

# INVESTIGATIONS AT THE COUNTY MUSEUM, AYLESBURY

D. BONNER, WITH CONTRIBUTIONS FROM J. PARKHOUSE, R. PELLING,  
L. RAYNER, P. SADLER, N. SMITH, AND H. A. WALDRON.

*Excavations and a watching brief undertaken during rebuilding work at the County Museum are described. There were a few features of Iron-Age date, but no Romano-British or Saxon features. Development of a dark soil is believed to have begun during the mid or late Saxon period, but the deposit was substantially reworked during later periods of activity.*

*Abundant evidence for activity during the twelfth to fourteenth centuries was recorded. An inhumation cemetery of two phases, with the inhumations of the later phase orientated at 90° to those of the earlier phase, was in use during the thirteenth century. The cemetery is believed to indicate that St Mary's churchyard extended beyond its present limits for part of the medieval period, but the idiosyncratic orientations of both phases of inhumation suggest that the museum burials and St. Mary's were not readily inter-visible. One unusual rite (burial below a wooden plank) was recorded.*

*Four phases of medieval pits and wells were recognised. A ditch belonging to the first of these phases (mid-late twelfth century?) is thought to be a property boundary at right angles to Church Street; this boundary may have been short-lived. No structural features were discovered.*

*Features from each of the succeeding centuries were also recorded; some of these may be related to previously documented building work on the site, and in particular the construction of the grammar school in 1718.*

*The finds reports illuminate various social and economic aspects of medieval and post-medieval Aylesbury. Most of the pottery assemblage was locally manufactured although there were a few imports of continental stonewares and tin-glazed wares during the post-medieval periods. The animal bone assemblage yielded evidence for fowl-rearing and pig-breeding within the medieval town, and for improvements to the sheep breeding stock during the seventeenth century. A variety of fish was imported. Palaeobotanical remains from cess-pits of various periods showed the range of foodstuffs consumed.*

## PREVIOUS ARCHAEOLOGICAL WORK IN AYLESBURY (Fig 1)

The position of Aylesbury on a low hill of Portland Limestone protruding from the damp clays of the surrounding vale has attracted settlement since prehistoric times. The earliest activity to have been

examined archaeologically dates to the Middle Iron Age, when a hill-fort was constructed. Deposits associated with this period have been examined at the Prebendal (Farley 1986i; 1986ii) and George St (Allen and Dalwood 1983), within the historic core of the town. Residual Iron Age material has also

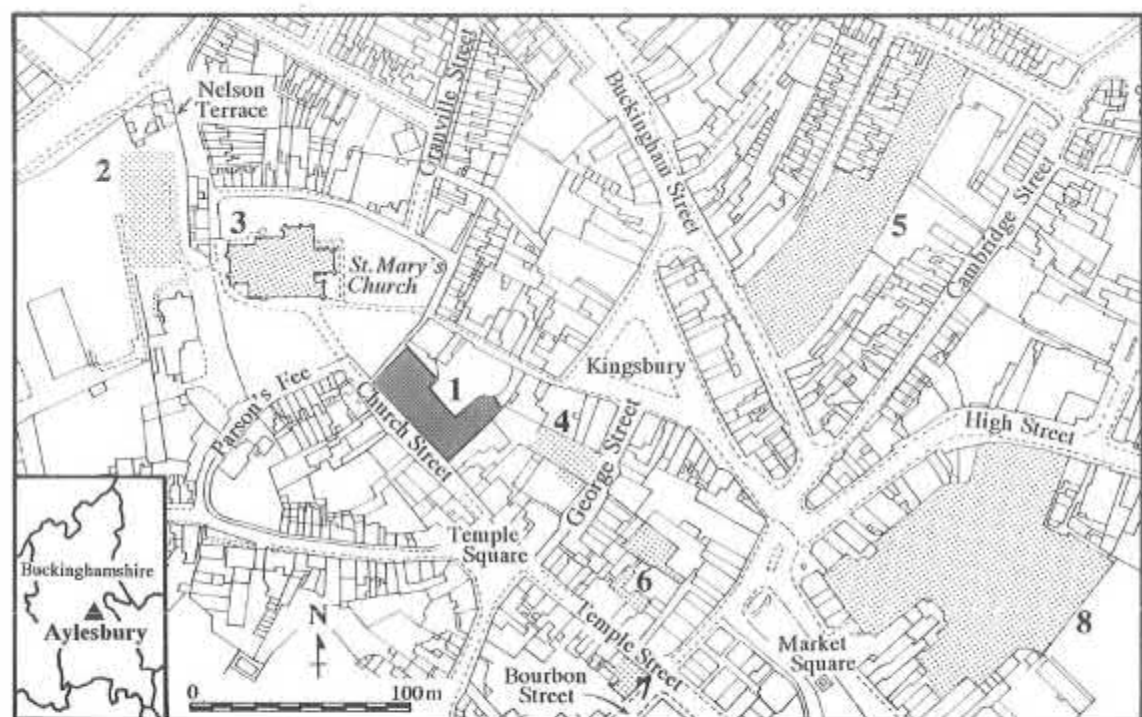


Fig. 1: The County Museum in relation to other areas of archaeological interest mentioned in the text. 1: County Museum; 2: The Prebendal; 3: St Mary's Church; 4: George Street; 5: Buckingham Street; 6: The King's Head; 7: Bourbon Street; 8: Bull's Head.

been found at the King's Head (Bonner and Enright 1995), and in Granville Street (Gowing 1964, 301), whilst a substantial ditch observed beneath Bourbon Street is also thought to be of possible Iron Age date (Anon 1973; Farley 1979 and *pers comm*).

There is a comparative dearth of Romano-British evidence within the town, despite the proximity of Akeman Street. A pit and two curvilinear gullies were investigated on Buckingham Street in 1979, and in the following year a large V-profile ditch of probable late Iron Age or early Romano-British date and two Romano-British pits were cursorily examined during the Hale Leys redevelopment (Allen 1982), but evidence for this period is otherwise restricted to residual finds at George Street and a small number of stray finds within the town (see Allen 1982, fig 1).

Evidence for early Saxon activity within Aylesbury is even more elusive, notwithstanding the mention of Aylesbury in the Anglo-Saxon Chronicle *sub anno* 571. The *-byrig* element in the place-

name may well relate to the hillfort defences, which were re-dug during the early or mid Saxon period, but there is little evidence from within the defensive circuit, in contrast to the very extensive settlement some 1.5km south at Walton (Farley 1976; Dalwood *et al* 1989; Bonner and Dalwood *forth.*).

There are good reasons for believing that there was a minster church at Aylesbury by the eighth century. Investigations at St Mary's showed that the foundations, the earliest of which appear to be late Saxon, cut a "dark soil" similar to that observed at several other sites within the town (see below) and interpreted at St Mary's as a possible plough-soil (Durham 1978). One of the most important pieces of Anglo-Saxon evidence, however, is the mid to late Saxon cemetery investigated at George Street; the evidence suggested that the St Mary's cemetery had originally been far more extensive than at present, and consistent with a Minster church with burial rights over a large area of the surrounding countryside. Several other buri-

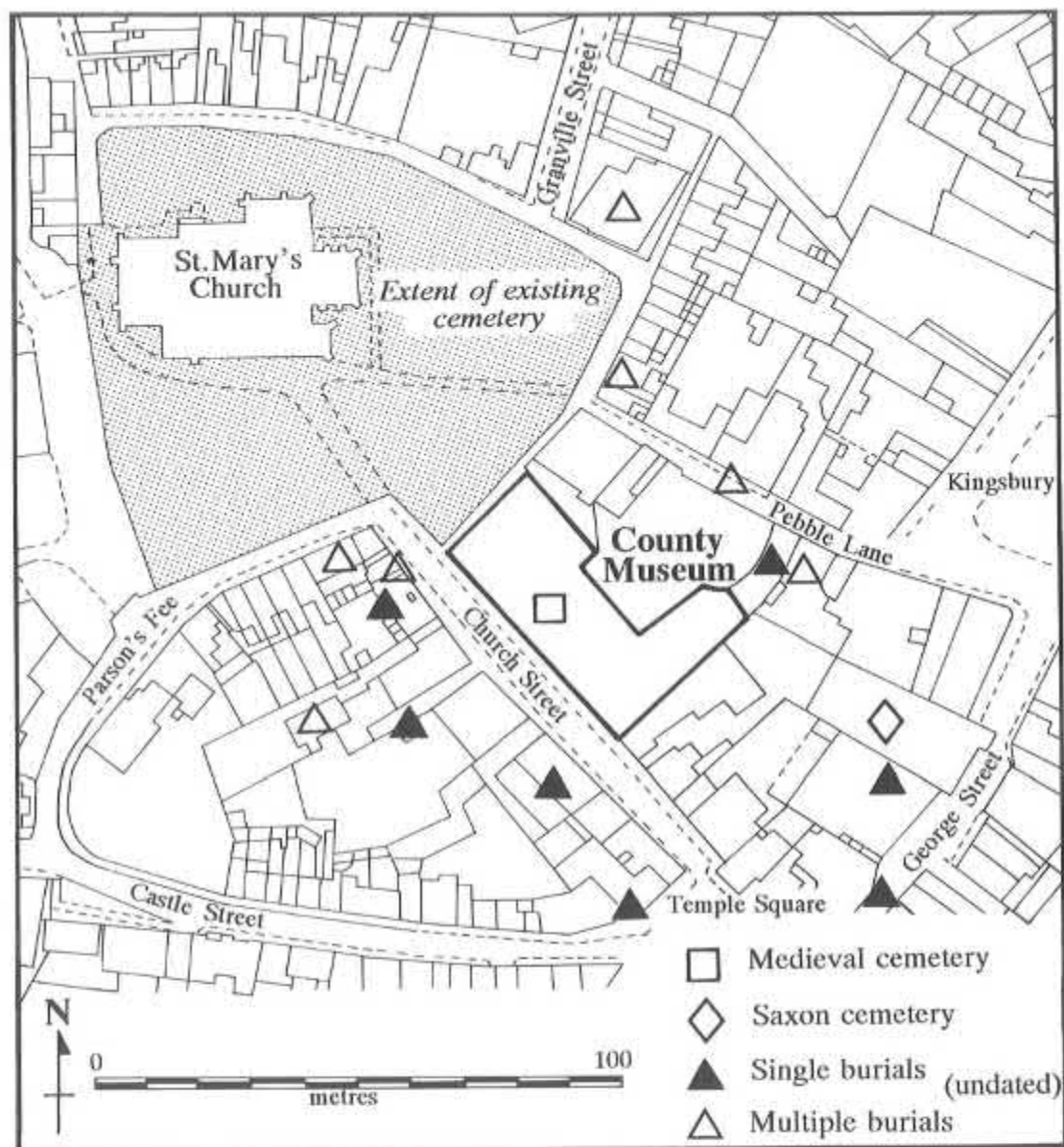


Fig. 2: The County Museum/ St Mary's area and immediate environs, showing extent of recorded inhumations.

als have been recorded in central Aylesbury (Farley 1979), including some from within the curtilage of the museum, and others from properties along Church Street (Fig 2).

