare</i>	Barley		26	136	18	133	30	10	-	9	-	5	19	5
<i>Avena</i> sp.	Oats		1	6	1	6	91	33	22	38	3	1	-	-
<i>Avena</i> sp.	Oats, germinated		-	-	-	-	-	-	2	-	-	-	-	-
<i>Secale cereale</i>	Rye		11	6	11	2	1	3	3	6	-	1	-	3
<i>Secale cereale/Triticum</i> sp.	Rye/Wheat		8	5	2	7	5	7	2	1	2	6	6	1
Cerealia indet	Indeterminate		37	59	37	33	32	66	42	43	51	62	137	24
Cerealia indet	Indeterminate embryo		-	54	17	59	4	-	-	-	2	2	8	-
<b>Chaff</b>														
<i>Triticum</i> sp.	Wheat, free-threshing rachis		1	4	1	-	1	-	-	-	-	-	-	-
<i>Triticum</i> sp.	Wheat, basal rachis		-	-	-	-	1	-	-	-	-	-	-	-
<i>Hordeum vulgare</i>	Barley, rachis		-	-	-	1	-	-	-	-	-	-	-	-
<i>Secale cereale</i>	Rye rachis		1	-	-	-	-	1	5	7	-	-	-	-
<i>Secale cereale/Hordeum vulgare</i>	Rye/Barley rachis		-	-	-	-	1	-	1	-	-	-	-	-
<i>Avena sativa/strigosa</i>	Common/Bristle Oat floret base		-	-	-	4	-	-	-	-	-	-	-	-
<i>Avena</i> sp.	Oats, floret base		-	-	-	-	-	-	-	-	-	-	-	-
Cereal size	Cereal sized culm node		-	-	-	-	13	1	1	6	5	-	-	-

**'Others'**

<i>Vicia faba</i>	Celtic/Broad Bean		1	-	-	-	-	1	-	-	-	-	-	-
<i>Vicia</i> cf. <i>faba</i>	cf. Celtic/Broad Bean		-	-	-	-	-	2	-	-	-	-	-	-
<i>Vicia</i> cf. <i>sativa</i> subsp. <i>sativa</i>	cf. Fodder Vetch		-	-	-	-	-	1	-	-	-	-	-	-
<i>Pisum sativum</i>	Pea		-	-	1	-	-	-	-	-	1	-	-	-
<i>Vicia/Pisum</i> sp.	Bean/Vetch/Pea		2	1	-	1	2	2	13	-	-	3	2	4
<i>Prunus</i> cf. <i>avium</i>	cf. Cherry stone		-	-	-	-	-	1	-	-	-	-	-	-
<i>Prunus spinosa</i>	Sloe stone		-	-	-	-	-	-	-	-	-	1	-	-
<i>Corylus avellana</i>	Hazel nut shell fragments		-	2	-	-	41	10	14	124	-	-	-	-
<i>Beta vulgaris</i>	Beet, seed capsule		-	-	-	-	1	-	-	1	-	-	-	-

**Weeds**

<i>Ranunculus</i> cf. <i>acris</i>	Meadow Buttercup	Gd	-	-	-	-	-	-	-	1	-	-	-	-
<i>Ranunculus</i> subgen <i>Ranunculus</i> cf. <i>Ranunculus</i> sp.	Buttercup/Spearwort	D	-	-	-	-	-	-	3	-	-	1	-	-
Cruciferae			-	1	-	-	-	-	-	-	-	-	-	-
<i>Silene</i> cf. <i>noctiflora</i>	Night-flowering Campion	AD	-	-	-	-	1	-	-	1	-	-	-	-
<i>Silene</i> sp.	capsule tip	AD	-	-	-	-	1	-	-	-	-	-	-	-
<i>Agrostemma githago</i> cf. <i>Agrostemma githago</i>	Corn Cockle cf. Corn Cockle	A	8	2	5	-	4	-	9	4	1	1	1	1
<i>Stellaria media</i> agg.	Chickweed	AD	-	-	-	-	7	4	-	4	-	-	-	-
<i>Stellaria graminiae</i>	Lesser Stichwort	EGWl	-	-	-	-	-	1	-	-	-	-	-	-
Caryophyllaceae			-	-	-	1	5	-	2	-	8	-	-	-
<i>Chenopodium album</i>	Fat Hen	CDn	2	1	1	1	5	6	47	23	1	28	-	-
<i>Atriplex</i> sp.	Orache	CDn	1	2	-	-	2	3	1	3	2	6	-	-
Chenopodiaceae			-	1	-	8	24	19	47	53	106	63	4	-
<i>Malva sylvestris</i>	Common Mallow	DR	-	-	-	1	1	-	-	-	-	-	-	-
<i>Lathyrus nissolia</i> cf. <i>Lathyrus</i> cf. <i>nissolia</i>	Grass Vetchling cf. Grass Vetchling	G	-	-	-	-	-	-	-	-	7	-	-	-
<i>Vicia/Lathyrus</i> sp.	Vetch/Tare/Vetchling		1	1	1	-	1	5	7	1	7	13	-	-
<i>Medicago/Trifolium/Lotus</i> sp.	Medick/Clover/Trefoil	G	1	1	-	-	7	4	11	4	9	19	-	7
<i>Rubus</i> sp. cf. <i>Potentilla</i> sp.	Blackberry/Raspberry etc Cinquefoil/Silverweed	DW DG	-	-	-	-	-	-	14	2	1	-	-	-
<i>Agrimonia eupatoria</i> cf. <i>Torilis japonica</i>	Agrimony Upright Hedge-parsley	HF HG	-	-	-	-	-	1	-	-	-	-	-	-
Umbelliferae			-	-	-	-	2	1	1	3	-	2	-	-
<i>Euphorbia helioscopia</i>	Sun Spurge	A	-	-	-	-	-	-	-	-	-	-	1	-
<i>Polygonium aviculare</i>	Knotgrass	AD	-	-	-	-	-	1	4	2	4	-	1	-

<i>Fallopia convolvulus</i>	Black Bindweed	AD	-	-	-	-	-	1	1	-	-	2	-	-
<i>Rumex acetosella</i> agg.	Sheeps Sorrel	CGEa	-	-	-	-	-	-	-	6	-	-	-	-
<i>Rumex</i> sp.	Docks	AD	-	-	1	-	3	5	-	13	23	9	2	1
Polygonaceae			2	-	1	-	-	3	-	22	40	6	5	1
<i>Urtica dioica</i>	Stinging Nettle	DGHWn	-	-	-	-	-	-	-	1	-	-	-	-
<i>Anagalis</i> type	Pimpernel Type		-	-	-	-	-	-	2	-	-	-	-	-
<i>Lithospermum arvense</i>	Corn Gromwell	A	-	-	-	-	-	-	1	-	-	-	-	-
<i>Odontites verna/Euphrasia</i> sp.	Red Barstia/Eyebright	CDEGH	-	-	-	-	2	1	-	-	-	-	-	-
<i>Prunella vulgaris</i>	Selfheal	Gcd	-	-	-	-	1	-	-	-	-	-	-	-
cf. <i>Prunella vulgaris</i>	Selfheal		-	-	-	-	-	-	1	-	-	-	-	-
<i>Lamium</i> sp.	Dead-nettle	CDH	-	-	-	-	1	-	-	-	-	-	-	-
Labiatae	Small seeded		-	-	-	-	1	-	-	-	1	3	-	-
Labiatae			-	-	-	-	1	-	-	-	-	-	-	-
<i>Plantago media/lanceolata</i>	Plantain	GD	2	1	1	-	-	2	-	2	1	2	-	-
<i>Plantago major</i>	Plantain	CGRo	-	-	-	-	3	-	-	-	1	-	-	-
<i>Galium aparine</i>	Goosegrass	DH	-	1	-	3	-	-	2	6	1	-	1	1
<i>Galium</i> sp.			-	-	-	-	-	-	-	21	29	-	1	-
<i>Sambucus nigra</i>	Elder Berry	ADRWn	-	1	-	-	3	4	-	1	-	-	-	-
<i>Valerianella dentata</i>	Narrow-fruited Cornsalad	A	1	-	-	-	-	1	1	-	-	2	-	-
<i>Anthemis cotula</i>	Stinking Mayweed	Adh	3	12	3	18	83	11	54	48	3	2	1	3
<i>Arctium</i> sp.		FD	1	-	-	-	-	-	-	-	-	-	-	-
<i>Cisium/Carduus</i> sp.	Thistle	GD	-	-	-	-	-	-	1	-	-	-	-	-
<i>Centaurea nigra</i>		G	-	-	-	-	2	-	-	-	-	-	-	-
<i>Centaurea</i> sp.			-	-	-	-	-	-	-	-	-	2	-	-
<i>Lapsana communis</i>		ADR	-	-	-	1	2	-	-	-	-	-	-	-
Compositae	Small seeded		-	-	-	-	27	4	-	8	-	-	-	-
<i>Alisma plantago-aquatica</i>		P	-	-	-	-	1	-	-	-	-	-	-	-
<i>Juncus</i> sp.	Rush seed head	EDMp	-	-	-	-	37	-	-	-	-	-	-	-
<i>Eleocharis palustris</i>	Common spikerush	M	-	-	-	-	35	6	11	27	-	2	-	2
<i>Eleocharis palustris</i>	Common spikerush, silica	M	-	-	-	-	-	-	1	-	-	-	-	-
<i>Isolepis setacea</i>	Bristle Club-rush	Gd	-	-	-	-	-	-	-	-	-	2	-	-
<i>Carex</i> sp. three sided	Sedges	GM	-	4	-	5	15	7	10	19	13	31	1	4
<i>Carex</i> sp. two sided	Sedges	GM	2	-	3	2	12	4	11	16	7	25	1	2
Cyperaceae			1	1	-	-	1	3	-	3	9	2	-	-
<i>Lolium perenne</i> type		D	-	-	-	-	1	-	-	-	-	-	-	-
<i>Bromus</i> subsect <i>Eubromus</i>	Brome Grass	AFG	3	1	1	1	7	2	7	13	2	4	-	-
Gramineae	Grass, large seeded		2	6	5	-	11	4	5	-	-	1	-	-
Gramineae	Grass, small seeded		5	3	5	2	13	19	10	13	2	8	3	1

