Proceedings of the Cambridge Antiquarian Society

(incorporating the Cambs and Hunts Archaeological Society)

Volume XCI
for 2002

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Editorial

After two themed volumes these *Proceedings* return to the usual PCAS format of mixed papers, covering excavations, local history, landscape archaeology, architecture and historical geography. Indeed, in the finest antiquarian tradition many of the papers involve more than one of these disciplines. There should therefore be something to interest all members in this miscellany.

Two departures from recent practice are the inclusion of Conference synopses and an abbreviated *Conduit*. The synopses are by popular request, rising from a realisation that many members would be grateful to have a lasting reminder of these important papers. We are grateful to the authors who supplied copy so conscientiously after the event (naturally we had not thought of this in advance), and to Derek Booth who collected them all together. *Conduit* had to be an even more last-minute construct, when it became clear that the County Council could no longer keep up with the necessary production time-scale. This year's approach is a bit of an experiment, and it will be useful to know what reaction we have both from members and from affiliated societies.

Alison Taylor

President's Address

Two years as President is too short a time to see through any substantial programme of reform for CAS. When I was elected there were a number of initiatives I wanted to start in the hope they would mature in another President's time. To this end Derek Booth as Secretary and I put out a questionnaire in the year 2000 to profile our membership and to canvas opinion on possible changes.

It has been a central part of my Presidency to re-imbue the Society and its membership with confidence in its right to express opinion on heritage issues. It is essential that there remains a well-informed independent Society to safeguard archaeological and related services at a time when other pressures and agenda take precedence within local and central governmental organisations which we perhaps naively assume will be acting in our best interests in protecting the past. It is particularly regrettable that CAS has been excluded from representation within long-established fora to discuss and scrutinise public heritage services within Cambridgeshire at this time.

Another issue I hoped we could address was to reverse the decline of amateur archaeology, perhaps by re-establishing the Society's post of Director of Fieldwork, and to encourage research-led investigation in the County once more. This latter still awaits the right person and opportunity, but I am pleased there are encouraging signs in the way local groups have attracted grants which will give them solid research foci and draw in new members. Notable amongst these are Thriplow Society, Fulbourn Village History Society, Haverhill and District Archaeological Group and Cambridge Archaeology Field Group.

We asked members if it would be beneficial for CAS to develop other venues for meetings, and would there be interest in workshops on current research topics. We have developed the workshop idea with this year's conference dedicated to the archaeology, architecture and history of Ely, a town that has had considerable investigation in the past ten years, with some startling new discoveries but little co-ordination or academic discussion. Synopses of the talks are published within this volume. From October we shall be holding our monthly meetings in more comfortable and more accessible surroundings, in the newly built Divinity Faculty at the Sidgewick Site.

Other positive steps are that, after two years I can report that the Web page is now complete and will shortly appear at www.Cambridge-Antiquarian-Society.org.uk, and that the Society has taken back full ownership of *Conduit* which, over the past ten years, had been produced jointly with Cambridgeshire County Council.

In summary there has been good progress over the past two years and the Society will continue to build upon its strengths as the paramount amenity society guarding Cambridgeshire's heritage. Government policies at central and local level are capricious and we cannot afford to put faith in them without constant scrutiny and challenge. With the advent of regional government and root and branch reform of the planning system, a Cambridgeshire focus for our heritage provided by CAS will be ever more imperative. The Society is therefore essential and I thank you all for continuing to support and contribute to it. I am pleased to leave it in the capable hands of your secretary Liz Allan, and new President, Tony Kirby.

Tim Malim

A Late Sixteenth Century Pit Group from Pembroke College Library, Cambridge

Andrew Hall
with Rachel Ballantyne, Andy Clarke, David Hall, Quita Mould,
Maisie Taylor and Penelope Walton Rogers

The redevelopment of Pembroke College Library, Cambridge, revealed archaeological features spanning the 14th to 17th centuries. This included a series of pits, and more importantly, a clunch-lined pit containing a rich assemblage of later 16th century finds. The assemblage included pottery, animal bone, metalwork, bone and ivory artefacts, leather, textiles and wooden objects. Such a well preserved and varied finds assemblage of this date provides a rare insight into the nature of domestic refuse during this period as well as more specific associations with an urban manorial workshop.

Introduction

During an archaeological watching brief on recent redevelopment work on Pembroke College Library (TL 54490/25810), remains were found of an extension to the Old Brewhouse[1] building which currently lies immediately to the south of the library, within the grounds of Peterhouse Master's Lodge (Figure 1). From the cartographic evidence (notably Loggan's map of 1688 and Custance's map of 1798; Figure 2), it seems clear that the northern end of the Brewhouse was in part demolished to make way for the construction of the library in 1875 on land incorporating part of the Fellow's garden, and a strip of land acquired from the neighbouring Peterhouse Master's Lodge (Willis & Clark 1886).

A stretch of wall exposed within one of the rooms of the Library (Room A) seems to correspond to the northern end of the Brewhouse, although it is probably a late 17th or early 18th century extension rather than part of the original foundations (Figure 3). This extension may have functioned as stables for the newly constructed Masters Lodge, built in 1701 and bequeathed to Peterhouse in 1727 (Hall & Baggs 2000). Use as stabling provides one possible explanation for the lack of an eastern return wall foundation, although prior, albeit limited, archaeological investigation within the Brewhouse identified a large posthole possibly relating to a post and panel east wall, probably punctuated by stable doors. The western extension wall was 0.70m wide, and survived to a depth of 0.40m, consisting of red brick and roughly dressed clunch rubble bound in a sandy mortar. A well-dressed clunch block incised with a naïve representation of a flower was found within the foundation, indicating reuse of earlier architectural fragments.

Removal of the wall exposed the top of a backfilled, clunch-lined, square pit, at a depth of 1.05m below the existing ground floor level (Figure 4). Its upper courses had been damaged by the later insertion of the wall foundation. The lining of the pit was inserted within an irregular square cut of approximately 1.4m width. It consisted of three irregular courses of roughly shaped clunch blocks of varied shape and size above four well-finished blocks of 20cm height supporting each side at the base. At the base the internal dimension was 0.75m and the pit survived to a depth of 0.80m, providing a capacity of 0.45m^3. The side walls were vertical, however the northeast and southwest walls tapered out towards the top due to later disturbance and settling. No mortar was observed between the stone blocks, however fragments of roof tile were inserted into sizable gaps. A small post or stake hole of 4cm diameter was present, adjacent to the northeast side of the pit. Considering the size and construction of this pit, its original function is interpreted as a cesspit.

The pit fill consisted of a dark grey brown clay silt with a large amount of building rubble, mainly brick and tile. There was also a high concentration of finds that are discussed below; waterlogged deposits were encountered 0.20m below the upper surface. Deposits were excavated by hand, as a single context, although some layering of materials was noted. Building rubble and pot were predominant within the upper fills. This of course may be due to preservation factors, such as the aerobic decomposition of organic remains. Two samples of approximately 10 litres of the lower fill were taken for environmental analysis (see below). The residue from the sieving was also examined to retrieve further finds, while all spoil was scanned with a metal detector.