Late Saxon Aylesbury had a mint from the reign of Ethelred II until the reign of Harold, but there is little else to demonstrate burghal status. From

c.970 it was a royal estate. The church was one of only four in the county to be mentioned in Domesday Book and was clearly of some status (Farley 1979). There is little in the way of either artefacts or structures from this period, and Aylesbury's urban origins are poorly understood. The axis of the late Saxon settlement may have been along Temple Street and Silver Street, but the evidence is

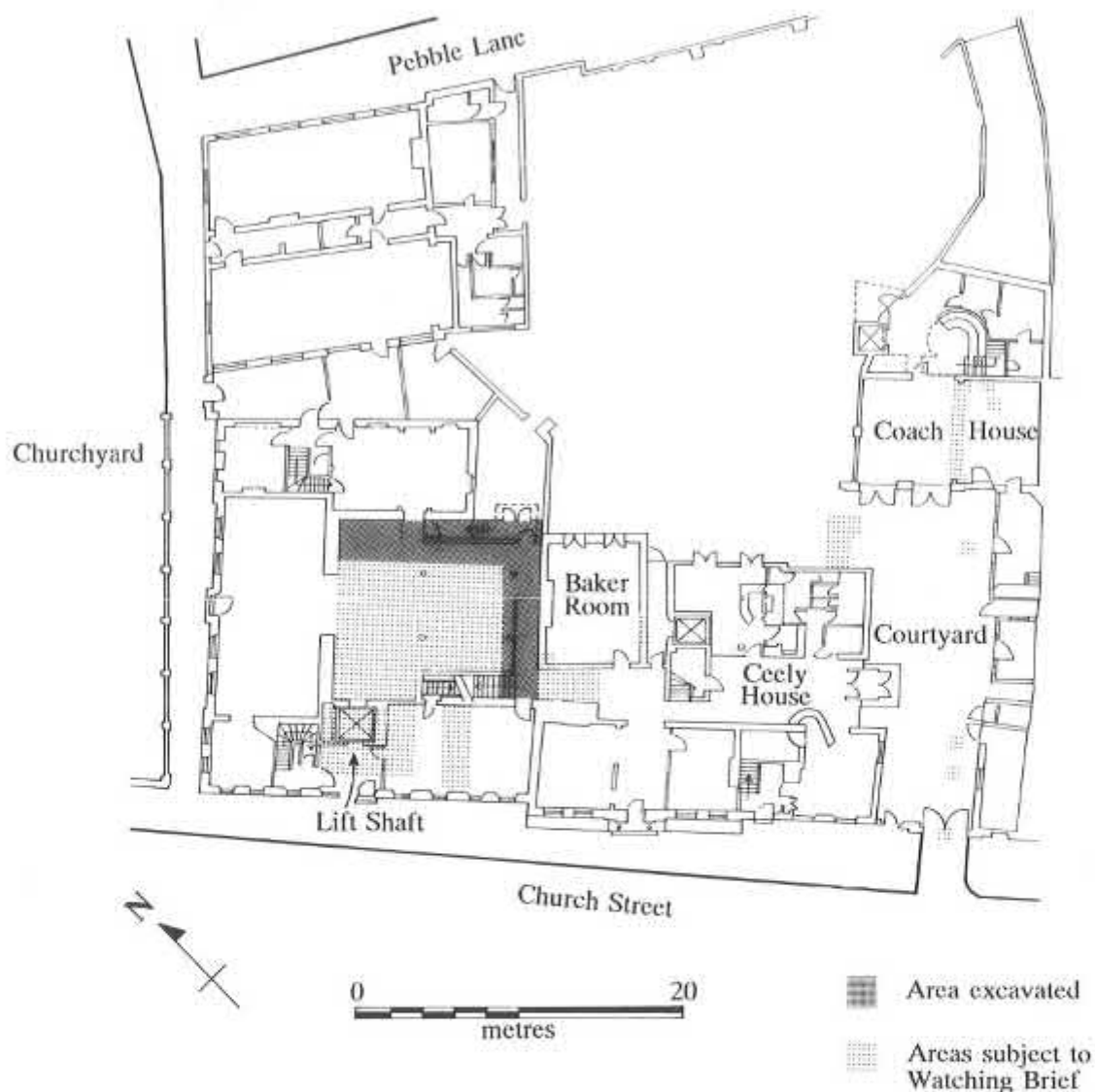


Fig. 3: Location of 1993 excavation and watching brief.

inconclusive. By the late twelfth century rubbish pits of a typically urban nature were being dug at the George Street site and elsewhere within the town, and Aylesbury evidently grew in importance, supplanting Buckingham as the administrative town of the shire. However, little has been recovered in the way of property boundaries or buildings from the medieval period, and this paucity of data, when set against a complete absence of cartographic data prior to the mid nineteenth century,

means that the topographical development of the town is obscure.

#### ARCHAEOLOGICAL RECORDING DURING REFURBISHMENT AT THE COUNTY MUSEUM. (Fig 3)

Work on a major rebuilding programme at the County Museum, including the insertion of an art gallery, began in 1992. Unfortunately, in spite of the site's archaeological sensitivity, no financial

provision had been made for any form of archaeological recording. The first archaeological discoveries were made by the contractors' staff early in 1993, and an intermittent watching brief was maintained during the main period of structural works, which continued until late 1994. It became apparent during the course of the work that a significant area of archaeological deposits would be disturbed in the area of the former muniment room (where burials had been discovered during its construction in 1933–34), beneath the area of the new Art Gallery. Negotiations were undertaken with the contractors and the County Architect's Department, as a result of which a programme of excavation was implemented within the basement area during July and August 1993. The work on site was funded by the County Council from within the Museum restoration budget, with generous support from the Buckinghamshire Archaeological Society, and with provision of assistance in kind from the contractors. All further costs, including post-excavation, were borne by the County Museum.

### The Watching Brief

The amount of staff time which could be devoted to this project was limited, given the absence of funding, and most of the watching brief was undertaken by J Parkhouse. Visits were made largely in response to discoveries of human skeletal material made by the contractors. In a few cases it was possible to record non-funerary features and stratigraphy, but the conditions for recording data were generally unsatisfactory. Although significant quantities of pottery were recovered, the greater part of this material was picked up on site by the construction staff. The recording which took place was mainly in the form of photographs and drawn sections. Most recording was undertaken in restricted spaces illuminated by portable fluorescent strip-lights, and in most instances it is likely that the stratigraphy was significantly more complex than could be seen from inspection of the sections. Section cleaning was often impractical.

The results of the watching brief have been incorporated in the appropriate sections of this report. A fuller record of the watching brief will be found in the site archive.

### The excavation

The excavation was undertaken over a six week period in July and August 1993 by a small team from the County Museum Archaeological Service under David Bonner's direction, with considerable help from volunteers, including members of the County Museum Archaeological Group.

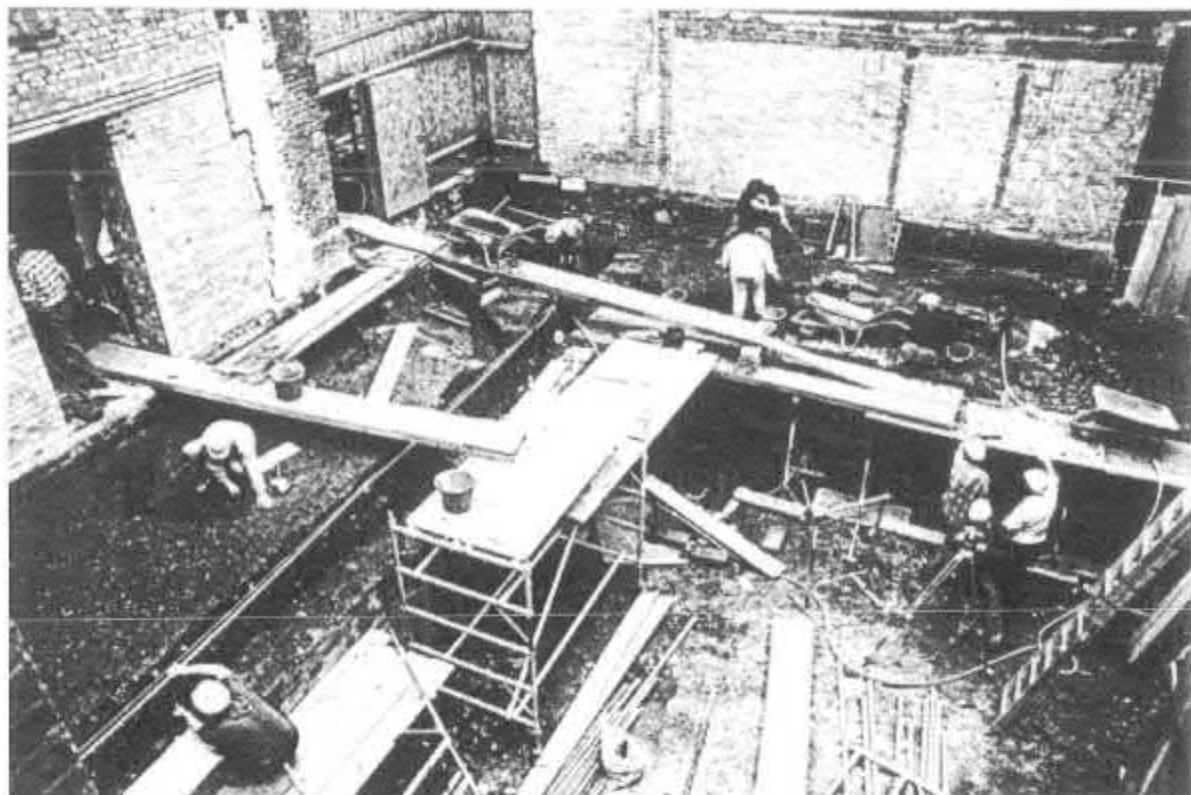
The main objectives of the excavation were to look for further evidence of Iron Age and Saxon occupation, to establish whether the Middle Saxon cemetery at George Street extended further north, to record any evidence for medieval settlement, and to attempt to relate any medieval and post-medieval features to the adjacent standing buildings, which had been the subject of a recent study (Trench and Fenley 1991).

The main body of the Museum building is the former Grammar School, constructed in 1718, which incorporated late seventeenth-century structures in the wing fronting Church Street. Further buildings were added to the southeast c.1740; these additions incorporated remnants of structures dated by dendrochronology to 1472/3 or shortly thereafter.

The area available for excavation consisted of a narrow L-shaped strip situated between the north-eastern and southeastern walls of the former muniment room and the adjacent ranges of the museum buildings; the grammar school walls of 1718 to the northeast, and a late eighteenth-century structure (the Baker Room) to the southeast (figs 3 and 4). As this had been an open area since the eighteenth century, preservation of underlying deposits was expected to be good.

The depth of the former muniment room was such that once the walls had been demolished, the archaeological deposits available for examination were visible in section prior to their excavation (fig 5). The muniment room had removed virtually all archaeological deposits within its footprint; however, the truncated bases of a few deeply cut pits remained *in situ*, and these were examined during the course of the excavation.

The excavation programme was constrained by various aspects of the construction works, particularly the need to underpin the adjacent walls in



**Fig. 4:** General view of the excavations, looking east. The remains of the muniment room wall are visible behind the scaffolding.

stages. This meant that the area next to the Baker Room to the southeast could not be excavated as a single open area, but had to be excavated in 1.8m wide sections, in order that the walls could be underpinned in stages. These constraints inevitably caused some difficulties in recording.

Unimpeded stratigraphic excavation of the rest of the site progressed down to the surface of the Portland limestone, at which stage it was decided by the architects that the adjacent wall to the north-east (part of the 1718 Grammar School structure) also required underpinning. This afforded an opportunity to investigate further a number of inhumation burials beneath the wall.