Monocotyledon	Rhizome	-	-	-	-	-	-	1	-	-	-	-	
Indet	seed	4	4	4	3	36	21	52	64	-	59	5	11
Indet	tree-bud	-	-	-	-	1	-	-	-	-	-	-	-
Indet	cf galls?	-	-	-	-	2	-	-	-	-	-	-	-
Indet	Insect lava	-	-	-	-	-	1	2	-	-	1	-	-
Worm Capsules		-	-	-	-	-	-	-	-	7	6	-	-

*Key to Habitats*

A Arable	M Marsh	a acid
C Cultivated	P Shallow water, ponds & ditches	c calcareous
D Disturbed	R Roadsides	d dry
E Heath	S Scrub	h heavy
F Field Margins	W woodland	l light, sandy soils
G Grassland		n nitrogenous soils
		o open habitats

The four remaining samples which were analysed produced good concentrations of material, but generally were more mixed, i.e. contained weeds, grain, pulses, nut-shell and slightly more chaff than the other samples. It is noticeable that the cereal assemblages are also mixed with oats and rye forming a more significant component than in other samples. The wild taxa includes more non-arable weed type species, including the large number of wet or damp ground plants and grassland species. Such assemblages, therefore, are characteristic of mixed secondary deposits which represent waste of perhaps several processing episodes and harvests and other domestic rubbish such as spent hay or roofing material. It is thought very possible that all these deposits, therefore, are the result of major burning episodes, the material coming from a range of sources including cereal processing waste, bedding, flooring and thatch.

The remaining Phase 1 and 2 deposits which were not analysed are presumed to contain either mixed secondary deposits, or background scatters of material derived from multiple cereal processing episodes and/or *in situ* burning. Sample 12 (context 695, Phase 3) contained frequent fragments of grass/cereal stem which may have derived from thatch or other use of straw. The extent of possible re-working and redepositing of charred material on archaeological sites was demonstrated at Romsey in Hampshire.<sup>110</sup> Many of the background scatters of grain at the Lincoln College site are likely to have derived from the major conflagration events resulting in the burning of stored grain, or from the large mixed deposits of crop-processing debris and other waste seen in pit 834 and elsewhere.

#### *Distribution and processing activities*

Despite the extent of disturbance on the site it is still possible to suggest some variation in the temporal and spatial distribution of the material. In the pre-building phase some cereal storage may have taken place on the site, principally involving wheat and barley. The large, concentrated, grain-rich deposits are derived from the northern and western areas. It is possible that these areas were used to store grain. Both wheat and barley appear to have been stored here, but in separate containers/bags with spilling and mixing of the grain occurring during the fire. Sample 66 (context 866, late Phase 1) derived from the north of the excavated area where several posthole groups and pits were located. This wheat grain was semi-clean, suggesting that the final cleaning or picking over for weeds and damaged grain occurred at or in the building. The more mixed deposits which contain a greater proportion of cereal processing waste, as well as other food debris and possible hay or even roofing material, were derived from the east and south-eastern areas, in both Phases 1 and 2. The material from pit 834 probably derives from a 'tidying' up phase after the major fire, or could represent material deliberately burnt as fuel or as waste disposal.

#### *Diet and economy in the late Saxon town and the 15th- to 18th-century college*

The cereal-related activity associated with the pre-building phase and the Phase 1 building clearly involves wheat and barley. Oats and rye were minor crops, possibly present merely as weeds. While wheat was the principal bread crop throughout the medieval period and presumably the late Saxon period, barley may have been more usually used for beer making or even for fodder. The degree of cleaning would be unnecessary if the grain was intended for fodder, but conversely no direct evidence for the malting of barley is present in the samples. It is possible, therefore, that the grain was being stored either for bread or for malting. A similarly large and well preserved grain-rich deposit, consisting almost entirely of free-threshing *Triticum* sp., also thought to have originated from a burnt building was sampled from beneath All Saints Church.<sup>111</sup> It is possible that this area had been involved in baking or perhaps stabling for some time, and also demonstrates the potential risk of fires in this part of the town.

The evidence for pulses and other vegetable foods is limited as often found in archaeological assemblages, particularly when charred. Some beans, peas and possible fodder vetch were being utilised as were some wild and cultivated fruits and nuts. From elsewhere within Oxford however some

<sup>110</sup> F. Green, 'Landscape Archaeology in Hampshire: The Saxon plant remains', in J. Renfrew (ed.), *New Light on Early Farming* (1991), 363-77.

<sup>111</sup> Robinson and Wilson, *op. cit.* note 84.

waterlogged deposits provide additional information about the non-cereal element of the diet and economy of the town at this time. An 11th-century deposit of pea and bean threshing debris was recovered from up against the Norman bridge on St. Aldate's.<sup>112</sup> Processing of crop plants was clearly taking place at in various areas of the town and different processing events may have been taking place in different areas.

The 16th-century Kitchen deposits provided only limited evidence for diet within the early college. A very slight cereal component suggests wheat and rye was available. Probable imported fruits were represented with fig and grape, both of which are known from medieval Oxford.<sup>113</sup> More luxurious items were recovered from a 17th-century cess pit within the Provost's lodging at Oriel College: mustard, black pepper, grape/raisin, raspberry, wild/alpine strawberry, plum, apple, fig, black mulberry, walnut and hazel nut.<sup>114</sup>

### Conclusions

The chance burning of late Saxon buildings resulted in the remarkable preservation of *in situ* grain deposits, enabling insights into the cereal economy and economic activity in this area of the town. Grain-rich deposits from the New Wine Cellar area and similar deposits from under All Saints Church suggest that a quite substantial building or complex was associated with large scale storage of free-threshing wheat and barley and possibly with baking or malting.

Large pit deposits of mixed material probably represent a cleaning up phase after the Phase 1 buildings had been destroyed. In addition to containing mixed cereal processing waste, these deposits suggest the use of floodplain grassland for hay, presumably for flooring or animal bedding/feed. Furthermore, the deposits provide evidence for the use of broad bean, pea, possible fodder vetch, hazel nuts, possible cherry, sloes, blackberry/raspberry and apple/pear, possibly dietary components of the occupants or workers of the building.