Apart from this feature a number of others were recorded in the course of investigation. Within rooms (B) and (C) of the library, a total of four pits were recorded (Figure 3). Pits 1 and 2 contained ceramics of the 14th and 15th centuries with small assemblages of animal bone. Pit 3 was devoid of finds and so can only be attributed a pre-Library date. A much larger assem-

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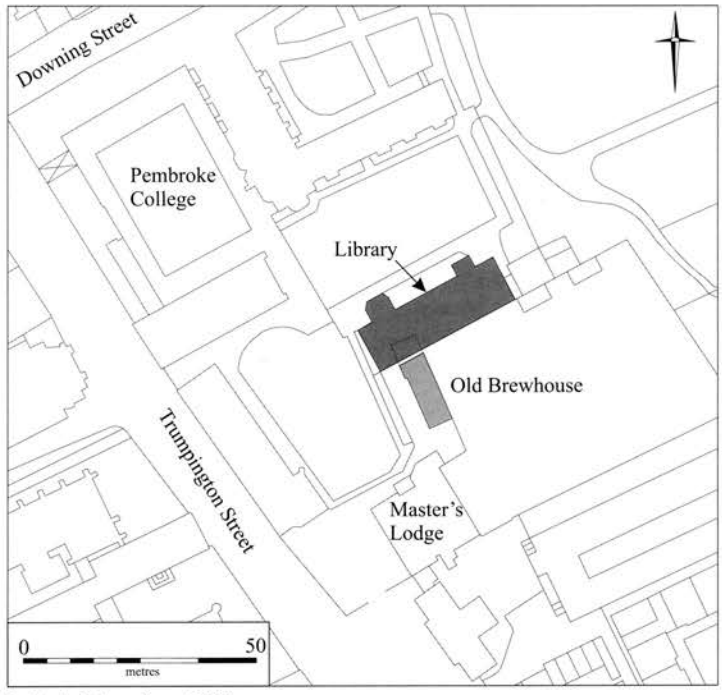


Figure 1. *Location map*

blage was retrieved from Pit 4, the pottery dating it to the early 17th century, roughly contemporary with the cess-pit assemblage. The first two pits are likely to be associated with small scale gravel extraction, possibly within the yards of properties fronting Trumpington Street. One such property was St Thomas's Hostel, which provided accommodation for scholars and was acquired by Pembroke in 1451 (Willis & Clark 1886).

Pit Assemblages

Pottery

David Hall

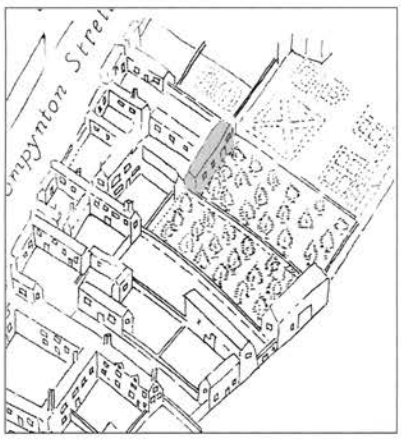
The pit produced 222 sherds, many refitting to provide complete vessel profiles. The remarkable nature of this group is that it consists almost entirely (94%) of the different types of vessel produced at Ely, at a kiln site off Broad Street and at an adjacent location called Babylon. The 16th century saw a resurgence of pottery production at Ely at the new location, making wares quite different from the coarse medieval fabrics.

Current work by Cambridge Archaeological Unit at Broad Street has revealed a kiln and pottery working area that demonstrates the full range of production (Alexander 1998). This included mugs (tygs) in a black, iron glazed red earthenware, a copy of material called Cistercian ware produced in Yorkshire from the late 15th century onward. This had been recognised in Ely in the 1960s and was then called Babylon ware after the Ely district in which it was found. Another kind of fine ware, now called Ely Fine ware, was made from a clay that fired off-white or light pink. It was lead glazed, usually with copper added to give a speckled green colour. Some vessels had a clear glaze internally that gave a light yellow finish. Forms were mostly jars with a single handle, but chafing dishes were also produced. The fabric is probably the same as material identified at King's Lynn in the 1960s, then known as NS ware (Clarke & Carter 1977).

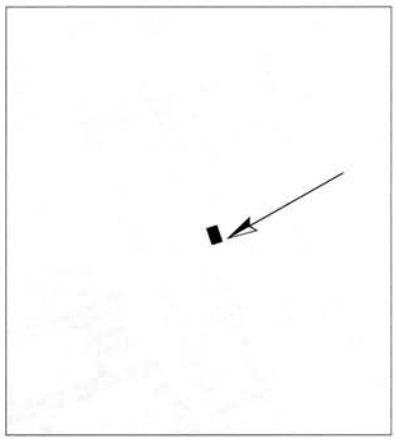
The commonest coarse pottery used during the 16th to early 18th centuries was red glazed earthenware produced at various sites. Ely produced this in a range of forms, mainly large jars, bowls, shallow dishes, basting dishes, and some jugs. Glazes were clear, giving a red or greenish appearance. These fabrics are now called Ely Broad Street Ware. Some very fine red earthenware was produced and glazed in bichrome like the off-white Ely Fine Ware. This fabric was recognised in the 1960s at King's Lynn, where it was erroneously called West Norfolk Bichrome (Clarke & Carter 1977).

Pembroke cesspit produced good examples of all three Ely fabrics (132 sherds of Red Broad Street ware, 33 Babylon, and 20 Ely Fine ware) and a complete range of forms; tygs, jugs, bowls, jars, pipkins, cisterns, and costrels (Figure 5).

There were additionally 14 sherds from imported vessels (6%). These included 11 of German stoneware (Frechen), one decorated Netherlands maiolica sherd (Figure 5: no.15), one clear tin-glazed white ware, and a sherd from a scalloped bowl in off-white fabric with a turquoise tin glaze (no.14), believed to originate from Germany or the South Netherlands[2]. The

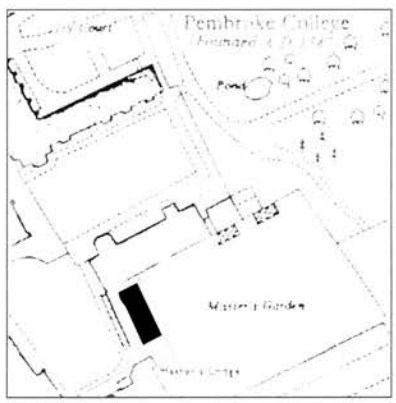


Hamond 1592



Loggan 1688

Custance 1798



Ordnance Survey 1886

Figure 2. *The cartographic evidence, showing the position of the Brewhouse structure. Hamond's 1592 map: top orientated to north-west*

Pembroke assemblage is dated to the second half of the 16th century by the pottery imports. The Ely kiln has been dated archaeomagnetically to 1510–1590 AD (Noel 2000).

Metalwork

Two jetons were recovered from the cesspit. One is of Hans Krauwinkel II of Nuremberg, active between 1585 and 1635. The other is of Egidius Krauwinkel also of Nuremberg active between 1570 and 1635 (Mark Blackburn pers comm). These provide a clear date for deposition after 1585. Such jetons are commonly encountered on post-medieval sites. Several explanations have been proposed for their function. They may have acted as small change, exchangeable for goods and services in pubs and other small businesses. They may have also been tokens associated with exchequer boards.

A small lead cloth or grain seal was recovered. This was approximately 1cm in diameter and had no apparent design impressed into its surface. An iron hook, possibly a meat hook and an iron hammer were also found within the pit. The hammer measures approximately 14cm from claw to head (more accurate measurements are not possible due to the heavy corrosion present). The iron head is attached to a wooden handle surviving to a length of 12cm.

The relative lack of metalwork within this context has already been mentioned above, and is probably related to recycling. It is unlikely that problems of retrieval are a significant factor as a metal detector was used to scan the spoil during excavation.