#### **MIDDLE IRON AGE (Fig 6)**

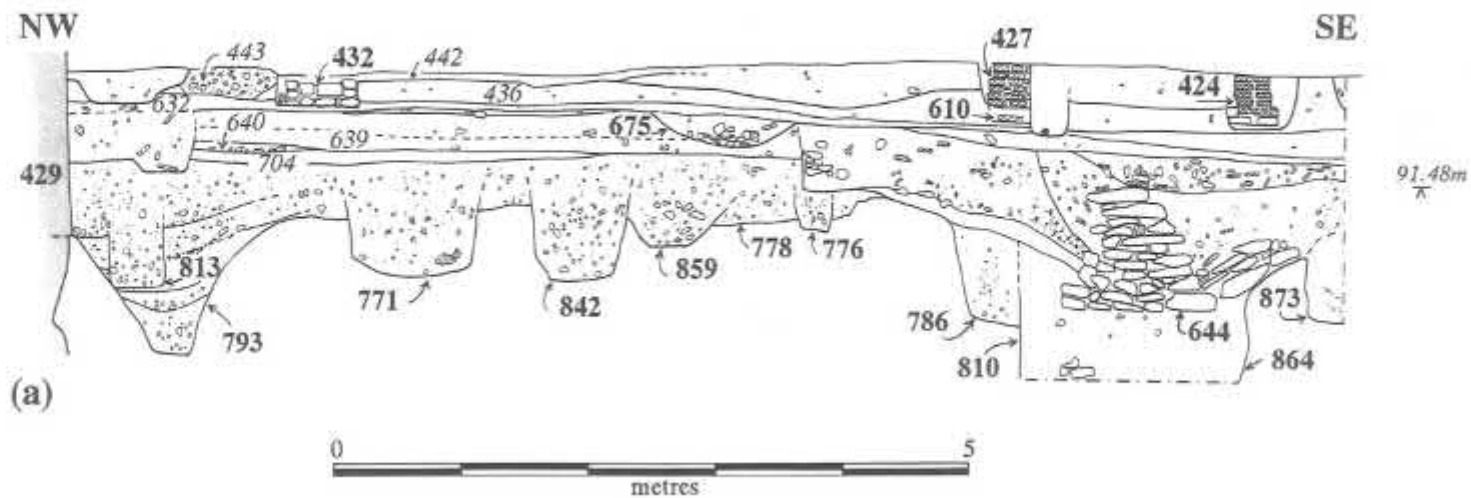
The identified features consisted of four gullies and two pits which contained small quantities of

Iron Age pottery. These vestigial features were cut into the degraded surface of the basal Portland limestone and were overlain by a later "dark soil" deposit (704/906).

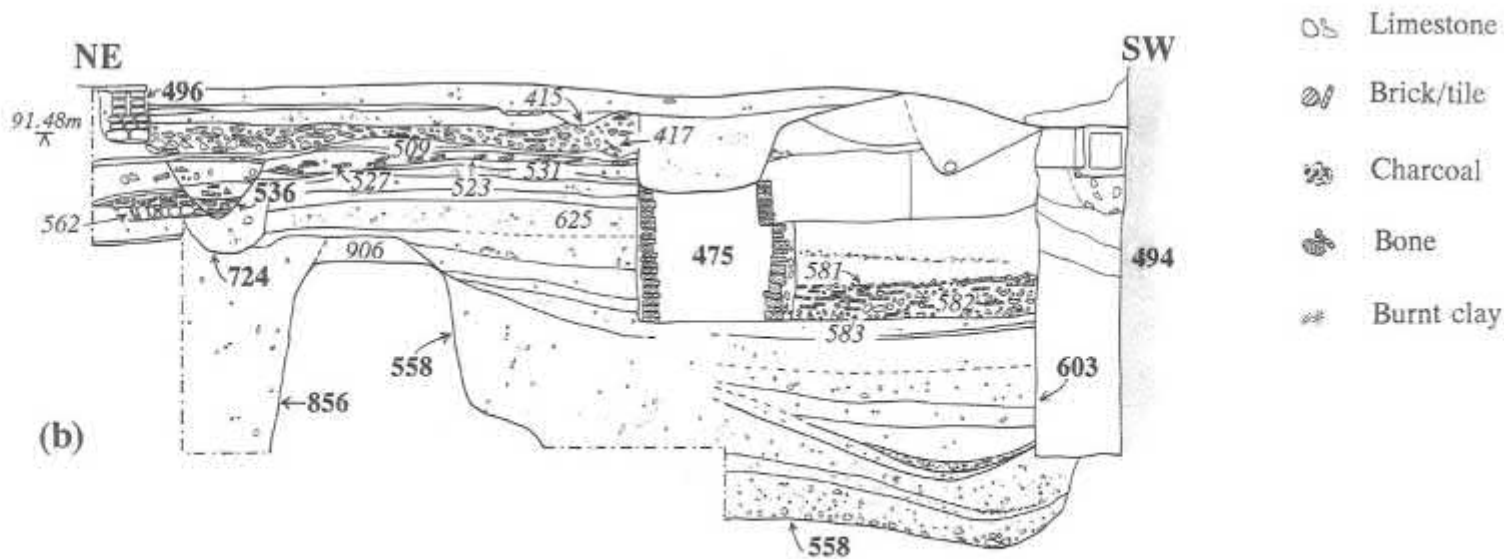
**Pit 784:** sub-rounded/oval, bowl-like profile (0.39m L × 0.36m W × 0.08m deep). Cut by wall 494. Filled by silty-clay loam with limestone grits. Contained 3 large joining burnished IA sherds with incised decoration, 9 coarse sherds and animal bone. Wet sieving recovered burnt flint and charcoal.

**Pit 778:** sub-rounded, shallow bowl-like profile (1.3m W × 0.15m D). Cut by an IA gully (859). Later cut by a post-med pit (675) and NE wall of the former muniments room. Filled by a sandy silt. Contained fragments of animal bone. Wet sieving recovered pottery, burnt flint, charcoal and carbonised grains/seeds.

**Gully 799:** shallow 'U'-profile with flat base (1.1m+ L × 0.20m W × 0.07m D). At right-angles to gully 709. Truncated by a medieval pit (810). Filled by a dark



(a)



(b)

Fig. 5: Main (a) northeast and (b) southeast sections.

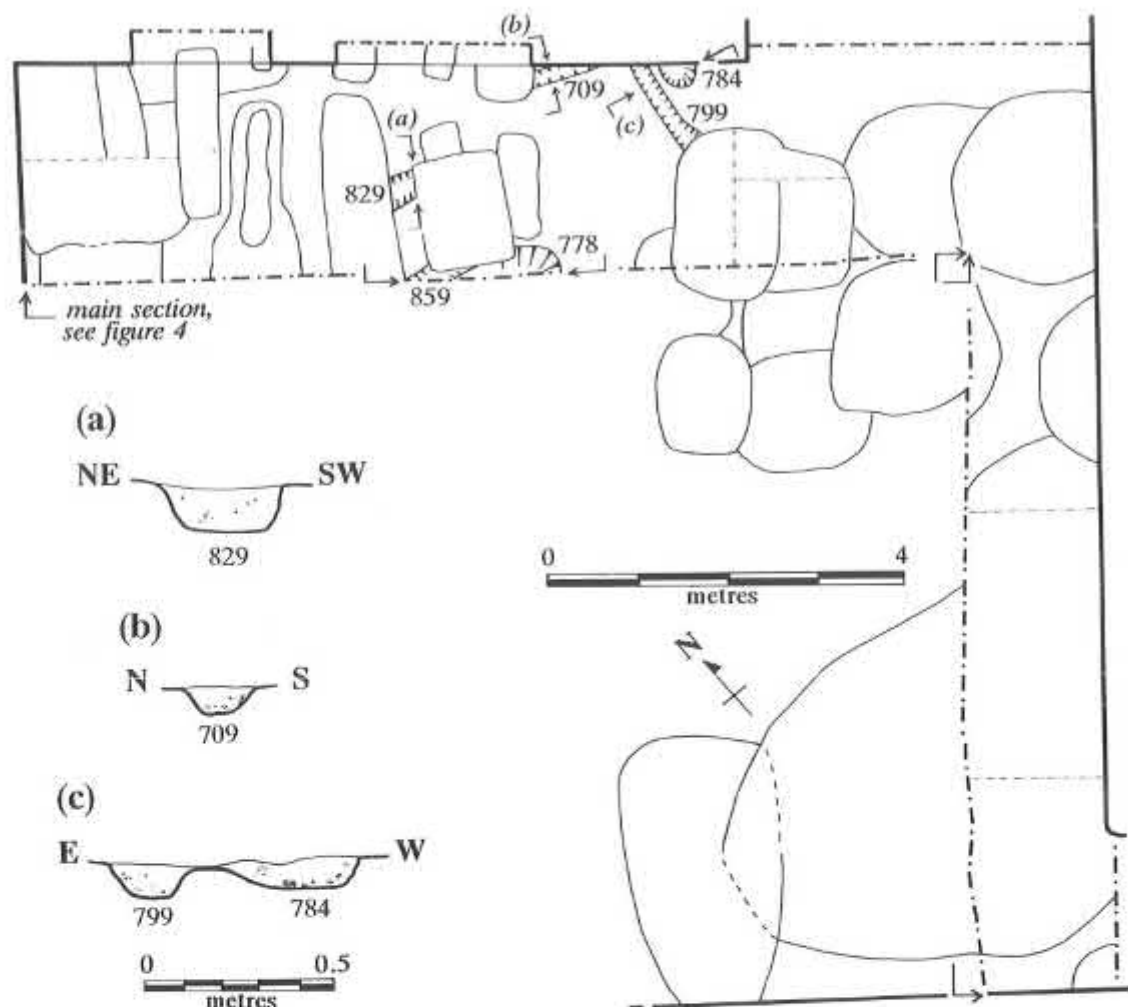


Fig. 6: Iron Age features, with later features shown in outline.

silty clay loam. Contained 4 IA sherds, animal bone and an oval/acorn-shaped perforated shale bead. Wet sieving recovered a flake, an unidentified iron object, charcoal and carbonised grains/seeds.

**Gully 709:** shallow 'U'-profile with flat base (0.9m+ L × 0.17m W × 0.10m D). At right-angles to gully 799. Truncated by burial 815. Filled by dark silty clay loam. Contained 1 undiagnostic (IA/Saxon) sherd, 1 flake, and animal bone.

**Gully 859:** 'U'-profile, broader and flatter-bottomed than other IA gullies (0.7m+ L × 0.44m W and 0.18m D). Parallel with Gully 829. Cut IA pit 778. Cut by post-med pit 675. Filled by a dark sandy clay

loam. Contained 5 IA sherds, animal bone and a copper-alloy pin.

**Gully 829:** 'U'-profile with a flat base (0.3m+ L × 0.29m W and 0.19m D). Parallel with Gully 859. Cut by medieval grave 842 and post-med pit 675. Filled by a clayey loam. Contained 1 undiagnostic (IA/Saxon) sherd, 1 flake and animal bone. Wet sieving recovered carbonised grains/seeds and charcoal.

### Discussion

Although only six features were identified, a large quantity of residual Iron Age pottery from later features suggested that there had originally



been further Iron Age features here (see on).

The right-angle alignment of two gullies (709 and 799) suggested that they were possibly contemporary, although unfortunately their direct relationship had been destroyed. The silty fills of the gullies suggested that they possibly drained surface water and may have formed part of a small enclosure. The two pits (778 and 784) may also be broadly contemporary with these gullies. Their function was uncertain, although Pit 784 could have been a posthole.

A later phase of activity was indicated by two other gullies (829 and 859), one of which cut Pit 778. The proximity and parallel alignment of these suggested that they were broadly contemporary, although their orientation was slightly different to that of Gully 709. A structural function is more likely for the later gullies, which had trench-like profiles and non-silty fills.

The total Iron Age pottery assemblage consisted of twenty-three sherds from Iron Age features, and a further one hundred and three sherds from residual, post-Iron Age contexts. The composition of this relatively small group was broadly comparable with the material from previous excavations in the town centre; mostly plain and unburnished sandy, shelly and flint-gritted sherds.