To conclude, the deposits from Lincoln College have added an enormous amount of new information to the growing body of evidence about the environment and economic activity with the late Saxon/early Norman town of Oxford. A degree of urban organisation appears to be emerging within this area concerned with baking or possibly malt production, and prone to destructive fires.

### THE WOOD CHARCOAL by DANA CHALLINOR

A total of seven samples were selected for charcoal analysis. The samples covered Phases 1 to 5 of the site. The majority of the samples were from deposits of burnt material, associated with either domestic refuse or burnt building remains. The aim of the charcoal analysis was to examine the changing uses of structural wood and fuelwood over time.

### Methodology

The samples were processed by flotation in a modified Siraf-type machine, with sample sizes ranging from 2 to 30 litres in volume (Table 21). The resultant flots were air-dried and divided into fractions using a set of sieves. Particularly large samples were divided and a fraction of the sample examined. The charcoal was sorted from other remains (to 2 mm.) and then sorted into groups based on the anatomical features observed at x10 and x20 magnification. Representative fragments from each group were then selected for further examination using a Meiji incident-light microscope at up to x400 magnification. Identifications were made with reference to Schweingruber, Hather and modern reference material.<sup>115</sup> In addition, where the condition of the charcoal permitted it, the maturity of the wood was assessed.

<sup>112</sup> M. Robinson, 'Agricultural Debris against the Norman Bridge', in B. Durham, 'The Thames Crossing at Oxford: Archaeological Studies 1979-82', *Oxoniensia*, xlix (1984), 57-100.

<sup>113</sup> Robinson and Wilson, *op. cit.* note 84.

<sup>114</sup> R. Robinson, 'Waterlogged Plants and Invertebrates', *CBA Group 9 Newsletter*, 11 (1982), 62-3.

<sup>115</sup> F.H. Schweingruber, *Microscopic Wood Anatomy* (1990); J.G. Hather, *The Identification of Northern European Woods: A Guide for Archaeologists and Conservators* (2000).

TABLE 21. RESULTS OF THE CHARCOAL ANALYSIS BY FRAGMENT COUNT

Phase		1	2			4	5	
Sample number		54	10	42	61	63	40	71
Context number		845	660	664	587	882	1025	1026
Volume (litre)		20	8	30	20	2	10	2
% flint identified		12.5	12.5	12.5	12.5	50	3.125	6.25
Description		Pit 834	Burning deposit	Burning deposit	Building fire	Burning deposit	Posthole 1024	Fireplace in kitchen
<i>Fagus</i> sp.	beech	3	1	3	-	4	108r	43r
<i>Quercus</i> sp.	oak	33h	49h	52	89	31	6	11rh
<i>Corylus</i> sp.	hazel	8	6	9r	2	3	-	5r
<i>Prunus</i> sp.	cherry/blackthorn	-	-	-	2r	2	-	6
Maloideae	hawthorn, apple, pear	8r	19r	7r	4r	-	-	-
<i>Fraxinus</i> sp.	ash	1	-	7	-	8	3	-
Indeterminate		6	6	6	5	2	6	6
Total no. of fragments		59	81	84	102	50	123	71

r = presence of roundwood fragments; h = presence of heartwood

### Results

The results are given in Table 21. While it is acknowledged that there are differential rates of fragmentation in charcoal, nevertheless, fragment counts have been used in this report to demonstrate the dominance of individual taxa. Nomenclature follows Stace.<sup>116</sup>

Six taxa were positively identified: *Fagus* sp. (beech), *Quercus* sp. (oak), *Corylus* sp. (hazel), *Prunus* sp. (cherry/blackthorn), Maloideae (hawthorn, pear, apple) and *Fraxinus* sp. (ash). It was not possible to identify to species level and the genera of the Maloideae family are anatomically too similar to differentiate. In all samples, there were some charcoal fragments categorised as indeterminate due to poor preservation. In general, however, the preservation of the charcoal was extremely good.

### Discussion

*Phases 1 and 2:* All of the samples (54, 10, 42, 61, 63) contained mixed assemblages, with a minimum of four taxa present in each. *Quercus* (oak) was the only taxa present in all samples and dominated all five assemblages (Table 22).

It is clear that *Quercus* (oak) made up c. 60% of these assemblages, with the exception of sample 61 which consisted of 87% oakwood. This may be significant as sample 61 was from a fire deposit marking the burning down of the building at the end of Phase 2. Sample 60 (context 852), also from the building fire, was not analysed, but assessment showed that the assemblage was also dominated by oak. Therefore, it is likely that the high percentage of oak in these samples is due to its use as structural timber. Certainly, the use of oak timbers in buildings has been recorded from the earliest prehistoric times.<sup>117</sup> Indeed, all of the taxa present in the sample could also have been used for structural purposes or wooden furniture and fittings; for example, all of these taxa were recovered from burnt buildings of late Saxon/early medieval date at

<sup>116</sup> C. Stace, *New Flora of the British Isles* (1997).

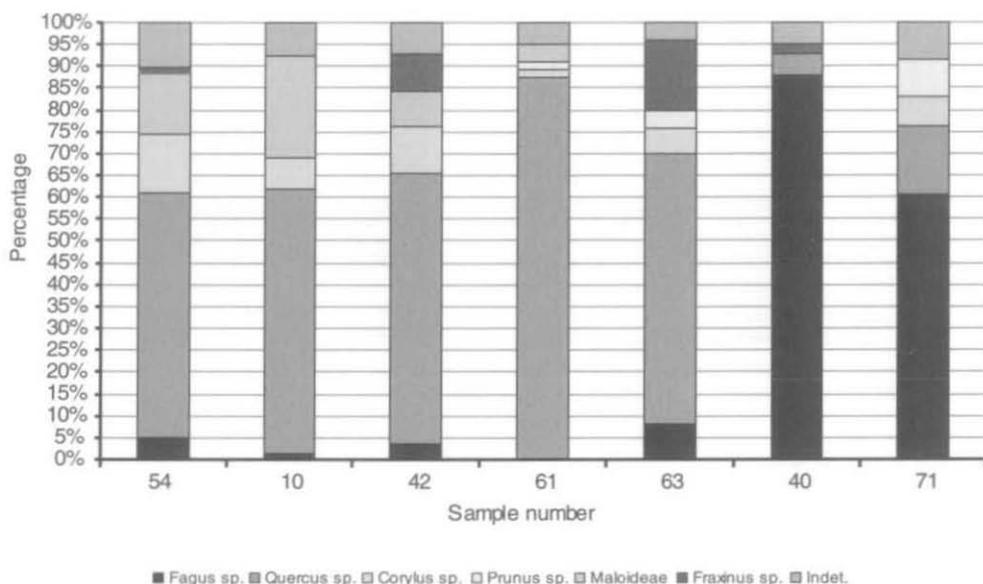
<sup>117</sup> J.M. Coles, S.V.E. Heal and B. Orme, 'The Use and Character of Wood in Prehistoric Britain and Ireland', *Proc. of Prehistoric Soc.* 44 (1978), 22.

Ipswich.<sup>118</sup> Hazel, in particular, would have been an appropriate timber for wattles in wattle and daub construction as it is easily coppiced to produce fine, straight poles.<sup>119</sup>

However, it is interesting to note that all the Phase 1 and 2 samples have similar assemblages and that all the taxa represented have properties that make them good for both construction and for burning.<sup>120</sup> It is therefore uncertain from the charcoal analysis whether these assemblages represent the remains of burnt building debris or of domestic fires. The burnt food remains present another possibility; *Corylus* nutshell, *Prunus* stones and *Malus/Pyrus* (apple/pear; members of the Maloideae family) fruits are all present in deposits of the 11th and 12th centuries.<sup>121</sup> This suggests that the structural charcoal could have been mixed with discarded leftovers from food preparation. However, it is not clear whether the archaeological assemblages are the result of leftovers thrown on cooking fires, or the accidental burning. The assemblages of charred cereal and food remains suggest the latter.<sup>122</sup>

Consequently, the charcoal assemblages from Phases 1 and 2 are mixed and may be the result of several burning episodes. Oak is likely to have been the major structural timber in Building 3, but it may also have been used as a fuel in domestic fires. The provenance of the other taxa has presented several possibilities: furniture/fittings, kindling, discarded or stored foodstuffs.