Wood

Maisie Taylor

This assemblage includes a high proportion of extremely fine objects and fragments. These include fragments of a spoon (Figure 6, no. 7) and a vessel base (no. 1). The latter has a thick base and foot, and may have functioned as a mortar. Small mortars were used by pharmacists and apothecaries, and also for grinding snuff in inns (Evan-Thomas 1976). The design of gaming pieces hardly changes through time (Margeson 1993). The example from this assemblage

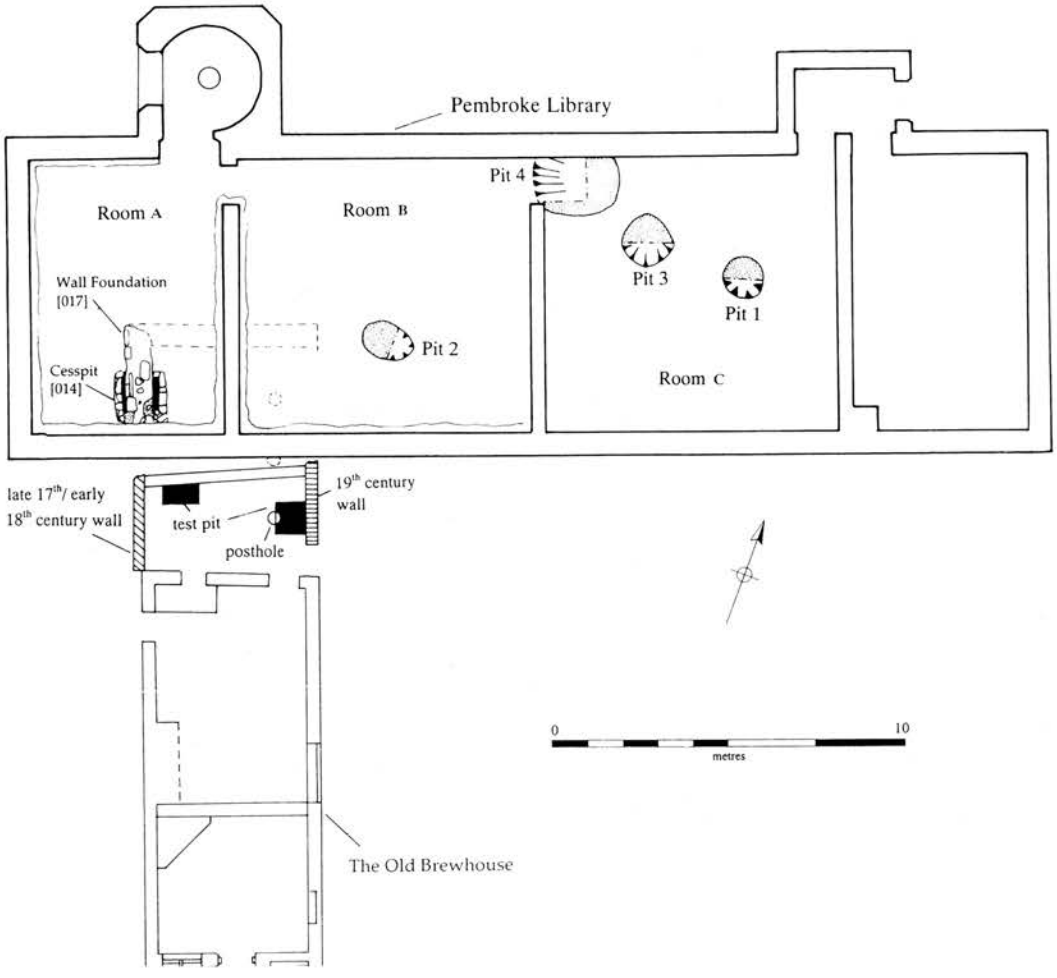


Figure 3. *Archaeological features within the Library footprint and the association with the Brewhouse structure*