An additional thirty-nine vegetable-tempered sherds could not be confidently identified as either Iron Age or Early Saxon. An Iron Age date might be more likely, as only fourteen definitely Early Saxon sherds were present. A similar conclusion was reached in respect of similar sherds from George Street (Allen and Dalwood 1983, 15–17).

The main sources of the residual Iron Age pottery, which formed 83% of the assemblage, were the deep thirteenth and fourteenth-century pits. Only 5% of Iron Age pottery was found within the overlying (possibly Saxon) "dark soil", indicating that this layer was not a major truncation horizon.

The focus of the Iron Age settlement appears to be to the north side of the present town; it is interesting to note that Iron Age feature and sherd densities were up to four times higher at the Museum site (2.8 per square metre) than at George Street.

A range of fine and coarse wares were being used, including highly decorated vessels (such as the unusual carinated bowl from pit 784). The copper alloy pin from gully 859 may have come from a brooch similar to the bronze fibula at George Street (Allen and Dalwood 1983, 16; Fig.11). The fragment of shale bead from gully 799 indicates that certain raw materials were procured over long distance, the most likely source of the shale being Dorset. These materials suggest a high status for at least some of the occupants of the hillfort.

The faunal assemblage (14 pieces of bone including cattle, sheep and pig) is too small to provide insight into diet and economy.

A small flint assemblage was recovered from the site, but there is little reason to consider any of it to be Iron Age, other than the fact that two flints were found in Iron Age gullies, and the similarity of a flint pounder from the Museum site to one from George Street (Allen and Dalwood 1983, 16; Fig.2).

## SAXON ACTIVITY AND THE "DARK SOIL"

### The "Dark Soil"

A dark soil deposit, consisting of an upper and lower component, lay over the Iron Age features, which were cut into the degraded surface of the Portland limestone. The layer survived up to 0.54m deep over the northwestern side of the site, but had been largely removed elsewhere by medieval pits. Its sandier upper component was evidence of post-depositional modification by natural lessivage (the downward transport of finer particles by water percolation).

704 (upper part of deposit): homogeneous, dark greenish-black sandy clay loam with limestone grit, contained 72 Saxo-Norman sherds, 45 14th/15th C. sherds, 4 post-medieval sherds, animal bone, glass and shell.

906 (lower component): homogenous, dark brownish-black (silty) clay loam with limestone grit and occasional charcoal flecks. It was removed in four spits (743, 751, 754 and 767), which contained in total 375 sherds of thirteenth to fourteenth-century pottery, 11 Saxon sherds, 5 Iron Age sherds, animal bone, and two whetstones.

## Discussion

Dark soil deposits have been identified at six sites in central Aylesbury, suggesting that it may extend over an area of at least 0.6km<sup>2</sup>. It is best preserved near St Mary's church, but becomes more superficial to the southeast and east of the Museum site.

'Dark soil' deposits of this type have been recorded in many urban centres across Britain. Research has tended to focus upon formation processes and dating. The favoured explanation for the "dark soil" in London, which is typically a dark grey silty loam up to 1m or more thick, is that it was formed during a period of site abandonment and represents a post-depositional reworking of late Roman structural deposits; deposition is ruled out as a principal factor in dark earth formation (Yule 1990). Reworking is thought to be biological rather than mechanical (eg by ploughing), for mortar floors immediately beneath the dark earth are undamaged, whilst numerous *Enchytraeidae* wormcasts are responsible for the deposit's structure and colour. However, some accretion is also thought to occur where the deposits are deep. Accretion rates may be quite significant – development of soils over 200mm thick has been recorded over war-damaged sites in Berlin (Sukkop *et al* 1979). "Dark earths" are also found to commence on mid-Saxon (c AD 700) floors in London (Courty *et al* 1989, 261–268).

The dark soil deposit at the Museum site showed a marked contrast with the naturally occurring soil profile over Portland limestone ('Aylesbury Series'), which is a mull topsoil above a dark, sandy calcareous loam of rendzina type, with a brashy transition layer which grades into the underlying substrate. It has good moisture retention and high earthworm activity but becomes deeper and less friable under cultivation (Temple 1929, 33; Avery 1964, 51–52, 104–105). In contrast, the dark soil was an homogenous silty clay loam deposit with minimal evidence of substrate transition, and an absence of any surviving element of the pre-existing subsoil, indicating an anthropogenic formation. This hypothesis was supported by the Iron Age sherds within the dark soil, and the underlying truncated Iron Age features.

The most likely causes of a localised increase in

subsoil depth are the interment of burials, the accumulation of settlement waste and horticulture.

Domestic refuse and human bone within the dark soil however may be accounted for by unidentified medieval pit and grave cuts (see below). Some form of horticulture or more open cultivation may have been an important contributory factor in the origins of the dark soil, suggesting that this part of central Aylesbury was open land or the rear of burgage plots. However, some reworking of Iron Age or Saxon deposits, whether mechanical or biological need not be ruled out.

No micromorphological analysis has yet been undertaken in support of these conclusions and these deposits may have been subject to different formation processes across Aylesbury. Consequently, micromorphological study of dark soil deposits within Aylesbury should be considered a high priority for future research.

## Dating

Dating the dark soil is problematic. Its base was cut by a late 12th-century ditch (793), which provides a *terminus ante quem* for the deposit's formation. Apart from the few Iron Age sherds present, which were clearly derived from underlying truncated features (see above), the pottery includes a mid-Saxon Ipswich sherd, a sherd of St Neots type and seventy-two Saxo-Norman sherds (86% of this type of sherd from the site), indicating a prolonged period of formation between the eighth (if not earlier) and early twelfth centuries AD. The material was probably introduced into the dark soil by manuring activities from nearby settlement, rather than by direct feature truncation on site.

A late Saxon *terminus ante quem* is suggested for a similar soil at St Mary's church, as well as similar deposits from other urban centres across England and the continent (see eg London: Yule 1990).

At odds with this suggested dating, however, is the presence of three hundred and seventy five thirteenth or fourteenth century sherds (72% of the ceramic assemblage from the dark soil). However, these sherds may be accounted for by several graves and pits, initially unidentified, which only

became visible towards the base of the dark soil. The fourteenth or fifteenth-century sherds and early post-medieval sherds were probably introduced during the later reworking of the upper part of the deposit.

To summarise: although formation of dark soil deposits at urban sites elsewhere has frequently been found to be of late/sub-Roman or Saxon date, this is not necessarily the case at Aylesbury. Whilst, on stratigraphic grounds, the process may have started at some point in the Saxon period, the high proportion of medieval sherds strongly suggests that the 'dark soil' deposits were probably being formed, and certainly re-worked, well into the medieval period.

#### *Saxon activity: other considerations*

The small quantity of early (and mid) Saxon pottery at the Museum site reflects a dearth across the town. Early Saxon pottery within the town centre has only been positively identified at George Street, whilst the absence of mid-Saxon pottery may possibly be the result of a largely aceramic phase during the eighth to ninth centuries (Farley 1986ii, 38); demonstrably mid-Saxon ceramics have been hard to identify at other sites in mid-Buckinghamshire, including Walton.

It has been noted above that there was a quantity of vegetable-tempered pottery of indeterminate date, which it was suggested might be Iron Age. These sherds, however, were more often found with mid or late Saxon pottery, and almost 50% of them came from the dark soil deposit.

The absence of Saxon features at the Museum, particularly the lack of graves of this date, is of interest. Excavations at nearby George Street revealed 26 individuals within a cemetery dated to between the late eighth and early tenth century, attributed to a minster church. The cemetery was estimated to have been around 2.5 ha with up to 6000 graves (Allen and Dalwood 1983, 50-53). However, the absence of any Saxon burials at the Museum, the Prebendal and the Kings Head sites suggests that the Saxon cemetery in fact occupied a more restricted area (perhaps about 100m from north to south) over 120m to the southeast of the church. It also raises the question of whether the

Minster was on the site of the present day St Mary's; although, if it was not, the reasons for such a shift in position, which must have taken place no later than the late Saxon period, are far from clear, and this hypothesis can probably be discounted. The absence of other types of cut feature of Saxon date may be no more than a reflection of the comparatively small size of the excavation area; furthermore, the "dark soil" may have entirely destroyed the integrity of any deposits earlier than the medieval period.

#### **MEDIEVAL ACTIVITY (Fig 7)**

At least three phases of medieval activity were recognised on stratigraphic grounds, but they were not strictly corroborated by the ceramic phasing, on which the following four phases are based; these ceramic phases are not absolute and therefore overlap chronologically.

Phase I:	twelfth century (2 features)
Phase II:	late twelfth to early thirteenth century (10 features)
Phase III:	thirteenth to fourteenth century (5 features)
Phase IV :	fourteenth century (3 features)

#### **Phase I: twelfth century**

**Ditch 793**, orientated NE-SW (230°) with symmetrical 'V'-shaped profile and narrow concave base (0.4m+ L × 1.7m W × 1.1m D). The ditch sloped down to the NE. Three fills: sandy clay loam with distinctive greenish tinge, containing grey silty clay loam lens; charcoal dump along SE side; clay loam deposit of mixed character, containing frequent sub-angular limestone fragments, along the NW side. Contained 74 medieval sherds, 2 residual IA sherds, animal bone, ceramic roof tile and 2 iron fragments. Cut Dark Soil 906 and cut by Pit 875 (Phase II) and modern wall 489.

**Pit 852**, sub-rounded with steep sides and a rounded base (1m Diam × 1.5m+ D est.), filled by homogenous clayey silt. Contained 1 med sherd and 1 residual IA sherd, animal bone. Cut by wall 429 and Pit 558 (Phase II).

#### **Phase II: late twelfth to early thirteenth century**

**Pit 558**, oval with steep sides and undulating base (c.6m L × c.4m W × 2m+ D est.). Lower 0.8m consisted of alternating bands of redeposited degraded lime-



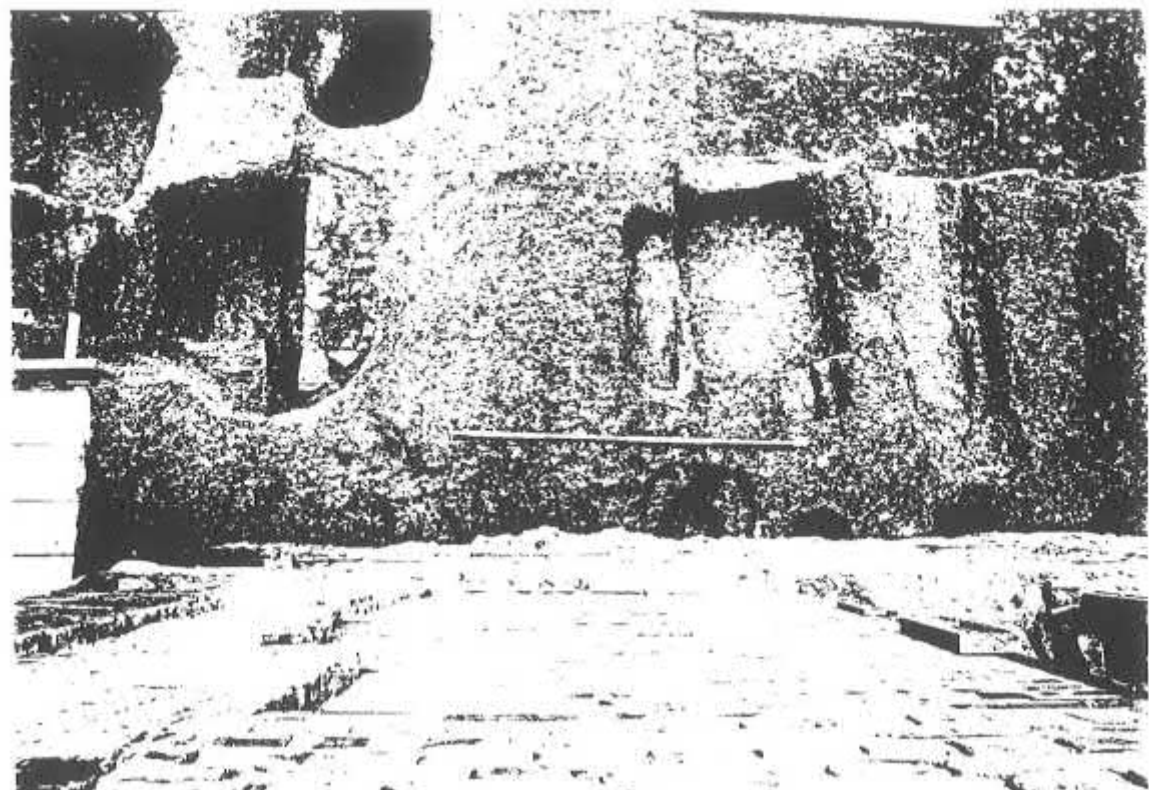


Fig. 8: General view of excavated medieval features, NW part of site.