TABLE 22. SAMPLE COMPOSITION



<sup>118</sup> P. Murphy, *Review of Wood and Macroscopic Wood Charcoal from Archaeological Sites in the West and East Midlands Regions and the East of England* (2001), 19.

<sup>119</sup> R. Gale and D. Cutler, *Plants in Archaeology: Identification Manual of Vegetative Plant Materials Used in Europe and the Southern Mediterranean to c. 1500* (2000), 88-9.

<sup>120</sup> H.L. Edlin, *Woodland Crafts in Britain: An Account of the Uses of Trees and Timbers in the British Countryside* (1949).

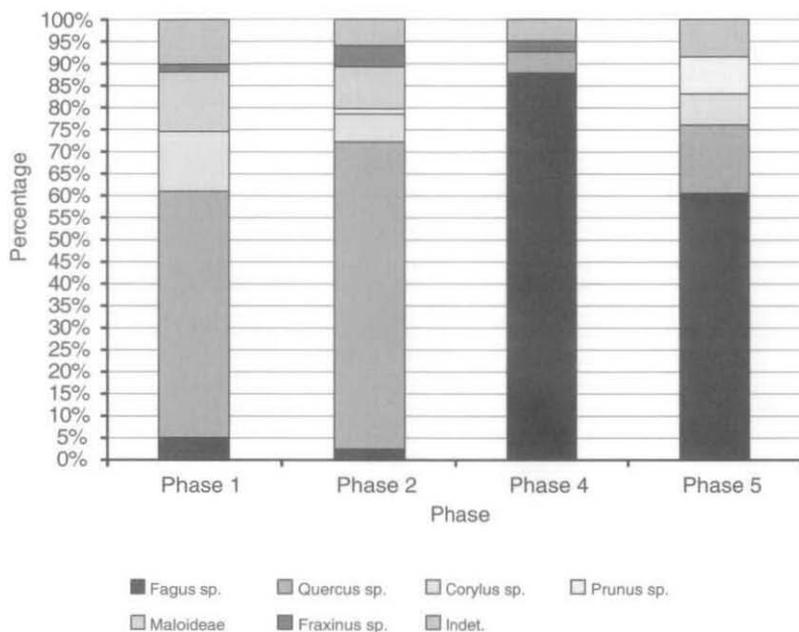
<sup>121</sup> R. Pelling, this report.

<sup>122</sup> *Ibid.*

*Phases 4 and 5:* The samples from these phases (samples 40 and 71) are from the Kitchen excavations. Both produced much smaller quantities of *Quercus* (oak) charcoal (5-15%) and were clearly dominated by *Fagus* (beech), which constituted 60-90% of the assemblages. This is a marked difference from the earlier phases (Table 23).

Sample 40 is from a posthole associated with the Phase 4 scaffolding. Therefore, the fill is probably slightly later in date and represents the remains of kitchen debris. Sample 71 is a Phase 5 deposit in the southern fireplace of the Kitchen. Both of these deposits show that *Fagus* was the preferred fuelwood for cooking; it makes a good charcoal and may have been used in this form.<sup>123</sup> The fact that a number of the *Fagus* fragments were roundwood (Table 21) supports this hypothesis because it is more likely that the smaller branches, rather than the trunkwood, would have been used for fuel.

TABLE 23. SPECIES COMPOSITION BY PHASE



### Conclusion

The analysis of the wood charcoal corresponds closely with the results from the charred plant remains.<sup>124</sup> It is worth noting that the species represented in the assemblages from Lincoln College are all appropriate for their period and would have been locally available for use as fuelwood, construction or food resources. It is clear that there was a change over time from the predominant use of oak as fuel to the use of beech in cooking fires.

<sup>123</sup> Edlin, op. cit. note 120.

<sup>124</sup> R. Pelling, this report.

## DISCUSSION

*Lincoln College before the university: the late Saxon and early medieval periods*

The excavations at Lincoln College have provided evidence of occupation on the site from at least the early 11th century. The earliest activity, on the site of the New Wine Cellar, is comparable to the spread of charred grain overlying burnt wattle structures, dated to AD 880-90, at All Saints Church to the south (now Lincoln College library).<sup>125</sup> The spreads at Lincoln College have not been firmly dated, but the stratigraphy and two sherds of St. Neots ware point to a date at the beginning of the 11th century or earlier. Moreover, even if the spreads are not as early as those at All Saints Church, there is still an interesting continuity of land-use in the area, i.e. the storage and processing of grain. The spreads of charred grain at Lincoln College display concentrations of barley (context 665, sample 44) and wheat (context 917, sample 67), which suggest that wheat and barley were stored separately. Furthermore, the building was used not only for the storage of grain, but also for grain-processing.<sup>126</sup> The lack of clear structural features must be explained by the density of later occupation, yet the single stakehole and gully may represent the remains of the standing granary. The reason for the burning episode is unclear, but may be the result of an accidental fire, or the burning of a deliberately discarded processed crop; it is also tempting to postulate that the area was burnt during the Danish sack of Oxford in 1009.<sup>127</sup>

The evidence for buildings after this initial burning episode is strong: two buildings in Phase 1 and a third in Phase 2. This is of particular interest for the study of occupied areas in Oxford. The Lincoln College site is significant in two ways: firstly, it is relatively far to the east, while still being within the confines of the *burh*, and secondly it is not located close to any of the major roads through Oxford.<sup>128</sup> Therefore, Lincoln College provides further evidence for the later development of the eastern side of Oxford and for occupation and commercial activity away from the central streets. Furthermore, the excavations at Lincoln College are particularly significant due to the quality and quantity of evidence for above-ground structures and building plans, in the form of postholes, stakeholes and beamslots (that luckily escaped the later pitting and truncation by well cut 537), which are notoriously rare in Oxford and beyond.<sup>129</sup>

In addition to the above-ground structures, evidence was also found for a cellar pit in Building 3. No evidence was found for cellars in the Phase 1 buildings, but this must in part reflect the large numbers of later intrusions on the site. The Building 3 cellar always had at least one row of stakeholes down one side (and may have had two at a later period); their distribution suggests that they were in double lines forming a framework for wattle and daub walls, as is usual in the late Saxon period.<sup>130</sup> This cellar pit also had a clay lining, in keeping with other cellar pits in Oxford.<sup>131</sup> The low number of finds from the cellar pit fills suggests that the pit was not used as a rubbish pit, but rather, as Sturdy and Munby suggest, may have been utilised as a meat and food storage area.<sup>132</sup> The most interesting aspect of this cellar

<sup>125</sup> T.G. Hassall, 'Excavations at Oxford 1973-74: Sixth and final interim report', *Oxoniensia*, xxxix (1975), 55.

<sup>126</sup> R. Pelling, this report.

<sup>127</sup> T.G. Hassall, 'The Oxford Region from the Conversion to the Conquest', in G. Briggs, J. Cook and T. Rowley (eds.), *The Archaeology of the Oxford Region* (1986), 112.

<sup>128</sup> It is similar in this latter respect to Hinxley Hall: Halpin, *op. cit.* note 49.

<sup>129</sup> D.M. Wilson, *The Archaeology of Anglo-Saxon England* (1976), 70; Hassall, *op. cit.* note 127, p. 122.

<sup>130</sup> Wilson, *op. cit.* note 129, p. 84.

<sup>131</sup> Sturdy and Munby, *op. cit.* note 53, p. 92.

<sup>132</sup> *Ibid.*

pit is its date. It has recently been suggested that cellar-pits at Oxford are a phenomenon of the first half of the 11th century,<sup>133</sup> but the Building 3 cellar pit, which has all the hallmarks of a true cellar pit, must date from the second half of the 11th century. This new evidence, therefore, puts into doubt the previous theory of cellar-pits belonging to the earlier 11th century.

The fate of these buildings is also of interest. All three buildings were destroyed in fires, and therefore, the area of the New Wine Cellar excavation was the unfortunate site of three conflagrations within approximately 100 years. Although the fire at the end of Phase 2 has led to remarkable preservation of the building features and the materials from which the building was constructed, in many ways the fire at the end of Phase 1 is more intriguing. Evidence for this fire came almost exclusively from the fills of four pits (bar one possible destruction deposit in the northern area of Building 1 (866)) at the end of Phase 1 and the beginning of Phase 2: pits 834, 930, 975 and 782. All of these pits shared the characteristic of having multiple fills (from three to five), the finds from which produced some very interesting results.