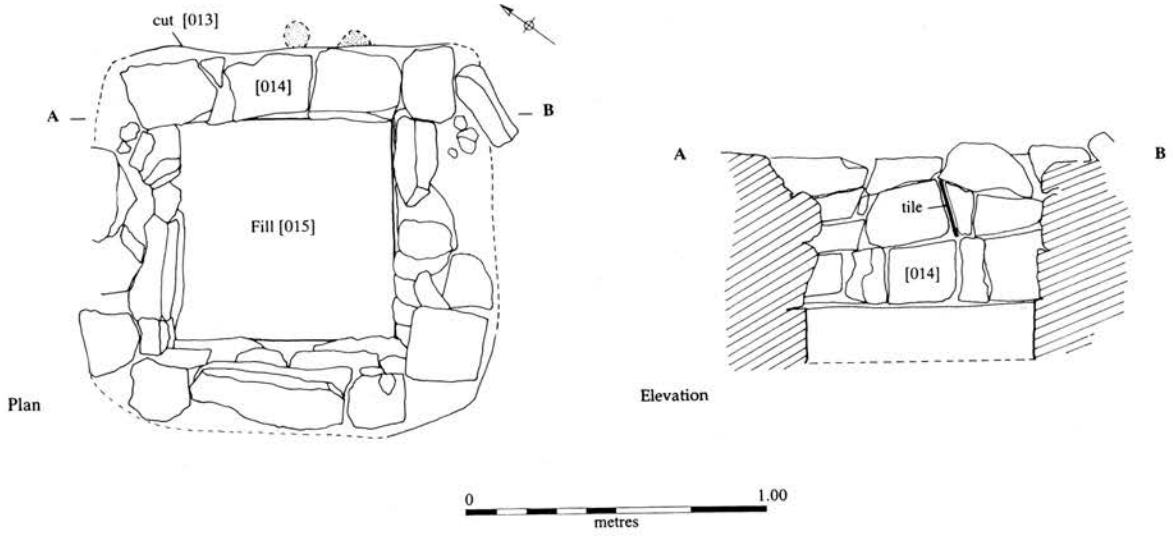


Figure 4. *Plan and elevation of the cesspit*

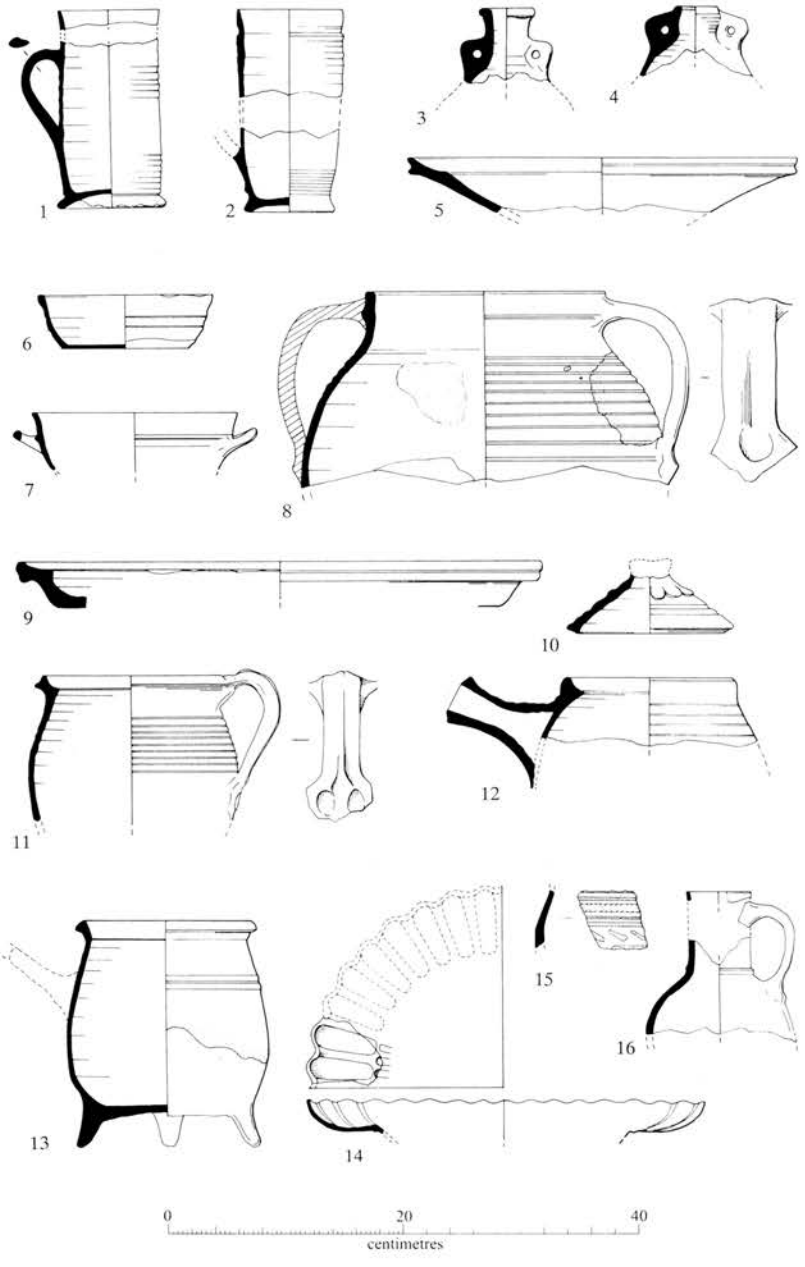


Figure 5. *Pottery*

1,2: Tygs in Ely Bablyon fabric. Red earthenware with lustrous black glaze inside and out. The vessel with an incomplete profile has a stacking scar on the base underside

3: Costrel rim in red earthenware with broun external glaze

4: Costrel in Ely 'off-white' fabric; red inner surface, external green glaze with patches of dark gree

5: Shallow bowl in off-white Ely Fine Ware fabric. Darkened pink unglazed exterior, clear interior glaze with much green addition

6: Small bowl of Ely Fine Ware with blotchy green glaze inside and out

7: Small bowl with looped handle in Ely Fine Ware. The surfaces before glazing were slightly oxidised. so the glazed colours are light orange inside and green external

8: Upper part of handled jar in Ely Fine Ware, bichrome. Clear (buff-red) internal glaze with patches of very light green, external dark blotchy green glaze. The strap handle with a single rib

9: Shallow dish in red earthenware, blackened on the outside with clear internal glaze

10: Lid in red earthenware with thin glaze on upper surface

11: Red earthenware jar with plain strap handle and patchy clear glaze inside and out

12: Red earthenware jar with hollow applied handle; dark green external glaze

13: Pipkin in red earthenware, all-over internal glaze, exterior glaze on the upper part only

14: Part of a scalloped bowl in off-white earthenware with a pinkish tinge. Dense tin glaze on both sides in a light blue-green. German or South Netherlands (J Poole pers comm)

15: Netherlands Maiolica type in off-white biscuit without glaze. Polychrome decoration with the third strip from top being purple, the remainder blue

16: Top of a Frechen jug with speckled brown iron glaze

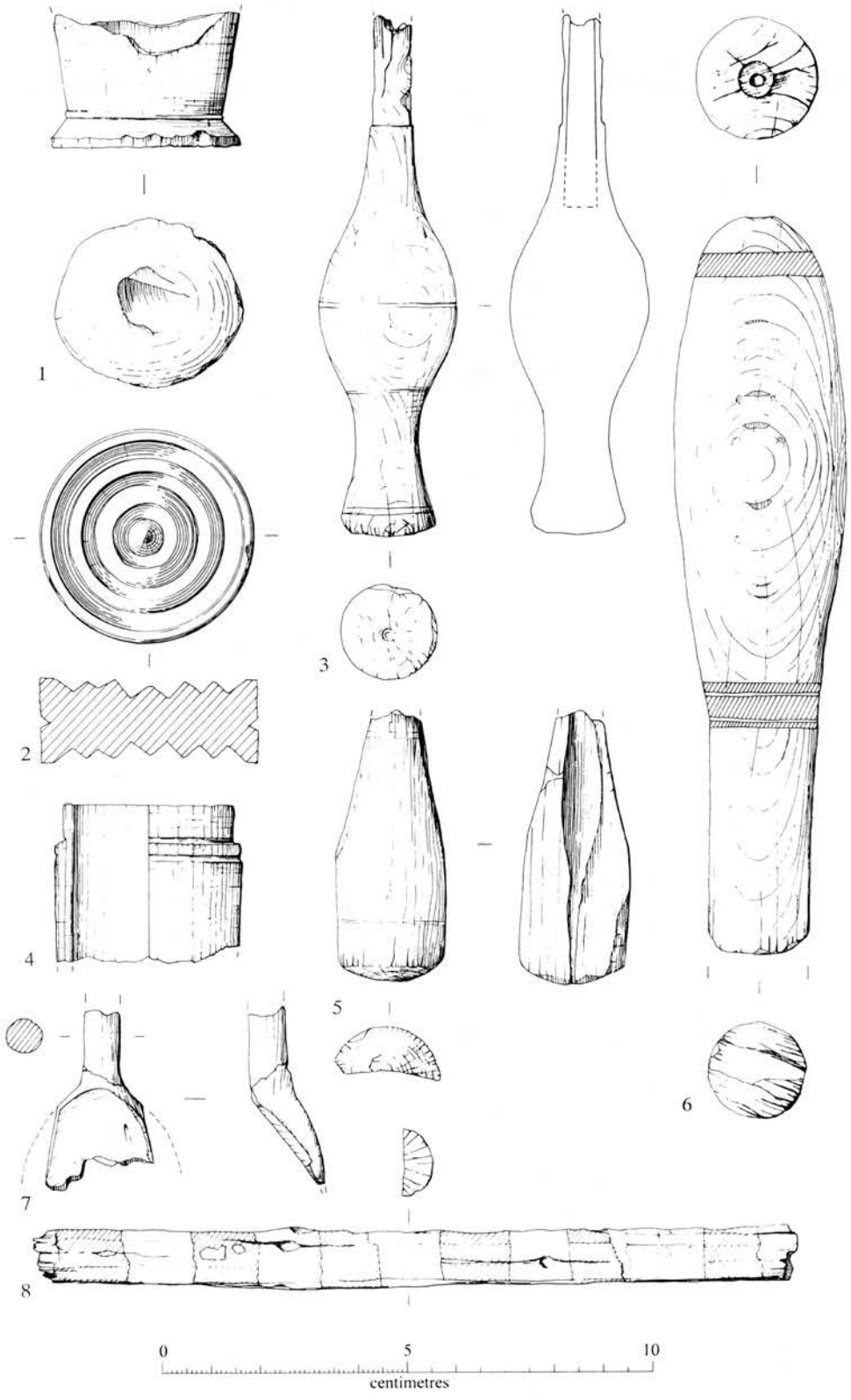


Figure 6. *Wood*

*1: Base fragment of vessel. Spindle turned, possibly of alder (*Alnus glutinosa*)*

2: Gaming piece

3: Turned handle with bulbous grip

*4: Fragment of a circular box, probably ash (*Fraxinus excelsior*)*

5: Small turned handle

*6: Turned painted handle of oak (*Quercus*) from a split billet of fine-grained wood*

7: Spoon fragment carved from very fine-grained wood

8: Split semi-circular lath or beading, painted

is a classic draughtsman (no. 2).