**Pit 856**, sub-square with a flat base (0.9m L × 0.8m W × 1.3m D, original est. at 2.5m+ D), filled by reddish brown, humus-rich, peat-like soil with a sandy component. Contained 31 med sherds, tile and animal bone. Recut as 913, leaving 0.3m of primary original fill. Cut Pits 873 and 889 (Phase I) and cut by Well 820. (section fig 10a).

**Pit 862**, sub-rectangular with near-vertical sides and flat base (1.3m L × 1.1m W × 2m D, original est. at 3.5m D). Filled by two deposits; primary humus-rich, clayey silt deposit (0.45m D) containing tile, animal bone and a near-complete medieval cooking vessel (12th cent.) at base of the pit; upper homogenous humus-rich deposit (1.7m+ D). Recut as 914, leaving 0.5m of primary original fill. Cut Pit 889 (Phase I). (section fig 10b).

**Pit 873**, sub-rounded with steep sides and uneven base (1.5m Diam × 1.7m D). Three fills: primary poorly-differentiated, homogenous silty clay with a distinctive green hue (0.5m D), containing animal bone; discontinuous bands of silts and charcoal/burnt clay flecks; upper dump of rubble soil (1m D),

containing 2 med sherds. Truncated by Pits 856 and 864 (Phase II), and by Pit 653 (Phase III).

**Pit 875**, sub-square with near-vertical sides and flat base (2m+ W × 1.2m D). Contained eight fills: primary silt; green-grey, firm silty clay with degraded limestone fragments; green-brown, silty clay loam with limestone fragments and charcoal flecks; charcoal-rich dump with two dressed limestone blocks, ceramic roof tile and copper-alloy strap-end (0.10m D); clay loam with dispersed limestone fragments; stony loam; silty charcoal deposit (NW side only); upper clay loam. Contained 41 med sherds, residual late Saxon sherds, animal bone. Cut Ditch 793 and cut by post-med/modern walls 429 and 494.

**Pit 889**, sub-rounded with steep sides and rounded base (1.6m L × 1.4m D × 0.9m D, original est. 2.3m D). Three fills: primary dark, humus-rich clayey silt with a distinctive greenish-brown tinge (0.4m D), containing 20 med sherds, residual IA sherds, flints, animal bone. Upper fills indicate backfilling in at least two stages, with initially coarser and then finer sub-angular limestone fragments. Contained 21

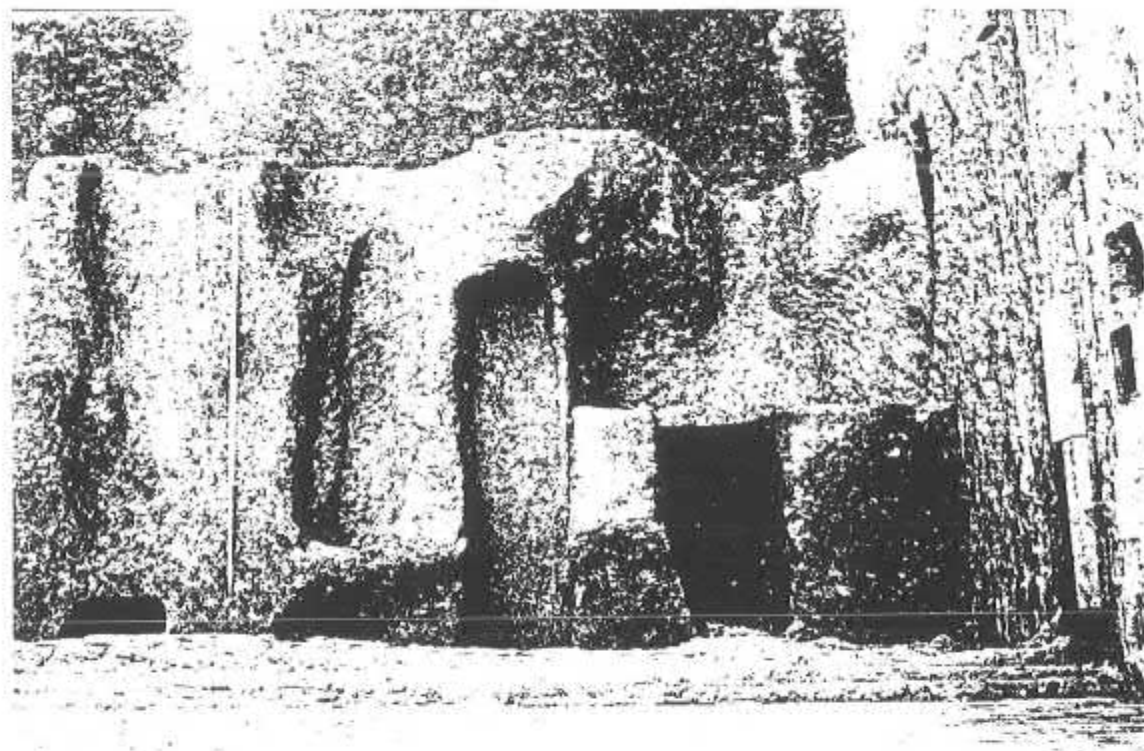


Fig. 9: General view of excavated medieval features, NE part of site.

med sherds. Cut by Pits 856 and 862 (Phase II).

**Recut 914**, sub-rounded, cylindrical (1.1m Diam  $\times$  1.45m D), containing two fills: primary charcoal-rich dump along base and S side; humus-rich silty clay with thin discontinuous bands of degraded limestone dipping down from the S. Contained almost 100 med sherds (twelfth to thirteenth-century), tile and animal bone. Recut of Pit 862 (Phase II). Connected to Channel 915.

**Channel 915**, linear, 'U'-shaped profile (0.15–0.5m W  $\times$  0.2m D), with incline down to NE. Linked Pit 862 with recut pit 810. Filled by humus-rich silty clay.

**Well 820**, sub-circular (1.93m Diam  $\times$  4.5m+ D), revetted with closely packed limestone slabs (0.4m across), some use of tile filler. Bonding agent alternated at regular 0.3m intervals down the shaft from an orange clay to a degraded clayey limestone. Contained 33  $\times$  twelfth to thirteenth-century sherds, 8 fragments of carved limestone and a sandstone cresset lamp. Backfill of construction shaft, between stone lining and cut, included sub-angular limestone fragments and tile, early med sherds and intrusive eighteenth-century pottery and clay pipe

fragments. Central circular shaft (0.85m diam). Upper 2m of shaft void, (not excavated – depth established by auger). Cut Pits 558 and 856 (Phase II).

Upper part of well partially dismantled and rebuilt in brick to form a vaulted roof, later incorporated into a relieving arch of Wall 487. (fig 11)

### Phase III: thirteenth to fourteenth century

**Pit 887**, oval with rounded base (3.2m L  $\times$  1.6m+ W  $\times$  0.3m D, orig. est. 1.5m D), fill an homogenous, humus-rich silty clay. Contained 4 med sherds and animal bone. Truncated Pit 558 (Phase II).

**Pit 895 and Re-cut 810**, sub-rectangular with steep sides and flat base (1m L  $\times$  0.6m W  $\times$  1.05m D, orig. est. 3m D). Five fills: primary silty degraded limestone (0.4m D) with large limestone fragments, a possible IA sherd and some animal bone; discontinuous charcoal band and a clayey soil (0.6m D), 1  $\times$  eleventh to twelfth-century sherd and animal bone, along SW side only; oxidised, orange-mottled silty clay (0.15m D); non-oxidised silty clay (0.4m+ D), with 1  $\times$  med sherd. Recut as **810**, leaving 0.5m of