There is strong evidence to suggest that these pits were cut after the fire in Phase 1 in order to clear up the debris from that fire. Firstly, the depths of these pit deposits points to rapid filling and deposition. Secondly, the majority of these pit fills contained charcoal, with the exception of 981 that was a deliberate backfill and therefore contained nothing (931 is also an exception, since it was not fully excavated). Samples were taken from the fills of pits 834 and 782. The environmental evidence from pit 834 (samples 51 (837) and 54 (845)) suggests that the burnt material derived from several sources including cereal processing waste, bedding, flooring and thatch, i.e. a mixed dump deposit after a fire.<sup>134</sup> The samples from 782 were not fully analysed, but also showed characteristics of a mixed assemblage containing processed cereal and weeds such as sedges, corn cockle and stinking mayweed, as well as pulses and hazel nuts.<sup>135</sup> Thirdly, 92.8% of the pottery from the fills of these pits was St. Neots ware, which is typical of the first half of the 11th century.<sup>136</sup> It is likely, therefore, that these assemblages derived from the Phase 1 buildings. Finally, it would appear from Table 12 that only 10% of the hand-retrieved Saxon (11th-century) bone assemblage came from Phase 1 deposits. However, this striking bias can be explained if the Phase 2 pits contained some of the Phase 1 bone, in which case the number of bones increases to 299; 22% of the Saxon assemblage. Therefore, it is possible that the majority of bone from the Phase 1 structures was deposited in rubbish pits outside and probably to the south of the buildings, while the bone in the buildings at the time of the fire was buried in the 'clearing-up' pits, hence the low percentage of Saxon bone from Phase 1 deposits. In addition, pit fill 837 produced 1244 g. of daub, which showed signs of burning as well as a piece of burnt shelly limestone.

Furthermore, the distribution of finds in these pits and the distribution of the pits themselves points to some interesting ideas about the use of space in the Phase 1 buildings. Pits 782 and 834 contain typical domestic assemblages, in particular large quantities of pottery: pit 782, for example, produced 65.7% of the St. Neots ware assemblage. Substantial amounts of bone also came from these pits, with pit 834 producing the largest assemblage of large mammal bone and fill 786 (pit 782) producing 392 fish bones.<sup>137</sup> 77% of the entire

<sup>133</sup> OAU, *Oxford Before the University* (forthcoming).

<sup>134</sup> R. Pelling, this report.

<sup>135</sup> Pelling, *op. cit.* note 17.

<sup>136</sup> P. Blinkhorn, this report.

<sup>137</sup> C. Ingrem, this report.

Phase 2 small bone assemblage. This exceptionally high number of fish bones must derive from a storage area for the pickled herring and other fish in Building 2. Furthermore, the environmental samples suggest that these fills did not derive solely from areas of grain storage, but were more mixed. This suggests that these pits were located in domestic areas of the Phase 1 buildings. To the north, over 70 fragments of slag were retrieved from fill 979 (pit 930) indicating small-scale metalworking in one or both of these buildings. Pit 782 also produced a reasonable slag assemblage, making it clear that at least Building 2 was involved in metalworking. Moreover, the location of these two pits suggests that the metalworking was carried out in the northern area of the building, an idea supported by the significantly smaller pottery assemblages from pits 930 and 975. It is possible that this metalworking was responsible for the fire which destroyed Buildings 1 and 2.

TABLE 24. FINDS RECOVERED FROM THE FILLS OF PITS 834, 930, 975 AND 782

<i>Context</i>	<i>St. Neots ware</i>	<i>Other pottery</i>	<i>Animal bone</i>	<i>Slag</i>	<i>Oyster shell</i>	<i>Quernstone</i>
<b>Pit 834</b>						
837	39	2	55	8	3	-
839	1	-	1	-	-	-
845	29	5	34	-	1	-
<i>Total</i>	<i>69</i>	<i>7</i>	<i>90</i>	<i>8</i>	<i>4</i>	<i>-</i>
<b>Pit 930</b>						
980	8	-	44	-	-	-
979	-	-	4	71	-	-
983	4	1	10	-	-	-
931	-	-	-	-	-	-
<i>Total</i>	<i>12</i>	<i>1</i>	<i>58</i>	<i>71</i>	<i>-</i>	<i>-</i>
<b>Pit 975</b>						
981	-	-	-	-	-	-
978	3	-	16	1	-	-
977	1	-	-	-	-	-
976	-	-	34	-	-	1
<i>Total</i>	<i>4</i>	<i>0</i>	<i>50</i>	<i>1</i>	<i>-</i>	<i>1</i>
<b>Pit 782</b>						
773	36	11	27	5	2	-
786	4	-	12	-	-	-
785	83	-	-	3	1	-
784	21	-	9	12	-	1
783	19	-	7	6	-	-
<i>Total</i>	<i>163</i>	<i>11</i>	<i>55</i>	<i>26</i>	<i>3</i>	<i>1</i>

Metalworking seems to have continued on the site in the later 11th century. This continuity of use may suggest that the inhabitants of the Phase 1 buildings remained on the site during Phase 2; therefore, it is possible that Buildings 1 and 2 were inhabited by a single landowner/tenant. The majority of evidence for this occupation comes from the burnt deposits at the end of Phase 2: 587, 758, 791 and 852. Deposit 852 in particular produced significant quantities of slag (32% of all slag retrieved from the excavations). Also of note is the piece of hearth lining in 587 that had slag and charcoal adhering to its surface. Moreover, the metal objects retrieved from Phase 2 deposits provide limited evidence that this metalworking may have involved small-scale farriering, for example the iron horseshoe nail (774, pit 770) and the cross pane hammer from 725 (pit 721).<sup>138</sup> It is also possible that the horseshoe arms in deposits 695 and 595 (both Phase 3) were redeposited finds associated with this earlier activity. Similar metalworking debris has been found at other sites in Oxford, for example 113-119 High St, which also produced hearth bases and linings.<sup>139</sup> This material, from the large cellar behind No. 116, was interpreted as residual material dumped from a nearby location, whereas it is unlikely that the material from Lincoln College derived from another location.

However, this building was not solely involved in industrial-type activities. The Saxon pottery assemblage is typical of domestic settlement of the period in the Oxford region.<sup>140</sup> Therefore, it is reasonable to propose that this was an area of domestic settlement, an idea that is supported not only by the bone assemblages, which are domestic in nature, but also by the charred remains, that contained charred foodstuffs and charcoal, which may have been from domestic burning as well as structural timbers.<sup>141</sup> It would seem, therefore, that the buildings on this site, during both phases, functioned both as domestic dwellings and as commercial sites. Thus, it is possible that this phenomenon is not restricted to the large cellared halls as has been proposed for Oxford and London.<sup>142</sup>

In addition, the samples taken from the Phase 2 burnt deposits are all mixed deposits, similar to those in Phase 1, and contain waste from cereal processing as well as materials used for bedding, flooring and thatch.<sup>143</sup> This evidence also suggests that the site was semi-rural and activities, such as cereal processing or the keeping of farmyard animals, especially domestic fowl, were carried out that would normally be associated with a rural site. Indeed, crop processing has been noted in other parts of Oxford giving the town a rural air.<sup>144</sup> Furthermore, it has recently been noted that this rural lifestyle is also reflected in the late Saxon bone groups as is the case at Lincoln College.<sup>145</sup> The diet showed great variety, to which hunting and fowling for foods such as plovers, pike, chub, eel and salmonids (and possibly wild mammals, e.g. red and roe deer) made a contribution.<sup>146</sup> This evidence corresponds to environmental evidence from other sites in Oxford, for example 113-119 High St. and 11-18 Queen St.<sup>147</sup>

<sup>138</sup> L. Allen, this report.

<sup>139</sup> Walker and King, op. cit. note 77, pp. 427-8.

<sup>140</sup> P. Blinkhorn, this report.