Handles are frequently (in comparison to other wooden artefacts) found in archaeological deposits. This is a reflection on the reusable nature of the metal tool, with the wooden part breaking or being replaced. Handle (no. 3) was for a small round tanged tool. The thin socket walls, the round section and the fine finish suggest a small hand tool rather than an object such as a knife (Margeson 1993). The turned piece (no.6) with painted bands resembles a handle, but it is possible it had a different function. A spinning wheel for example has small turned parts, and wooden handles might be fitted to equipment such as pumps and cranks.

The spoon fragment (no. 7) is small and unusually finely made (Margeson 1993). Wooden spoons of this date and of such fine quality are not common. They do not vary much chronologically, but tend to vary a great deal functionally. A further finely made artefact is the small, spindle turned, circular box (no. 4). It is of a type common from the 12th century onwards. The base of a similar box from York, is illustrated by Morris (2000).

The split lath (no. 8) is painted, and punctuated by small nails or pins. This and the delicacy of the piece suggest it was originally attached to a larger object as a decorative beading. It is interesting that the paint is better preserved on the flat side. If it was pinned to a piece of furniture or perhaps an architectural fixture, then the paint on the flat side would have been protected from wear. The presence of pigment on this piece and on no. 6 is very rare indeed.

Worked Ivory and Horn

Two artefacts within this category are illustrated in Figure 7. Both were initially believed to be handles for small tools. However closer examination suggests that the larger of the two may be a needle or pin case (no. 1). Although stained brown by tannins within the cesspit, this appears to have been turned from ivory, although of unknown species. The screw terminal suggests a small lid would have attached. This case is finely turned and finished, clearly an object of quality and worth. The other artefact is a handle carved in horn may have belonged to a small iron knife or tool (no. 2), evidenced by corrosion products.

Leather

Quita Mould

Three small fragments of shoe uppers and 11 bottom unit components from shoes of welted construction were recovered, coming from a minimum of five shoes. Shoes for adults and a child are present (Figure 8). The group was dominated by bottom unit components, the toe area had been deliberately cut away from one sole and another bottom unit component was heavily worn, suggesting that the leather assemblage represented a small dump of cobbling debris rather than purely domestic waste. The shoe parts recovered have characteristics that suggest they date to the very end of the 16th/beginning of the 17th century (1590s–1620s). The fragments of uppers recovered have a decorative scalloped edge running along an extension of the front edge of a narrow latchet. It was not possible to distinguish whether the upper fragments come from vamp and quarters, quarters and quarters lining, or two right quarters from two similar shoes from the preliminary scan.

Textiles and Felts

Penelope Walton Rogers

Waterlogged conditions in the cess-pit [15] have led to the preservation of several fragments of wool textile and felt. The textiles include strips cut from a garment or hanging of some sort, while the felts are worn pieces which were probably already quite fragmentary by the time they were deposited.

Because the material was well preserved, it was possible to select samples for analytical work. Two yarns from one of the textiles and two samples from representative fragments of the felt were used for identification of the 'fleece type'. This is based on the measurement of the diameters of 100 fibres and allows the sample to be allocated to one of seven fleece-type categories (Ryder 1969; Walton Rogers 1995). The same samples were also tested for dye, using absorption spectrophotometry and thin-layer chromatography (Walton & Taylor 1991). All samples proved to be heavily contaminated with tannins, some or all of which may have been acquired as a result of burial in association with wooden objects and tanned leather, but in one of the felts it was also possible to detect a trace of red dye (see below).

Textiles

The four fragments of textile are all woven in plain 2/2 twill. Thread-counts (number of threads per cm) range from 12 x 14 to 15 x 20 per cm and this must

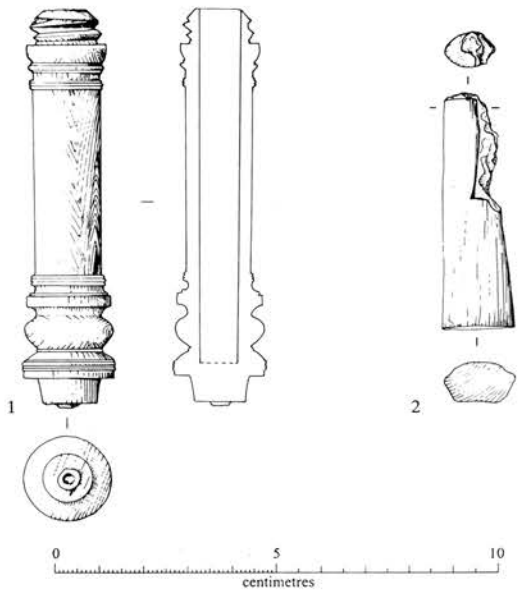


Figure 7. *Worked Ivory and Horn*
1: Turned Ivory pin case
2: Horn knife or tool handle