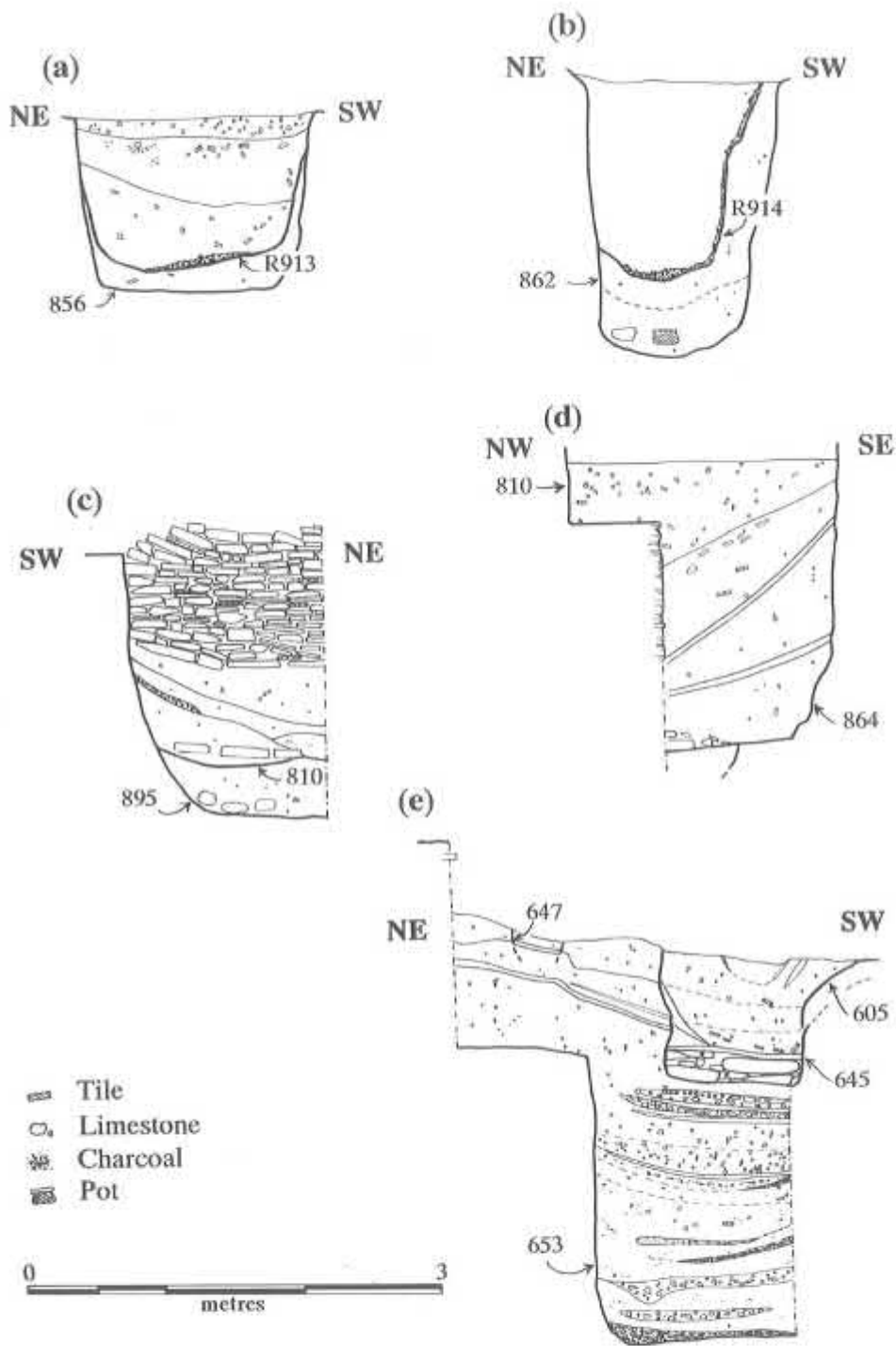
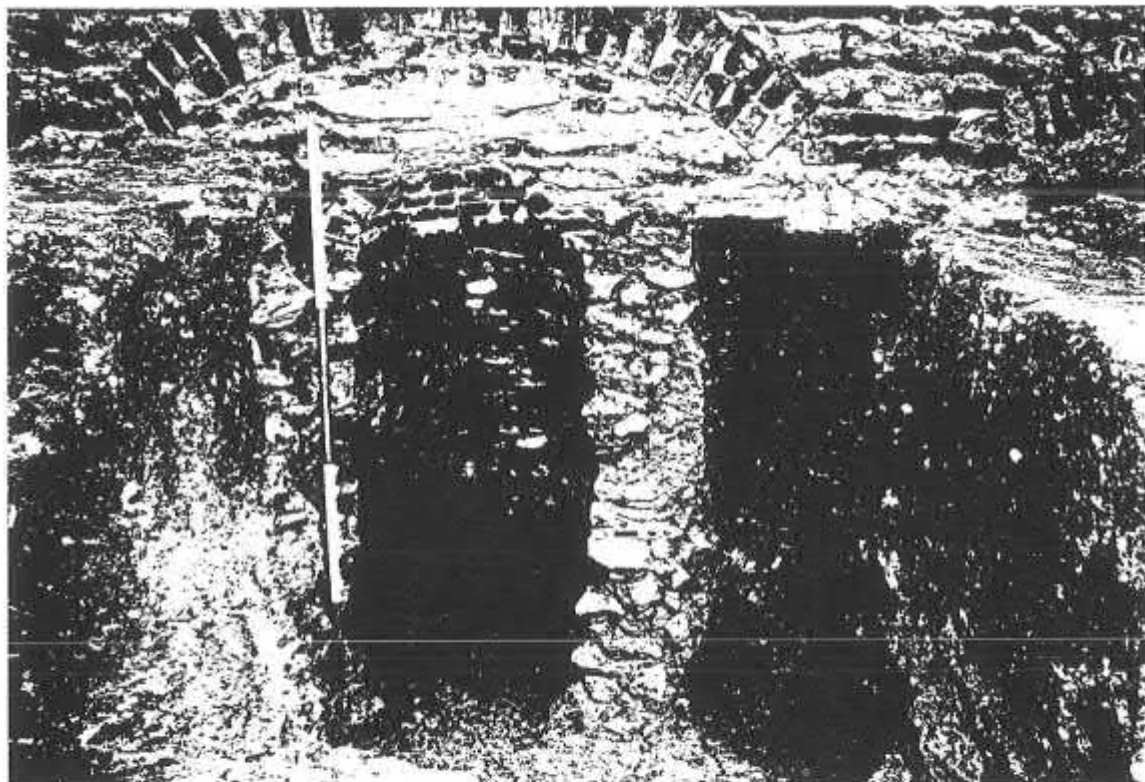


Fig. 10: Selected medieval pit sections (R= recut).



**Fig. 11:** Stone-lined medieval well 820; eighteenth-century relieving arch of Baker Room above.

primary original fill. Truncated Pit 786 (Phase I) and cut by Pit 864 (Phase IV). (fig 12; section fig 10c)

**Recut 913** (recut of Phase II Pit 856), sub-rounded, cylindrical (1.6m L × 1.55m W × 1.3m+ D, orig. est. 2.5m D). Two fills: charcoal-rich dump; dark brown, humus-rich clay loam containing 131 med sherds (incl. Brill), tile and animal bone. Pottery from the primary fill of the recut joined with sherds from the primary fill of the original pit.

**Well 865**, circular with vertical sides and a flat base (1.15m Diam × orig. est. 3.5m D), filled by damp, humus-rich, gritty silty clay. Contained 33 med sherds (Brill, thirteenth or fourteenth-century), animal bone, tile, whetstone fragment.

#### Phase IV: fourteenth century

**Pit 653**, sub-rounded with steep sides and rounded base, (2.1m L × 1.9m W × orig. est. 2m+ D). Seven fills: primary silty charcoal deposit (0.1m D); four alternating bands (0.4m D) of silty ash (with degraded greenish clayey limestone) and redeposited limestone fragments, containing 30 med sherds (incl.

Brill), tile and animal bone; ash, silt and degraded green-brown clayey limestone, interspersed with three charcoal or ashy lenses (0.9m D), containing almost 300 med sherds (13th/14th cent.), 4 residual IA/Saxon sherds, tile, animal bone and oyster shell; thin yellow clayey band; two, gritty loamy fills, containing 18 med sherds, animal bone and tile. Truncated Pit 873; recut as 667. (section fig 10e).

**Recut 667** (recut of Pit 653); circular, cylindrical (1.45m L × 1.25m W × 1.05m D). Two fills: primary ash- and charcoal-rich clayey silt with degraded greenish clayey limestone; upper clayey silt with no burnt deposits. Contained over 20 med sherds (13th/14th cent.), tile, animal bone and oyster shell.

**Pit 864**, sub-rectangular with near-vertical sides and flat base (1.6m L × 1.4m W × 2.6m D). Base lined with limestone slabs along NW side, where the pit cut the fills of adjacent Pit 895. An inclined, dry-stone revetment (0.9m D) consisting of limestone blocks and tile inserts was built against the exposed section of Pit 895. Contained 27 med sherds (thirteenth to fourteenth-century, incl. Brill), animal bone and oyster shell.





Fig. 12: Pits 810 and 864, showing stone revetment.

Overlying the limestone slabs in the base of the pit were four fills: humus-rich clay (0.5m D) with 3 med sherds and animal bone; thin band of charcoal; loamy clay (0.5m D) with 5 med sherds, tile and animal bone; clay loam with 24 med sherds, 4 residual IA/Saxon sherds, tile and animal bone. A narrow channel (915) linked Pit 864 with 914 (re-cut of Pit 862). (fig 12; section fig 10d)

## DISCUSSION

The pits are thought to have been within the back plots of buildings along Church Street. Their dates (twelfth to fourteenth century) broadly accorded with those at George Street, where there were three phases of pits spanning the twelfth to late fourteenth centuries (Allen and Dalwood 1983, 8–11).

### Phase I (twelfth century)

Ditch 793 formed a major land division, perhaps

a property boundary, running almost exactly at right-angles (230°) to Church Street (323°). The absence of any evidence for either silting or scouring suggests a limited period of use before it was backfilled. This may imply a change in land ownership and/or use in the late twelfth century.

Only one pit (852, a probable cess pit) was tentatively assigned to this phase, on the basis of a single twelfth century sherd. The limited number of pits suggests that refuse accumulated in middens during the twelfth century.

### Phase II (Late twelfth or early thirteenth century)

This diverse group of rounded, oval and sub-rectangular pits varie from 0.9m-6m across, and from 0.5m-4m deep.

Five deep pits (856, 862, 873, 889, 914) con-

tained cess in their lower fills but had been later deliberately backfilled with a less organic-rich degraded clayey limestone.

Three shallower pits (771, 786 and 875), without cess, contained loamy deposits with a greater level of secondary refuse than the others. One (771) contained an articulated horse skull with the top-most vertebra still attached, suggesting that it had been decapitated and deliberately buried.

One unusually large pit (558) appeared to have been a quarry pit rather than a cess or rubbish pit; over 70% of its estimated original volume, 35m<sup>3</sup>, penetrated the bedrock and would have produced good-quality limestone. Two features, originally interpreted as pits (820 and 865), were in fact wells and are discussed below.

There were more pits dating to Phase II than other phases. The Phase II pits together contained three hundred and ninety sherds, with a higher average sherd weight (25g) than any other phase. A greater degree of primary refuse disposal was also reflected by the presence of a near-complete cooking vessel in Pit 862.

Ditch 793, which divided the site, appears to have become filled in during Phase I, and had no visible successor, suggesting that the site lay within a single tenement for the rest of the medieval period.

### **Phase III (thirteenth to fourteenth century)**

This group of rounded and sub-rectangular pits varied from 0.8m to 3.2m across, and from 1.5 to 3.5m deep with no apparent differentiation in function; all contained cess.

Although there were 50% fewer pits dug during this phase, there was a marked increase in the quantity of domestic waste disposed within them.

### **Phase IV (fourteenth century)**

By the fourteenth century, the excavation of new pits had almost ceased, but two Phase III pits were recut. The total volume of domestic material changed little, but the trend towards diminishing sherd size, which had begun in Phase III, contin-

ued. One cess pit (864) had a dry-stone revetment inserted along its southwest side, where it cut an earlier pit, presumably to facilitate regular emptying. (A similar, although smaller pit (259) at George Street was dated to the late thirteenth or early fourteenth century; Allen and Dalwood 1983, 11, Fig.8).

A shallow gully (915), possibly an 'overflow' channel, appeared to link the revetted cess-pit 864 to Pit 862 (or to its recut, 914), suggesting that they might have been in contemporary use. However this hypothesis was not corroborated by the dating of the pottery, which placed 862/914 in phase II.

### **Rubbish disposal and the average weight of sherds from pits**

Analysis of the average sherd weight by pit showed a bi-modal distribution, with two apparent weight ranges, 8–16g and 21–30g, possibly representing secondary and primary deposition respectively. Unfortunately, the average sherd weights for the George Street phases were not readily available for comparison.

Pits of each phase contained pottery within both weight ranges, suggesting an element of both primary and secondary disposal throughout the medieval period at the site. The low quantity of sherds for Phase I prevented any firm conclusions, but suggested secondary deposition of material possibly derived from surface middens during the twelfth century.

Primary disposal within sub-surface features was more prevalent in Phase II, whilst there was more secondary disposal in Phases III and IV, suggesting a reduction in primary below-ground deposition and perhaps a return to the accumulation of surface middens by the thirteenth/ fourteenth centuries AD. However, these conclusions must be viewed with caution, since the average sherd weights on which they are based do not take account of any bias resulting from the ratio of fine and coarse wares and their individual quality. A similar pattern was, however, recorded at George Street, where the pits of the mid to late fourteenth century contained more fragmentary and mixed pottery than the earlier cess-pits (Allen and Dalwood 1983, 11), and at the King's Head, where

there appeared to be a greater degree of secondary disposal within the later pits (Bonner *et al.* 1996, 24). It is also possible that some of the pottery within the primary fills of the cess-pits may be related to the pits' function, with some of the larger sherds having been used to attend to personal hygiene (we are indebted to M Farley for this suggestion).

By the thirteenth or fourteenth century, realisation of the relationship between rubbish and disease led to regulations to 'cleanse' towns. A late sixteenth-century manorial regulation from Aylesbury stipulated that '... none shall use Anye filthines in the streets or to Laye ther dunge or cast ther dust therin carye yt or cawse to the common dounghill . . . every man that hath a water cowrse that goweth from the kyngs hede called the kyngs hed gutter shall wekly make it clen . . . thos that make clen privies shall do yt in the night and Cary it forth of the town in to the felds wher they shall bury it in the grownde..' (Birmingham Central Library: Hampton Mss Coll 505455). The need for these regulations indicates that refuse accumulated in Aylesbury's streets and that its disposal was a problem within the town in the sixteenth century. Filth continued to be a serious problem into the nineteenth century (Gibbs 1885, 590–598).