<sup>141</sup> B. Charles, this report; C. Ingrem, this report; D. Challinor, this report; R. Pelling, this report.

<sup>142</sup> Walker and King, op. cit. note 77, p. 438; V. Horsman, C. Milne and G. Milne, *Aspects of Saxon-Norman London: I. Building and Street Development near Billingsgate and Cheapside* (1988), 114.

<sup>143</sup> R. Pelling, this report; Pelling, op. cit. note 17.

<sup>144</sup> R. Pelling, this report; Robinson, op. cit. note 112.

<sup>145</sup> OAU, op. cit. note 133.

<sup>146</sup> C. Ingrem, this report.

<sup>147</sup> OAU, op. cit. note 133.

After the destruction of Building 3 by fire, the plot of land was turned over to waste ground. This downturn fits a general downturn in the fortunes of Oxford during this period; the Domesday Book records significant dislocation after the Conquest with a high level of waste property in Oxford by 1086.<sup>148</sup> Excavations at 113-119 High St., on the opposite side of High St. to Lincoln College, demonstrated that those plots suffered a similar fate.<sup>149</sup> In addition, excavations on the site of Hinkey Hall noted that the area of New Inn Court was given over to gardens and pit digging from the early 11th century to the early 13th century.<sup>150</sup> This site is comparable to the East Basement Test Pit area, which shows a similar dearth of occupation in the 11th century and later.

The most notable aspect of the occupation decline at Lincoln College is its duration; the sites of the New Wine Cellar, the Kitchen and the East Basement Test Pits remain unoccupied for almost 300 years. The only possible indication of any occupation on the site is wall 71: the possible foundation for Winton Hall (post-1188). However, the lack of any datable artefacts associated with the wall, the lack of evidence for any other part of the structure and the density of pit digging in the adjacent areas, make it equally, if not more, possible that this wall was a poorly built foundation to the Kitchen. The lack of occupation on the site of Oliphant Hall, at least in the 15th century, is documented in the All Saints Charters, which refer to annual payment *pro gardino vulgariter nuncopato Olyfant Hall*.<sup>151</sup> This lack of occupation for such a long time is unknown at other Oxford sites, whose date ranges fit into approximately two groups. The first group of sites shows an upturn in the late 12th century and a decline in the 14th century, e.g. the Hamel, Selfridges and Westgate.<sup>152</sup> The second group of sites either shows signs of occupation throughout the late Saxon and medieval periods (St. Aldate's, Logic Lane and 31-34 Church St, Site A) or shows the opposite dynamic to the first group (113-119 High St.).<sup>153</sup> Since there is documentary evidence for several tenement plots in the Lincoln College excavation area, it is curious to find so little evidence for any standing structures on these plots. One potential explanation is that the early Norman foundation of St. Mildred's church was associated with the change in use and ownership of the area c. 1120 (when the church was mentioned in the grant to St. Frideswide), as seems also to have happened at All Saints Church, which was constructed on a property newly formed by the amalgamation of several plots of land.<sup>154</sup>

By analysing the finds distribution through the pits and layers of Phase 3, it is possible to suggest a function for these features and deposits. Analysis of the Phase 3 animal bone indicates that 81% of the bone retrieved by hand came from the dump layers. This may suggest that domestic waste was being dumped in successive layers on the ground surface. A preliminary look at the pottery may also point to this conclusion with 72% of sherds coming from layers and only 28% of sherds coming from pit fills. However, analysis of the pottery types indicates that the majority of the wares are Saxon in date, with only 13% (84 sherds) of the pottery assemblage dating from the medieval period. This, therefore, suggests that the pottery, and hence probably the bones, are residual. This hypothesis is also borne out in the

<sup>148</sup> Ibid.

<sup>149</sup> Walker and King, *op. cit.* note 77, p. 438.

<sup>150</sup> Halpin, *op. cit.* note 49, pp. 49-50.

<sup>151</sup> Green, *Commonwealth*, 32, n. 3: Lincoln Coll. All Saints Charters, VIII (1447-65), 10 Aug. 1463, no. 144.

<sup>152</sup> Palmer, *op. cit.* note 85, pp. 208-17; Hassall, Halpin and Mellor, *op. cit.* note 52, p. 115.

<sup>153</sup> Durham, *op. cit.* note 112, p. 99; Radcliffe, *op. cit.* note 48, p. 39; Hassall, Halpin and Mellor, *op. cit.* note 52, pp. 100-6; Walker and King, *op. cit.* note 77, pp. 394-7.

<sup>154</sup> OAU, *op. cit.* note 133.

pottery fragmentation data, which suggest that a large amount of the late Saxon assemblage derived from secondary deposits.<sup>155</sup> It is also interesting to note that a Phase 2 pit fill (775) and a Phase 3 pit fill (826) produced non-joining sherds from a Medieval Oxford ware pitcher: this suggests again that a large number of finds from Phase 3 pits and layers derived from Phases 1 and 2.

So, it seems that the pits were not dug for the deposition of medieval rubbish, as has been suggested for other pits in Oxford, nor was this area used merely for the dumping of domestic waste.<sup>156</sup> It is more probable that the pits were dug for gravel extraction and that the layers derived from the spoil of the pit digging. Moreover, the density of finds from these layers suggests that the pits were not wholly backfilled. In addition, the mortar layers observed in the New Wine Cellar excavations indicate that the area was used for the mortar mixing. Furthermore, while Phase 3 yielded 42.1% of the total building material assemblage by fragment count, only 31% of the building materials by weight were from Phase 3 deposits. Thus, the average weight of fragments is 47.7 g., which is significantly lower than later phases. So, it seems possible that these smaller fragments were dumped here since they could not be used in construction because they were broken, or they were broken subsequently. These three elements – the gravel extraction, the mortar mixing and the dumped building materials – suggest that this area was used, at least temporarily, as a construction site for the buildings in the vicinity.

#### *The development of the college*

Although altered, most of the original buildings of the college survive: the Kitchen, in particular, retained many of its original features, for example, the two original and one later hearth. The Kitchen building itself is comparable with other English medieval kitchens, being built as a detached building, and not joined to the main building by the link passage until the 17th century. Although detached kitchens were common in the earlier medieval period, probably through fear of fire, by the 15th to 16th centuries most kitchens had become integral parts of the main building.<sup>157</sup> The 15th-century kitchen at Corpus Christi College, Oxford, for example, extends east from the south end of Hall and the north end of the Buttery.<sup>158</sup> A comparable example of a late detached kitchen in Oxford is Christ Church Kitchen, built in 1526, which lies to the south of Wolsey's Hall and almost detached from it.<sup>159</sup> Square kitchens, like Lincoln College, are comparatively common, the shape also affected the siting of the fireplaces. The most similar fireplace arrangement to Lincoln College is the 15th-century kitchen at St. Mary's Guildhall, Coventry which had two fireplaces on the south and east sides.<sup>160</sup> The 14th-century kitchen at Raby is also comparable since it had three fireplaces, though these were all original.<sup>161</sup> The roof of Lincoln College Kitchen is similar to those at New College and Corpus Christi College, all of which use arch-braced collar-beam roofs, but differs from the arch-braced tie-beams at Christ Church and Hampton Court.<sup>162</sup>

<sup>155</sup> P. Blinkhorn, this report.

<sup>156</sup> Palmer, *op. cit.* note 85, p. 213; Walker and King, *op. cit.* note 77, pp. 438-9.

<sup>157</sup> M. Wood, *The English Medieval House* (1965), 247.

<sup>158</sup> *R.C.H.M. Oxford*, 49, 54.

<sup>159</sup> *Ibid.* 29

<sup>160</sup> Wood, *op. cit.* note 157, p. 253.

<sup>161</sup> *Ibid.*

<sup>162</sup> *Ibid.* 254-5.