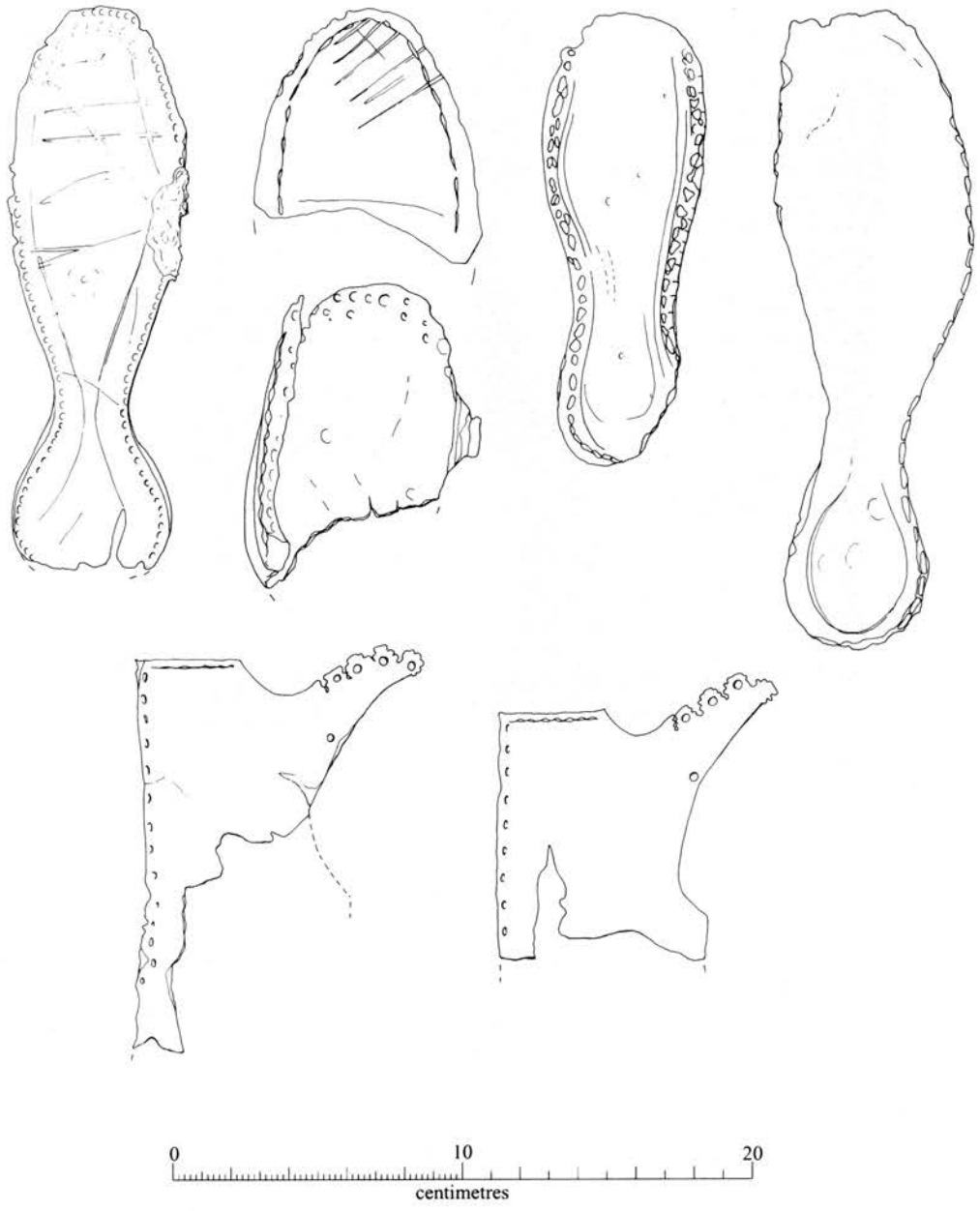


Figure 8. *Leather. A group of leather shoe fragments*

mean that there are at least two different fabrics present, although in all other respects the textiles are identical. These fragments are 'worsteds', a term which indicates that they are woven from smooth yarn which has been spun from combed wool. The fleece-types of one fragment proved to be Medium in one direction (probably the warp) and Semi-Fine in the other (probably the weft). Medium wools come from the fore-runner of the modern longwool breeds and are especially common in worsteds. The Semi-Fine is found nowadays in the shortwool Downland breeds: it appears in English and Flemish textiles from the 15th century onwards and would have given the fabric a slightly softer drape than is usual in worsteds.

Two of the pieces are narrow strips, folded lengthways, with stitch-holes along the fold and cut edges along the opposite side. They have obviously been cut from the edge of a garment or hanging, presumably during repair or re-working of the object.

Worsteds form a small percentage of medieval wool textiles, being far outnumbered by 'woollens', which are softer, felted fabrics (Crowfoot *et al* 1992, 36–7). Most recorded examples of medieval worsteds are 2/2 twills of the quality described here (ibid. fig.20). During the Tudor and Elizabethan periods, however, lighter and finer worsteds began to appear, often in new weaves, a process which can be seen most clearly in the dated sequence of tailors' offcuts from 15th- to 17th-century Newcastle upon Tyne (Walton 1981, 194–5; Walton 1983, 218, 230). The old

style of heavier worsted, as represented by the Pembroke College pieces, continued to appear during the post-medieval period, but it is less frequently found among collections of tailors' waste or garment parts. It is possible that by the later 16th century, such textiles were regarded as furnishing fabrics and used for bed curtains, bench covers and so on.

Felts

The 15 fragments of felt may be divided into two types, one 1.5mm thick and the other 2mm thick. The thicker of the two is made from a Semi-Fine fleece-type and includes fibre tips, which indicates that it comes from a lamb; the thinner felt is made from a Generalised Medium wool. The Generalised Medium wool is a common medieval type and, in terms of the evolution of the fleece, the predecessor of the Semi-Fine (see above). The two types are often found together in 15th- and 16th-century collections, as this is when the Semi-Fine began to displace the Generalised Medium, but in practical terms they are very much alike and were used for similar purposes. A trace of the red dye, madder, was detected in the thicker of the two felts. Madder is derived from the roots of the plant, *Rubia tinctorum* L, and was the most common dye in the large medieval collection of textiles from London (Walton 1992). It was used for shades ranging from peach, through tan to brick red.

Woven textiles with a felted appearance were commonplace in the 16th century, but true felt, made by compacting fibres with the aid of heat and moisture, was comparatively rare. Felt represents only 0.4% of all 16th-century archaeological finds of wool fabrics (author's unpublished data[3]), and there was only one small fragment of felt among the 490 16th-century textiles from Newcastle upon Tyne (Walton 1981, 200–1). Historical records show that felt making was largely the province of the hat makers (Bowden 1962, 47) and it is therefore highly likely that the Pembroke College fragments come from hats. Felt hats of the later 16th century might be worn plain, or covered in silk and ornamented with hat-bands, feathers and spangles. Stylish hats worn by men and women in Elizabethan portraits, for example, are known to have been worked on a felt base (Arnold 1988, 200–2).

In conclusion, these items have been shown to include strips cut from used fabrics, possibly furnishing fabrics, and worn-out felts which are likely to represent the remains of two hats. They therefore add to the evidence of the other artefacts, for deposition of domestic refuse in the cesspit.

Faunal Remains

Andy Clarke

Bone in the assemblage is on the whole in an excellent state of preservation, a result of the environment provided by the cesspit. This fact has made it possible to identify 72.2 % of the assemblage to species level and retrieve a high degree of data relating to such aspects as age at death and butchery practices. The species present within the assemblage are detailed in Table 1. This demonstrates an almost complete dominance by the major domestic species with, it seems, a preference for sheep. However, this preference does not eclipse the other species and, even though sheep probably formed the mainstay of the food intake, other domestic species made a significant contribution to a varied diet. Almost all of the skeletal elements are present in the assemblage. There is a notable lack of phalanges, no doubt a result of a recovery bias due to the difficult excavation conditions.

Table 1. Number of identifiable specimens per species (NISP).

Species	NISP	% of Total
Cattle	32	7.3
Sheep	98	22.3
Sheep/goat	2	0.4
Horse	9	2.0
Pig	10	2.3
Chicken	5	1.1
Goose	7	1.6
Cow size	68	15.5
Sheep size	51	11.6
Rodent	1	0.2
Fish sp.	22	5.0
Frog sp.	13	3.0
Unidentifiable	122	27.7
Total	440	100

The standard of preservation of the assemblage also made it possible to record a high degree of butchery evidence. As stated above almost all of the skeletal elements are present in the assemblage. This in itself is an indication of primary butchery, with the animals possibly being slaughtered close to, if not on, site. Added to this assumption is the fact that 8.8% of the bones displayed cut marks. The location of these cut marks provides further information on butchery practised at the site. Skull bones are cut across the occipital condyles, cut marks are also present on distal humerii and proximal radii, all of which are stereotypical indications of the dismemberment of a carcass during primary butchery. Added to this, there is also an indication that secondary butchery also occurred on site. This is manifested in cut marks on the pelvis and scapula indicating filleting of meat from these major meat-bearing bones. Also, almost all the vertebrae had been cut through the spinous process. This is a standard butchery practice that was well established by Saxon times and results from a carcass being split in two along the length of the spine (Crabbetree 1989). All the above observations represent classic secondary butchery of a prepared carcass into joints of meat.

It was possible to retrieve a moderate amount of ageing data. Age ranges are shown in Table 2 and it is clear that very young to fully mature animals were being exploited, no doubt producing a variety in cuts of meat. A further aspect of site activity is highlighted by foetal remains of cattle, sheep/goat and pig and juvenile remains of chicken. These bones indicate that, at least to a limited extent, animal husbandry was being practised within the vicinity.