#### **Discolouration of Limestone within the Pits**

The degraded clayey surface of the Portland limestone, the basal stratum of the site, is naturally yellow, but at the Museum site it often exhibited a brown hue. This could be explained by a process of oxidation following surface exposure, in which case its presence within certain fills may indicate that it was redeposited from the ground surface.

An intense green or greenish-brown colour was observed upon numerous limestone fragments in the pits. This 'greening' effect may be due to a high urine content within cess pits, or could be the result of algal growth upon the organic contents (Russell 1957, 80). However, it is questionable whether the chlorophyll would have remained stable for any length of time. Alternatively, the green colour may be the result of the formation of reduced iron compounds (ferrous carbonate, siderite, vivianite or iron sulphide) in the presence of calcium, in the poorly-drained confines of the pits (*pers.comm.* Dr Roseff).

#### **Wells**

The Kimmeridge clay which underlies the Portland limestone ensures a good water supply at shallow depths of 3m to 6m (Temple 1929, 33). Three pits of this depth (820, 862 and 865) probably held water and could have been wells. Their narrow width (0.85m–1.30m) and in one case (820) the presence of a stone lining (fig 11), supports this interpretation. Various constraints allowed only a limited investigation of the wells by auger.

#### **Palaeo-environmental studies**

Samples from three medieval pits were selected for analysis: Pit 856 (Phase II), its recut 913 (Phase III) and Pit 653 (Phase IV). The results, which represent the first analysis of macroscopic plant remains from Aylesbury, are largely unremarkable, although the more extensive weed species present in phase IV may indicate agricultural expansion onto heavier and marshy soils, along with the encouragement of legumes to provide animal feed and improve soil fertility (see specialist report, below).

#### **INHUMATION CEMETERY (Figs 13 – 15)**

During the thirteenth century (and possibly the fourteenth), the northeastern side of the main excavation area was in use as an inhumation cemetery. Two phases of burial were identified: an early phase consisting of fourteen graves (containing eleven burials) in orderly rows orientated northeast to southwest, and a late phase consisting of four graves orientated northwest to southeast (ie. at right-angles to the earlier burials). In some cases the relationship between early and late phases could be demonstrated by stratigraphy, and it has been assumed that the two burial orientations were not in simultaneous use. The dating of the burials is discussed further on. Several other inhumations were recorded during the course of the watching brief from various parts of the museum premises.

All the burials were extended supine inhumations. All the graves were sub-rectangular with near vertical sides and a flat or sloping base except where indicated otherwise in the following catalogue, and were backfilled with reworked "dark soil"

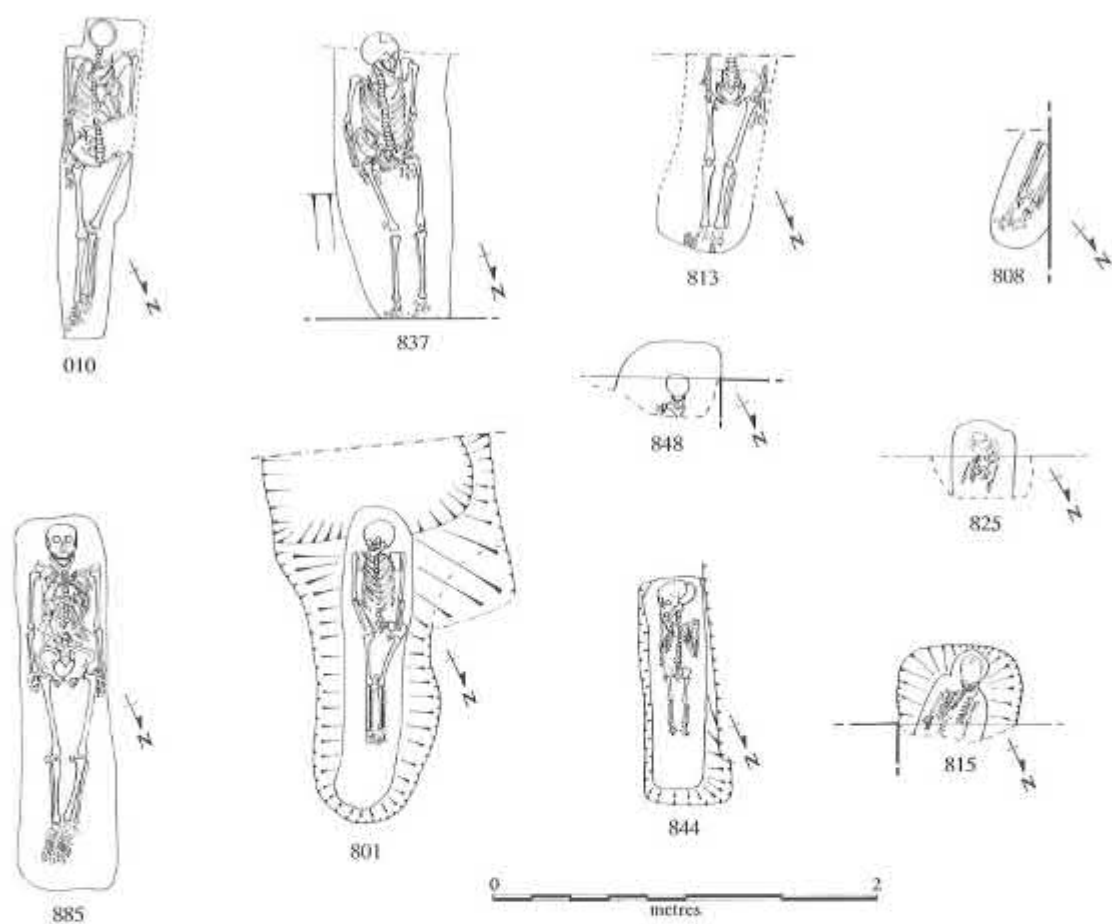
## Early Phase

- 813**, adult female, incomplete, orientated 245°, arms along sides, R hand on pelvis, feet together. Grave (0.45m W) had sloping base. Contained 21 med sherds, tile and animal bone. Cut Pit 875; cut by the former muniment room wall (489).
- 837**, adult male, orientated 225° with cranium to L side, arms along sides, L hand on pelvis, feet together. Grave (0.56m W) had sloping base. Contained 41 med sherds, 3 residual IA sherds, tile, animal bone and an unidentified iron object. Cut Pit 875; cut by burials 772 and 802 (Late Phase) and Wall 494.
- 885**, adult male, orientated 228°, arms along sides, feet together, lower legs slightly to E of the main skeletal axis. Post-depositional disturbance of the torso. Grave (1.95m L × 0.45m W) had flat base; contained 20 med sherds, tile, animal bone, oyster shell, flint, burnt flint, lead slag, 23 iron nails around the skeletons, of which seven were upright (0.4–0.55m apart), and formed two parallel rows (0.35m apart), along either side of the grave; a further six pointed down and ten lay sideways, not apparently *in-situ*, but six nails formed a straight line across the grave, approximately one third of the distance along it. Cut Pit 875 and truncated by Burials 772 and 802 (Late Phase).
- 801**, juvenile, orientated 230° with the cranium tilted forward and slightly to the R (against a sloping ledge), arms along sides, both hands on pelvis and feet together. Elongated, round-ended grave (1.7m L × 0.6m W) with a concentric recessed base (0.35m W × 0.14m D). Ledge (0.16m W) on all sides. Contained 54 med sherds, 1 indeterminate IA/Saxon sherd, oyster shell, burnt flint, animal bone, smelting slag, frags. iron knife and glass. Cut Pit 771.
- 844**, juvenile, orientated 230°, arms along sides, hands on pelvis, and cranium turned to R; skull crushed and distorted. Grave (1.2m L × 0.44m W) with a sloping recessed base (0.3m W × 0.15m D). Ledge (0.07m W) on all but the SW side. Contained 20 med sherds, animal bone and flint. Cut by Pit 675.
- 815**, juvenile, incomplete, orientated 240°, arms along sides, cranium tilted forward. Grave (0.65m W), with recessed body-shaped base (0.33m wide and 0.14m deep), and an inward-sloping ledge (0.12m D). Contained 4 med sherds, 6 residual IA sherds, animal bone, flint, 3 iron nails, 1 × unidentified copper-alloy object and 1 × quernstone fragment. Burial beneath relieving arch of Wall 494. Cut IA Gully 709.
- 825**, infant, orientated 250°, arms along sides, cranium to L. Skull crushed and distorted. Grave (0.33m W × 0.31m D). Contained 2 med sherds, 4 residual IA sherds, 1 residual Saxon sherd, tile, animal bone and an unidentified lead object. Burial beneath relieving arch of Wall 494.
- 846**, infant, orientated 246°, arms along sides, cranium tilted forward. Grave (0.95m L × 0.5m W). Contained 4 residual IA sherds and animal bone. Burial beneath relieving arch of Wall 494.
- 849**, juvenile, incomplete, orientated 240°, arms along sides, cranium facing upwards. Grave (0.16m W × 0.28m D) with recessed base (0.13m D) and inward-sloping ledge. Contained 1 IA sherd, Truncated by Burials 772 and 802 (Late Phase) and cut by Wall 494.
- 808**, juvenile, incomplete, orientated 257°, feet together. Poorly defined grave. Contained 2 med sherds, animal bone and an Fe buckle frame. Cut Ditch 793 and Pit 875. Burial truncated above knees by the former muniment room wall (429) and Wall 489.
- 905**, adult, incomplete, orientated 229°. Poorly defined grave. Burial beneath relieving arch of Wall 494. Information recovered by watching brief.
- Grave-shaped pit 842** contained no skeletal remains. Sub-rectangular pit, orientated 227°, sloping ledge at NE end and flat base (2m+ L × 0.70m W). Contained 2 med sherds, 10 IA sherds, animal bone, tile, oyster shell, flint, burnt flint, brick, and an iron nail. Cut IA Gully 829.
- Grave-shaped pit 797** contained no skeletal remains. Rectangular pit with vertical sides (0.44m W × 0.43m D), recessed base, ledges (0.16m W) along NE and SW sides, orientated 224°. Contained 1 med sherd, 8 IA sherds, animal bone and flint. Cut by Pit 675 (which contained disarticulated human bone).
- Grave-shaped pit 776** contained no skeletal remains. Rectangular pit with vertical sides (0.23m W × 0.12m D), orientated 246°. Contained 3 IA sherds and animal bone. Cut IA Pit 778 and cut by Wall 489.

## Late Phase

- 772**, adult male, orientated 318°, upper torso twisted to R, cranium tilted forward, R arm on thigh, L arm across waist. Adjacent to Burial 802, possibly within same grave. Poorly defined sub-rectangular grave with a sloping base (2m L × 0.8m W). Contained 12 med sherds and animal bone.