The investigations at Lincoln College provided much evidence to support what was already known about the development of the college. The Lincoln College charters record that on 6th June 1437 Dean Forest provided the college with funds to build a chapel, a library, a dining hall, a kitchen and sets of rooms.<sup>163</sup> The tree-ring date of Spring 1436 from the timbers of the first floor structure of the Buttery reinforces this documentary evidence for the construction of the original college buildings.<sup>164</sup> As well as confirmation of the date of the college buildings, smaller facts concerning the college structures can be corroborated. Although it was known that the Kitchen remained long unpaved, it is now known, from archaeological and environmental evidence, that the Kitchen floor was probably a renewable beaten earth floor overlain with bracken, making it similar to other floors in the college.<sup>165</sup>

In addition, the environmental evidence from the south hearth points to the burning of beech charcoal in the Kitchen; this fits well with Green's account of the purchasing in bulk of charcoal for the great hearth in the Kitchen.<sup>166</sup> It is possible that this charcoal was stored in the sub-ground structures identified in the East Basement test pits in Phase 4, since these may represent the remains of the coal house that reputedly stood east of the Kitchen.<sup>167</sup> The environmental evidence has also brought to light several other points of interest. The lower number of large mammal bones from the site in Phase 4 may be attributable both to lower numbers of inhabitants at the site (only 16 rooms were available as resident accommodation) and to the modest college income at the beginning of its life.<sup>168</sup> In spite of this, some luxury foods were still eaten at the college including dove and rabbit and imported fruits such as fig and grape.<sup>169</sup> The doves were almost certainly those kept at the college dove-house, recorded in the college accounts for the 15th century.<sup>170</sup> The lower numbers of animal bones in Phases 5 to 6 must to some extent reflect the improvements in rubbish disposal, as evidenced by the rubbish tips indicated on Agas's map of 1578. Nevertheless, the Kitchen floor in Phase 5 did produce a remarkable amount of oyster shell as well as rabbit bones, a cat mandible and 20 rodent bones, which suggests that not all rubbish was disposed of. The purchase of mousetraps for the Buttery is recorded, and from this evidence it seems that the Kitchen may have suffered from a similar rodent problem.<sup>171</sup> Finally, the ceramic assemblage provides further information about college life and dining. The large sherd of a Brill/Boarstall ware dripping dish in the Kitchen in Phase 4 context points to a high-status site.<sup>172</sup> It can also be suggested that the low number of jug sherds found are a result of the use of higher-status vessels, with documentary evidence indicating that pewter vessels were the main vessels used in Hall.<sup>173</sup> The find of a metal vessel rim from the Kitchen floor (1018)

<sup>163</sup> Lincoln Coll. Charters, I (1427-45), no. 9: '*Idem collegium in integrum aedificavit, Capellum cum Libraria, Aulam cum Coquina, Cameras in alto et basso, de nobili opere et figura decenti eleganter construxit nec non in centum solidorum annuo reddito aliisque preciosis jocalibus ampliavit.*'; Green, *Commonwealth*, 14.

<sup>164</sup> The date was obtained by Dan Miles of the Oxford Dendrochronology Laboratory.

<sup>165</sup> The Buttery had an earthen floor that was renewed by digging up the old floor and laying fresh gravel over it: Lincoln Coll. Accts 1524, f. 16; Green, *Commonwealth*, 27. The Hall and Chapel floors were strewn with rushes: Green, *op. cit.*, p. 26.

<sup>166</sup> Green, *Commonwealth*, 27 and n. 6.

<sup>167</sup> *Ibid.* 29 and n. 2.

<sup>168</sup> *Ibid.* 28-9.

<sup>169</sup> C. Ingrem, this report; R. Pelling, this report

<sup>170</sup> Green, *Commonwealth*, 29 and nn. 5-7.

<sup>171</sup> *Ibid.* 27.

<sup>172</sup> P. Blinkhorn, this report.

<sup>173</sup> Green, *op. cit.* note 4, 230 and n. 7.

also supports this conclusion. It is, however, possible that high-status vessels were not regularly used, since the college accounts record the purchase of cheap wooden trenchers for use at dinner from the 15th to 17th centuries.<sup>174</sup>

It is also interesting to note the documentary evidence regarding the well structure. Until 1525 water was drawn from the well using a bucket. In that year a pump was fitted, but was discarded in 1559 because it was constantly going wrong; at the end of James I's reign the pump was brought back into action.<sup>175</sup> Wear marks were found on the well head during the 1999 investigations pointing to the use of a pulley system to draw the water. Furthermore, it is possible that the structure to the south of the well, which underwent later alterations in the 17th century, was associated with the fitting and re-fitting of the pump.

Other documented construction events in the 17th century include the insertion of the cellars under the Buttery and Hall. According to *V.C.H.*, the cellar under the Buttery was excavated in 1608, but in Green's account of the college, it is implied that this cellar, called the lower buttery, was in existence from the beginning of the college's life.<sup>176</sup> The investigations in the New Wine Cellar indicate that the cellar under the link passage and Buttery was inserted in the 17th century and underpinned sometime later; it is likely that this structure is the one referred to in *V.C.H.* If an earlier cellar existed in the 15th century, no trace of it was found in the excavations. The cellar under Hall was created in 1640 and must have included the stone pillars to support the Hall floor (see Appendix 1). The excavations in the Grove Quadrangle Watching Brief identified the western wall of this cellar. As was noted in the description, there was fine masonry beneath the Hall floor level. The only explanation for ashlar below ground is that the ground floor levels were raised to accommodate the insertion of the cellars under the Hall. The *RCHM Inventory of Oxford* confirms that 'the cellar, below the Hall, was formed in 1640-1, when the floor was raised'.<sup>177</sup> Furthermore, it appears that all the previous soil build-ups and the upper pit fills were truncated to the level of the natural and that 'made ground' (328) was deposited in order to avoid the instability inherent in much of Oxford. Therefore, the ashlars below ground were not built as cellar walls, but as the original Hall wall face. Evidence for the later alterations to the Hall cellar in 1954, paid for by funds bequeathed by R.F. Littlewood-Clarke, were also found in the investigations.<sup>178</sup> There is no documentary evidence relating to the cellar east of the Kitchen; presumably it was a replacement for the earlier outhouses associated with the Kitchen.

Evidence was also found for the changes made at Lincoln College by T.G. Jackson, the pupil of the architect Sir Gilbert Scott, who by the end of his career had built for or altered many of the Oxford colleges as well as a multitude of other prestigious buildings, including Winchester Cathedral and Blenheim Palace.<sup>179</sup> In addition to his changes as seen in the building survey in the Buttery, archaeological evidence was found for the Grove Building that Jackson constructed in 1883 at a cost of £7725.<sup>180</sup> It is also possible that the stone-lined culvert recorded in the Grove Quadrangle Watching Brief was related to Jackson's building programme, since he was renowned for the number and size of his water channels.<sup>181</sup> No

<sup>174</sup> *Ibid.* 230 and nn. 4-5.

<sup>175</sup> *Ibid.* 28-9 and nn. 1, 4-5.

<sup>176</sup> *V.C.H. Oxon.* iii, 168; Green, *Commonwealth*, 27.

<sup>177</sup> *R.C.H.M. Oxford*, 62.

<sup>178</sup> Green, *Commonwealth*, 547.

<sup>179</sup> A. Martin, 'Oxford Jackson', *Oxoniensia*, xliii (1978), 216-17.

<sup>180</sup> Green, *Commonwealth*, 555.