Table 2. Age ranges observed for the major domestic species

Species	Age Range
Cattle	Foetal – <3yrs
Sheep/goat	Foetal to 4–6yrs
Horse	<3yrs
Chicken	Juvenile
Pig	Foetal to subadult

The faunal assemblage has provided a surprising amount of interpretive information considering its size. Information set out in this analysis shows that there was access to a good and varied supply of food. It is clear that the three major domestics, cow, sheep and pig, formed the mainstay of a diet that was supplemented by domestic chicken and geese, which were no doubt also kept for eggs. A small amount of fish bones were also recovered, although not identified to species level. All this is suggestive of an organised economic system involving the breeding, slaughter and butchery of smaller species of domestic animals, and at least the butchery of the larger domesticates.

Plant Remains

Rachel Ballantyne

The main economic plant remains are fruit stones of plum types (*Prunus domestica s.l.*) and dwarf cherry (*Prunus cerasus*). The plum stones fall into two morphological groups: those that are elongate, smooth and similar in cross-section to a primitive plum (*Prunus domestica*), and those which are larger and more flattened like stones of cultivated bullace or damson (*Prunus domestica* ssp. *institia*). There is often a high level of hybridisation between different plum types however (Murphy 1987), so such distinctions are fairly tentative.

Plums are believed to be introduced to Britain, and occur to varying degrees from the Roman period onwards. It is possible that early remains may represent imported fruits, but it does seem that plum types were cultivated in this country by medieval times (Greig 1991). Remains here were probably gathered from planted trees. The dwarf cherry is also an introduced species with a similar history in this country to plums. Nut types are also represented by their waterlogged shell remains. A small amount of hazelnut shell is present. There is also one fragment of walnut shell (*Juglans regia*).

Three other taxa present in small quantities in the sample may also have been deliberately grown. Holly (*Ilex aquifolium*) is often found planted in gardens and hedges despite being a native species. Large seeds of cabbage/mustard (*Brassica/Sinapis* sp.) may well represent a cultivated species, although this is difficult to determine, due to the similarity of the seeds within each genus. Finally there is one seed and tepal comparable to patience dock (*Rumex* c.f. *patientia*). This species was a continental introduction once grown as a pot-herb, and remains naturalised today in a few waste places (Grigson 1955).

A very distinctive range of 'wild' taxa is present within the well. Henbane (*Hyoscyamus niger*) dominates the assemblage with lesser amounts of cotton thistle seeds (*Onopordum acanthium*). Both species are associated with rough or waste ground, especially that which is high in nutrients; Perring *et al* note in their *Flora of Cambridgeshire* (1964) that henbane is particularly associated with farmyards, and Stace (1997) links it to manure of rabbits and cattle. The other highly represented species is stinking mayweed (*Anthemis cotula*), which is usually an arable weed but occurs also on rough ground. It has a very distinctive ecology, and is described by Hanf (1983) as being found 'particularly on fresh to wet, nutrient-rich, humus, water-logged loams and clay soils'. A small number of nettle seeds (*Urtica* spp.), which are often associated with nitrogen-rich soils, are also present.

Many other lesser components of the assemblage also suggest a disturbed environment. There are a range of Dock Family (Polygonaceae) taxa, including knotgrass (*Polygonum arviculare*), small-seeded docks (*Rumex sanguineus/conglomeratus/obstutifolius*) and curled dock (*Rumex crispus*). Also, one or two seeds of prickly sow-thistle (*Sonchus asper*), long-headed poppy (*Papaver dubium*), chickweed (*Stellaria media*), and goosefoots (Chenopodiaceae).

In addition to stinking mayweed and the dock species several other of the taxa present suggest that soils were quite damp. There are five seeds of hairy sedge (*Carex hirta*), two of cottontail grass (*Eriophorum* sp.) and single seeds of common spike-rush (*Eleocharis palustris*) and willowherb (*Epiliobium* sp.).

Some taxa are more characteristic of open grassy areas, such as buttercups (*Ranunculus acris/bulbosus/repens*), greater plantain (*Plantago major*), dandelion (*Taraxacum* sp), daisy (*Bellis perennis*), and common knapweed (*Centaurea nigra*). However, these all occur in very low amounts in comparison to the disturbed/rough ground flora, and there are only a few seeds of grasses present.

In summary it may be suggested that the surrounding area was of disturbed or rough ground that was nutrient-rich, possibly manured, and slightly damp. With the exception of one elder seed (*Sambucus nigra*) and the fruits of planted trees earlier discussed, virtually all plant taxa are small and of open areas including a low number characteristic of grassy places.

Historical evidence suggests that gardens were present in the vicinity of the feature during the later 16th century. In some respects the remains here support this, but they also diverge from this interpretation. As discussed many of the plants suggest an open environment with disturbed, nutrient-rich (possibly manured) soils that were damp – rather like a garden soil. There are remains present which must have derived from cultivated plants, such as plum types and walnut, and other species which might have been planted including holly, cabbage/mustard and patience dock. But there are two potential sources for such remains:

a) debris from cultivated plants growing nearby
b) remains of consumed foods deposited within the

artefactual rubbish that is also present within this context

It is likely that many of these seeds are widely displaced from their area of growth.

Whilst the 'wild' taxa indicate damp garden-like soils, they are also all species found commonly on disturbed wasteland, and most could be regarded as weeds within a garden. Both henbane and stinking mayweed are also noted for the particularly foetid nature of their blooms. All the potentially cultivated species, whatever their source, are far outnumbered in the assemblage by wild seeds. The assemblage from Pembroke College corresponds particularly well to that from waterlogged 16th century garden features at Hill Hall, Essex (Murphy & Scaife, 1991) where large numbers of wild taxa including those of open, disturbed, and damp soils were found. The examined contexts were interpreted as representing a stage of dereliction and backfilling, and this was further supported by domestic debris within the features. At Pembroke College two possible interpretations exist:

a) That the infilling of the feature with domestic debris marks a stage of dereliction for the gardens, in similar fashion to Hill Hall. Wild flora through their associations with nutrient-rich, disturbed soils suggest that the surrounding area had previously been cultivated.
b) The feature was located in an uncultivated but open area of rough ground, possibly to one side of the gardens, where manure had possibly been stored, and/or domestic waste left. The waste may have been deliberately placed into the feature, or could have slumped into it through time. The accumulation of occupation debris would create disturbed, nitrogen-rich soils conducive to the wild flora present here.

Finally, there is a possibility that low amounts of faeces were present within the artefactual remains, although no mineralised seeds were identified, which would indicate a concentration of cess. Fruit stones, such as those of plum types and cherries are most commonly found in waterlogged latrines and cesspits throughout the medieval and post-medieval periods (Greig 1991, Murphy & Scaife 1991), and it seems the stones were usually eaten with the fruit.

Discussion

This deposit dates to the very end of the 16th century, supported by the evidence of the pottery (notably the imports), jetons, and stylistic characteristics of the leather shoes. The date of construction of the clunch-lined pit is probably earlier, possibly early 16th century. The original date for the Old Brewhouse structure is of this period, based upon architectural elements identified during the survey (Hall & Baggs 2000). A well with similar clunch lining was uncovered at Bene't Court, a few hundred metres to the north, during excavations in 1996. This was assigned a comparable date of the early 16th century (Edwards 1996). Based on the date of that example, the cesspit may well have had up to a century of use, being regularly emptied, with the unsavoury contents probably carted away at night to be dumped outside the city (Platt 1976).

Before the changes in property boundaries during the 19th century and construction of Pembroke Library in 1875 the pit was situated within the surrounding yard of the Old Brewhouse building, in turn apparently within the wider grounds of the Bradley Family property fronting Trumpington Street. Loggan's and Custance's maps illustrated in Figure 2 support this evidence. Investigations within the Brewhouse building revealed a sequence of additions and alterations throughout its history (Hall & Baggs 2000). This is echoed in the archaeological record by the truncation of the pit by the northern extension to the building, constructed in the 17th or early 18th century. Earlier floors discovered within the Brewhouse denote a predecessor to this extension, possibly a lean-to or wooden construction tacked on to the northern end. With the exception of the floor, structural traces of this have not been found, more than likely obliterated or masked by later adaptations. Pottery finds immediately sealed by these floors were of the later 16th century, and of similar forms and fabrics to the cesspit group (Hall & Baggs 2000).

It is tempting to see the construction of this extension during the late 16th or early 17th century as the impetus for the closure of the cesspit. Even if this building did not extend as far out as the pit, the proximity of the new working or living quarters may have been just too close for comfort. Prior to this, the pit would have been set discreetly within the northwestern corner, against the boundary with the Pembroke College property. Not only will this position have offered some degree of privacy, but it seems sensible to place a cesspit as far from any living or work quarters as possible. Placing cesspits hard against property boundaries was common practice during the medieval and early post-medieval periods. Since the later 12th century, the problem of polluting one's neighbours property via underground seepage was a recognised concern, leading to a London Assize in 1189 requiring such pits to be situated several feet back from any boundary (Platt 1976). The pit may have been surrounded by wattle panels or housed within a small shed, such as a medieval barrel latrine discovered in Worcester (Greig 1981). The small post hole positioned centrally on the south side may relate to one of these screening panels or possibly the support for a seat or cover.

Environmental evidence adds to our understanding of the immediate environment. The wild taxa such as henbane, stinking mayweed, cotton thistle and nettle, are indicative of open, rough, nutrient rich ground. These are characteristics of a farmyard, or an uncultivated domestic yard, with piles of manure and refuse, and general occupation debris. Fruit stones were also recovered. Species such as plum, damson and cherry could have become incorporated into the deposit via human faeces. However, they may have

originated from within the immediate surroundings. An orchard of some form is suggested by Hamond's map of 1592 (Figure 2). Whatever the depositional process, it is possible such fruit trees were growing within the wider, garden area. This rather unkempt yard environment may represent a period of dereliction, possibly linked to a change in ownership. This would tie in well with the alterations to the Brewhouse structure, and the presence of demolition rubble within the cesspit fill. This will be further addressed with respect to the documentary evidence. Deposition within the cesspit is also brought into question by the environmental evidence. It is suggested that the incorporation of seeds took place over several months, and not during a single backfilling episode. A likely model is that the cesspit was open, if not in use, for a period of time during which these seeds became incorporated within the anaerobic context. A nearby rubbish heap of accumulated domestic waste and building rubble was then dumped in to close the pit.

The excellent preservation which provided such rich environmental data also meant that a diverse range of artefacts survived, evidence for a broad spectrum of activities and crafts. This is not just food waste, combined with accidental pottery breakages. There is evidence for butchery, woodworking, cobbling, probable building maintenance, and maybe even tailoring. An initial theory was that the deposit originated from a shared midden used by a variety of properties in the immediate surrounding area, each performing one or more of the activities evidenced within the assemblage. Alternatively, a proportion of this assemblage represents debris from a workshop in which one or more versatile craftsmen performed a variety of such tasks, possibly within the Brewhouse building itself. Inclusion of items such as bone and wooden handles and the hammer indicate a deliberate clear out of old tools, supporting this workshop theory. The shoes, leather offcuts, some of the wooden artefacts, and some of the textile fragments may well represent debris resulting from general maintenance or objects awaiting repair.

There are elements within the assemblage however, that call this independent, workshop theory into question, particularly the high quality of some of the finds and the faunal remains. The animal bones reveal both primary and secondary butchery taking place on or in the immediate proximity. For example, whole or half carcasses may be being brought in for preparation. This practice is well documented for the Bishops Palace in Ely. A list of household expenses from 1534, indicates the purchase of items such as *'a fat lamb, half a veal, a calves head, quarter of an ox'* (Stewart 1848). A similar practice appears to have occurred at St Radegund's Nunnery, prior to its dissolution and conversion into Jesus College. Recent work has demonstrated that resources were being brought in 'on hoof' (Evans *et al* 1998). This purchase and subsequent butchery of whole or half carcasses was common in large establishments or institutions, whether a religious house, college, or large household such as the Bradley Manor.

Bradley Manor house is first recorded in the later 16th century, although the family is known to have owned property on Trumpington Street since 1540 (Tony Baggs pers comm) The house was rebuilt in 1701 and given over to Peterhouse as the Master's Lodge in 1727 (Willis & Clark 1886). 16th and 17th century cartographic evidence suggests the Brewhouse functioned as some form of outbuilding, set in the corner of the Manor gardens (refer to Figure 2). By the early 19th century, the relationship is confirmed with the brewhouse functioning as the Master's stables. Association of the Brewhouse assemblage with the Manor House is further strengthened by the quality of some of the discarded refuse. The ivory needle case is an item of value and skilfully crafted, as is the wooden spoon and small wooden box. The pottery assemblage includes continental imports as well as standard utilitarian wares. It has also been proposed that some of the textiles may have originated from furniture covers or hangings. These items imply a status in keeping with a large household. As such, they are perhaps less contradictory with the workshop model for the Brewhouse, since such items could have originally derived from the main manorial residence.

Title deeds relating to the transfer of the Manor house ownership, held within the Peterhouse archive, support many of the proposals outlined above. This information contains much of relevance. The two *Messuages* (properties) are referred to in a deed as *'Cottages formerly belonging to the Chantry of Little St. Mary, sale in 1547 to William and Thomas Bradlie'*. It is possible one of these cottages was the Old Brewhouse structure itself. A further deed records the transfer of the property. *'27 Elizabeth (1584/5) Richard Bradlie and Agnes his wife to William Greke and Margaret Bradlie. Two messuages, a garden, a barn, and orchard, and eight acres.'* (Peterhouse archive). Significantly the date of the property transfer, 1584/85, suggests that closure of the cesspit, probable clearance of material from the workshop, and subsequent additions to the Brewhouse may result from a change in ownership.

To conclude, significant and varied information has been obtained from the study of a single, discrete assemblage. Its association with the Brewhouse building appears clear, and in turn this structure's close relationship with the Bradley household seems likely, although further scrutiny of relevant documentary sources might shed more light. Nevertheless, composition of the cesspit assemblage would seem consistent with a manorial workshop, which included other items from the main residence, either as primary or secondary acquisitions. This work demonstrates the importance of integrating information from a variety of historical, archaeological and architectural sources, thus providing a much richer, and in this case coherent narrative.

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Endnotes

1 The name Brewhouse relates to its 19th century function, and not the use of the building as contemporary with the pit assemblage discussed in this paper.
2 Identified by Julia Poole of the Fitzwilliam Museum, Cambridge.
3 'Author's unpublished data' refers to the computerised database held at TRA, York. As well as a complete record of published archaeological textiles, the database includes over a thousand unpublished items collected together during 22 years' consultancy work.

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