<sup>181</sup> Martin, *op. cit.* note 179, p. 218.

evidence, however, was found for the 18th-century cottages that Jackson's new Grove Building had replaced.<sup>182</sup>

To the south, in the Rector's Garden, the story is more complicated and less well documented. The Rector's Garden was originally a plot of land which the college had bought from Abingdon Abbey. No pre-15th-century material was recovered in the Watching Brief, but earlier deposits must have lain at a greater depth; the chantry of St. Anne, for example, definitely owned properties along the northern edge of All Saints churchyard.<sup>183</sup> However, in 1517 when the plot was described as 'the vacant ground agaynst our gate', this land was unoccupied and not built up.<sup>184</sup>

The three walls discovered in the Watching Brief present something of a problem. Although the date of these structures cannot be pinpointed, they are definitely post-medieval, probably 18th century. Taylor's map of Oxford of 1750 depicts structures that seem to be on a similar alignment with those found during the Watching Brief. It is known that the Rector's Garden was located in the precinct of the college itself from the 17th century, but no mention of structures such as these is made in the college documentation.<sup>185</sup> The only wall referred to is that separating the Rector's Garden from the other part of the college garden; this wall was not identified in the Watching Brief.<sup>186</sup> Two possibilities present themselves: either these walls could be associated with 'rustic summerhouses', which were definitely in existence in the late 17th century or they may have formed the rector's stables, which were originally on Cheney Lane, but were pulled down in 1685 and moved 'elsewhere'.<sup>187</sup>

#### ACKNOWLEDGEMENTS

OAU wish to thank all the staff at Lincoln College for their support and interest during the excavations at the site, in particular Stuart Clark-Dunn, Michael McKee and Bursar Dr. John Norbury. The site contractors, Symm and Co. were helpful at all times; special thanks go to the ground-workers, without whom much of the deep excavation could not have been undertaken. Norman Machin Associates provided site plans, and OAU is grateful for the support given to the project by Messrs Norman Machin, John Cambridge and Nigel Hammett. Young and Webb acted as consulting civil and structural engineers for the project. The authors of this report are grateful for the sterling efforts of the OAU team, in particular Jon Hiller, the site manager and author of the assessment report, as well as Ben Ford and Dan Poore, for their supervisory skills in difficult excavation conditions. Thanks are extended to Maureen Mellor who provided helpful information and advice with the pottery assemblage, Nicholas Mayhew who identified the coins, and Mark Robinson for his comments on the wood charcoal. The illustrations are the work of Ros Smith, Ric Tyler and Sarah Lucas. Text is by Zena Kamash, except where indicated otherwise, and buildings information was provided by Julian Munby and Ric Tyler. The text was edited by the authors and Rachel Tyson.

<sup>182</sup> Green, *Commonwealth*, 555.

<sup>183</sup> *Ibid.* 7, 39 n. 3, 219.

<sup>184</sup> *Ibid.* 192 n. 4.

<sup>185</sup> *Ibid.* 193.

<sup>186</sup> *Ibid.*

<sup>187</sup> *Ibid.* 193-4, 219.

## APPENDIX: THE DEEP HALL COLUMNS by JULIAN MUNBY

The possible origins of the stone columns in the Lincoln College JCR buttery bar below the hall ('Deep Hall') has always been a matter of some uncertainty, and during the building works the opportunity was taken to investigate the matter further. The great cellar was excavated below the medieval hall in 1640,<sup>188</sup> in part paid for by the sale of surplus plate.<sup>189</sup> The hall itself was refurbished in 1697-1700, when it was wainscotted and sashed; in 1699 the hearth was moved from its original position in the centre to the side of the hall.<sup>190</sup> The cellar became a bar in the 1930s, and at that date took on the punning name of the medieval property on or near the site.<sup>191</sup>

The three stone piers below the hall have been the subject of fruitless speculation in the past about their possible origin as remnants of St. Mildred's church, which was situated at the north-western extremity of the college and was removed when the college was built.<sup>192</sup> The three columns have perhaps been moved within the last hundred years, though the descriptions are not sufficiently clear on this point, and visual or cartographic sources seem not to exist. Some unpublished notes of Andrew Clark, examined by the Royal Commission investigators in the 1930s, reflect current thinking in the late 19th century:

Probably from the first there was a cellar or underground chamber under the Buttery. On account of the massive archaic pillars still found there it has been conjectured that this may originally have been the crypt of St. Mildred's church. The original appearance was altogether changed in 1608 by the excavation of an additional cellar on the south side of it under the Hall passage. The interest of the cellarage centres round the three massive but dwarf circular pillars with Norman bases and two massive square pillars with Norman bases and capitals which are disposed irregularly to support the floor of the Buttery and the Hall passage. It is plain that in the detailed expenditure [of 1608] there is no provision for the purchase and transport hither of stone to erect such pillars - five in all. They must have been *in situ* and the most that can have been done with them in 1608 was to take down one or more and rebuild it when fresh support was needed by reason of extended cellaring.<sup>193</sup>

This appears to tally with the account of Warner in the 1908 history of the college:

Underneath the screen and passage-way between the Buttery and the Hall are to be seen three circular pillars with early Norman bases, of one of which an illustration is given. In another cellar, called the Undergraduates' Wine Cellar, further west [north], are two square pillars with bases and caps of the same period as the others, while in several places in the walls may be noticed worked stones belonging either to capitals or window arches. Hitherto it has generally been considered that these pillars are, as forming part of the crypt, all that remains of the church of St. Mildred, though by the most recent authoritative opinion it is thought that the pillars are not as originally built, but have been made up from the old material to hand at a later date, thereby rendering it by no means certain that they occupy their original position, and throwing doubt upon the theory of the crypt. On the other hand, no very definite explanation has yet been offered, and so an interesting problem remains to be solved. In 1660 a lock and two keys were bought 'for the cloyster', as this part was then called, and for the following year the College

<sup>188</sup> *V.C.H. Oxon.* iii, 168.

<sup>189</sup> Green, *Commonwealth*, 165.

<sup>190</sup> *Ibid.* 293-4.

<sup>191</sup> *Ibid.* 583.

<sup>192</sup> *V.C.H. Oxon.* iii, 168.

<sup>193</sup> National Monuments Record, Swindon, Oxford inventory files.

Register has a rule 'That no undergraduate Commoner come into the Cloister or cellar'. Further along under the Hall is another large cellar excavated in 1640, where the college wine is laid down.<sup>194</sup>

This description would appear to place the piers beneath the screens passage rather than the hall. When examined by the Royal Commission on Historical Monuments in the 1930s the piers were perhaps elsewhere, and probably not where they are today:

The cellar, below the hall, was formed in 1640-1, when the floor was raised. It was formerly of six bays with pilasters against the side walls and a row of columns, with moulded capitals and bases, down the middle. The cellar has been much restored and partitions inserted, but three of the responds and two of the columns remain *in situ*; a third column has been re-erected near the east wall.<sup>195</sup>

The cellar below this end of the range [The Old Rector's Lodging] has a central stone pier, of octagonal form with a chamfered capping and base and probably of the 17th century.<sup>196</sup>

The original investigator's report for the RCHM slightly clarifies the location of the columns:

There are *Cellars* below the whole of the east Range. Those below the Buttery and the former Lodgings of the Rector are of uncertain age but there are items in the college records in May 1640 and February 1641 of money taken from the Treasury 'towards building of a new cellar under the hall'.

The *cellar below the Hall* is therefore probably of that date but has since been divided up by later brick walls into separate compartments for beer, and the various kinds of wine.

It appears to have been originally divided into six bays by a central row of circular pillars with moulded capitals and bases and with corresponding square responds against the side walls with chamfered caps and bases. The two northernmost of the pillars remain *in situ* as do three original responds against the west wall, while on the east wall only the southernmost respond remains; this has the upper part of the south-west angle chamfered [illustrated].

A third column remains standing, near the east wall at the north end of the cellar but is not *in situ*.

The cellar below the former lodging of the Rector has had the northern half divided into three compartments by the insertion of modern brick walls which have been built against an old central octagonal stone column with chamfered capitals and base.

This cellar is also probably of the 17th century, and has some stop chamfered beams in the ceiling.<sup>197</sup>

Examination suggests that the piers are not medieval in character, and indeed are of the appearance that would be expected of a 17th-century column (i.e. neither the caps nor the bases appear to be medieval). Philip Powell of the University Museum has examined the columns and identified the stone as being from Headington Quarry, though this has no particular bearing on the date. The RCHM description appears to imply that they were thought to be contemporary with the cellar. They are highly unlikely to have been preserved and reused from a medieval church demolished in the 15th century, and there is every

<sup>194</sup> S. Warner, *Lincoln College Oxford* (1908), 70-1.

<sup>195</sup> *R.C.H.M. Oxford*, 66b. Note that the Commission records at the National Monuments Record in Swindon have not yet been consulted for photographs or notes on the cellar in the 1930s.

<sup>196</sup> *Ibid.* 67a.

<sup>197</sup> National Monuments Record, Swindon, Oxford inventory files.

reason to suppose that they were made in 1640. They may have been placed beneath the hall at the time the cellar was made to support the floor joists in the vicinity of the hearthstone, or alternatively to support the hall screen. If the former, then they would have become redundant in 1699, and may have been moved around, or reformed as the cellar was altered. Their present position on a plinth would seem to be of no especial significance, and is clearly subsequent to the RCHM investigation.