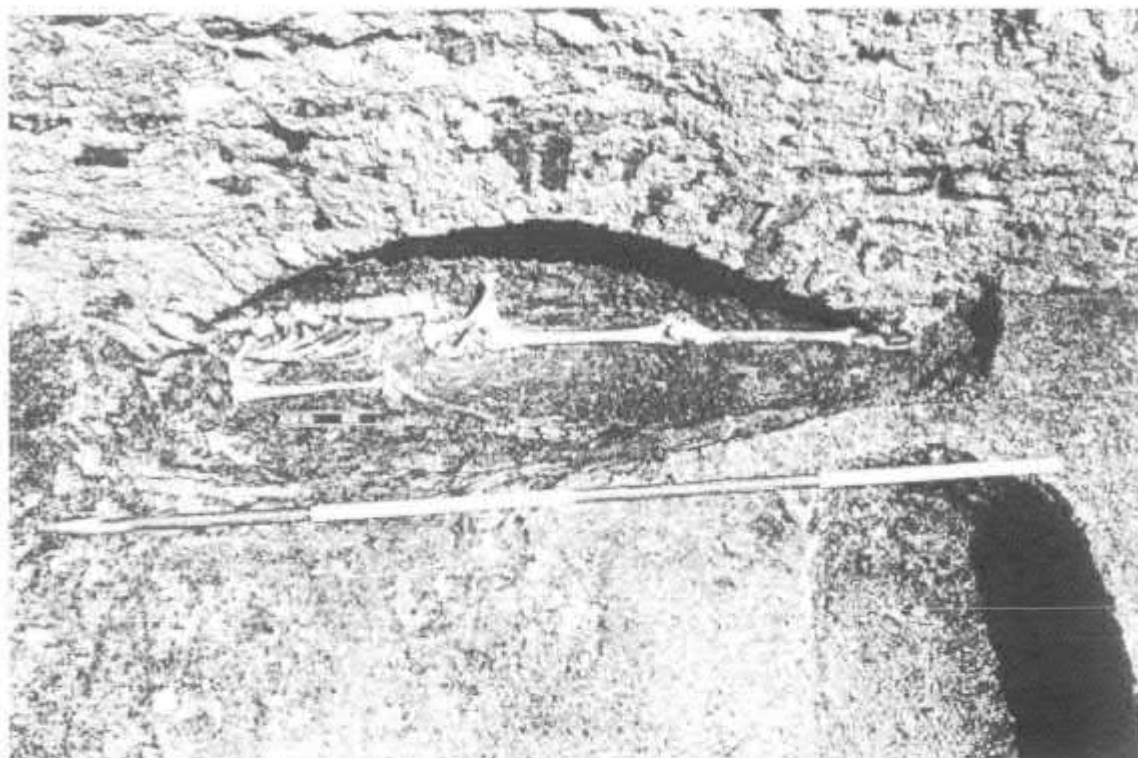
## Early Phase



## Late Phase



Fig. 13: Detailed plans of burials.



**Fig. 14:** Late-phase inhumation 802 below relieving arch of eighteenth-century building; early-phase grave 801 bottom right.

**802**, adult male, orientated 321°, R arm extended outwards beneath adjacent Burial 772, possibly within same grave (see above). No finds. Cranium truncated by relieving arch of Wall 494. (fig 14).

**904**, adult male, incomplete, orientated 319°. Adjacent to Burial 802. Poorly defined sub-rectangular grave (2m L × 0.45m W). No finds. Cranium truncated by relieving arch of Wall 494.

**761**, adult female, incomplete, orientated 139°, cranium tilted forward and slightly to L. Possible 'pillow' consisting of a limestone lump and flint nodule on either side of the cranium. Poorly defined grave. Contained 5 med sherds, animal bone, an iron nail and a buckle plate. Cut Ditch 875. Truncated below upper torso by Walls 489 and 494.

#### **Burials recorded during the watching brief (Fig 15)**

Parts of at least sixteen individuals were noted in other areas of the museum during the watching brief, along with numerous disarticulated bones. Of these burials only one (010, a plank burial) was

substantially complete. In all other instances the burials were recorded in contractors' trenches which had disturbed only part of the burials. The archaeological value of these remains is therefore limited.

#### Lift shaft area

**003** adult male skull, complete with jaw and uppermost two cervical vertebrae, recovered from post-medieval layers in lift-shaft area, where it was evidently redeposited, the apparent decapitation having taken place after the original burial. A major skull injury appeared to have healed completely (see Dr Waldron's report below).

**010** adult female, recorded amongst medieval layers in lift-shaft area, the upper part having been dug away by the contractors. Orientation northeast-southwest; the burial therefore seems to belong to the earlier phase of inhumations. It was difficult to relate this burial to the stratigraphy recorded in the nearby section. The inhumation had been covered with a single oak plank, traces of which were still

visible. The plank was distorted and compressed to a thickness of c2mm, and had become moulded to the contours of the underlying skeletal remains and the shape of the grave cut. There was a suggestion that the grave cut had incorporated a head-niche, although the skull and much of the cut at that end of the grave had been destroyed.

A few other fragments of human bone were found within medieval and post-medieval layers in the lift-shaft area, all apparently redeposited.

- 151 The lower part of a burial was discovered in the more northerly of two portal-frame pits excavated by the contractors to the southeast of the lift-shaft area, in what is now the temporary exhibition gallery. The burial had been truncated by one of the foundation trenches of the grammar school buildings.

#### Coach House Area.

Several burials and partial burials were recorded during alterations to the coach house (now the Roald Dahl Gallery). Parts of four burials (189, 191, 195, 198), aligned approximately east-west, were recorded during insertion of a portal frame to replace the former partition wall between the two ground-floor rooms of the coach house. The skull of a fifth (280) was subsequently discovered nearby, along with several other fragments (281, 282, 283) from an indeterminate number of inhumations which were recovered from beneath the southeastern retaining wall of the coach house and in an additional foundation trench excavated for the rear wall of the new gallery. The skull and clavicle of a further individual (279) were subsequently noted close to the rear door.

Outside and to northeast of the coach house parts of another individual (278) were found, orientated east-west.

#### Courtyard.

Parts of seven other burials (271 – 277) were recorded during drain-laying across the courtyard. All these were fragmentary, and/or lay for the most part beyond the contractors' trench. One (275) appeared to lie approximately east-west; it was not possible to determine the precise orientation of the others.

With the restricted resources available for post-excavation work it was decided to restrict palaeopathological analysis to the burials which had been recovered in the archaeologically controlled circumstance of the main excavation. (See Dr Waldron's report, below). Palaeopathological reports were also undertaken in respect of the plank burial 010 and the skull (003) from the lift-shaft

area; the former was substantially complete whilst the latter could be seen to have evidence for a major injury. Although these remains were discovered at the start of the watching brief, before the full scope of disturbances which would warrant archaeological monitoring became clear, their intrinsic interest was clearly greater than that of the burials recorded subsequently.

#### **The burials: discussion**

The existence of inhumation burials beneath the Museum buildings first came to light during construction work for the former muniment room in 1933/4. They were thought at the time to have been reburied in the yard when the Grammar School building was erected in 1718.

The Early Phase contained thirteen graves in orderly rows. Eleven contained skeletal remains. The burials were orientated between 225° and 257°, approximately northeast to southwest, with the head at the southwest. On average, they were interred thirty centimetres below those of the Late-Phase burials. Burial 808 was assigned to the Early Phase on the basis of its orientation, despite being interred within the depth range of the Late Phase. Burial 010 is also thought to belong to this phase.

The Late Phase was represented by four individuals. This phase was also formally organised, with burials orientated between 318° and 321°, approximately northwest to southeast (ie. at right-angles to the Early-Phase burials).

With the exception of the plank burial 010, it was not possible to allocate the other burials recorded during the watching brief to either phase. Where orientation could be seen, however, it appeared to be east-west, rather than either of the idiosyncratic alignments noted in the main excavation area.

#### *Grave shape, body position and burial rite.*

Body position (extended supine with feet together and hands resting either over or beside the pelvis) gave little clue as to whether the corpses were in coffins or shrouds. Most of the graves were vertical-sided, each a little larger than the skeletons they contained. No wood stains were recorded, but twenty-three iron nails with Burial 885 suggested that the body had been interred in a wooden coffin. A three-dimensional plot of the nails indicated that

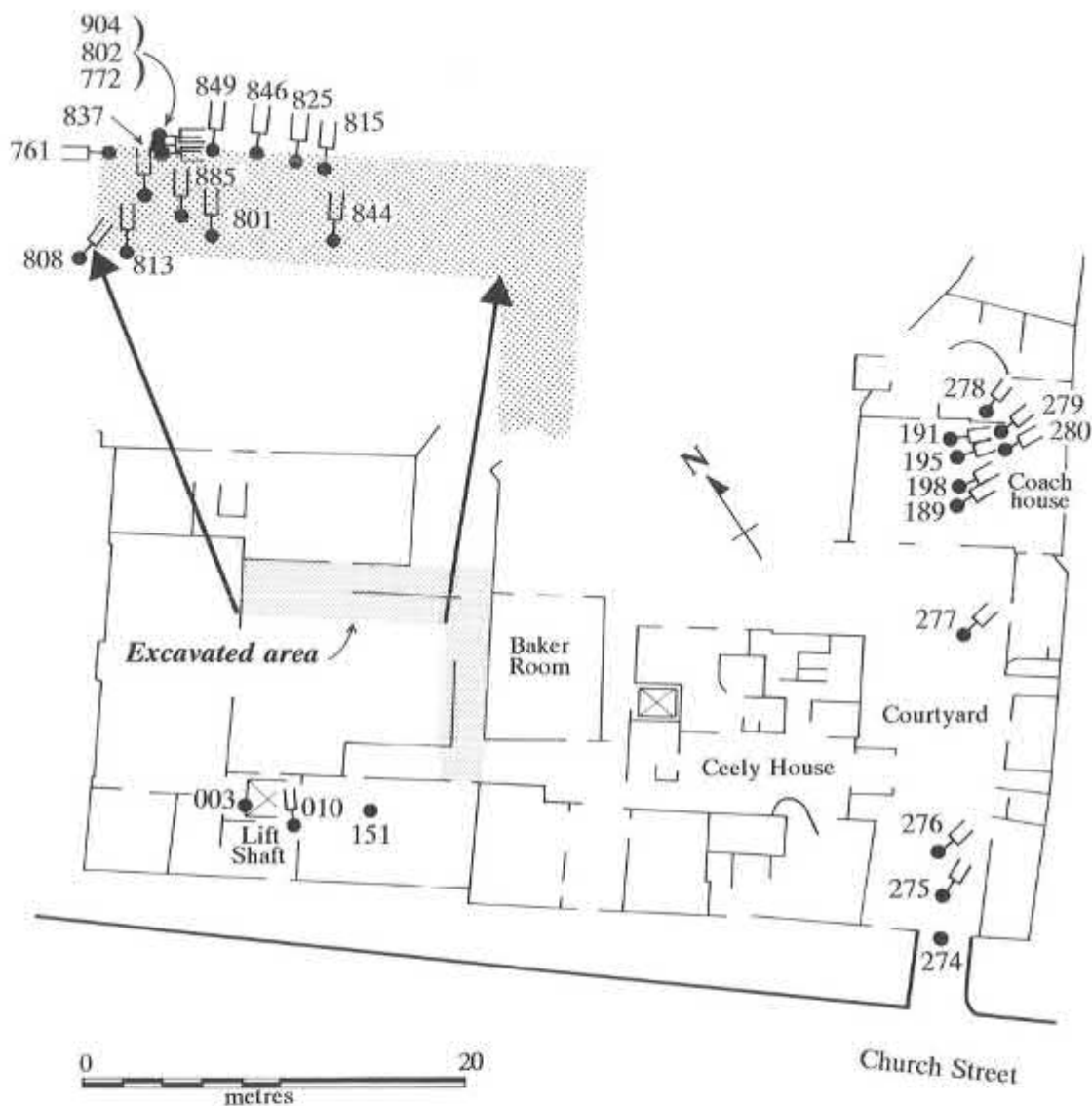


Fig. 15: Schematic plan of burials, showing orientations.

the base of the coffin had been nailed to the sides at approximately half metre intervals along its length. At least one cluster of nails may indicate the position of a cross-strut, probably to strengthen the coffin. Surprisingly, the configuration of nails suggested that the dimensions of the coffin were 1.6m by 0.35m, which was at odds with the size of the skeleton (1.73m by 0.40m). More detailed reconstruction of the coffin was not possible due to post-depositional disturbance, possibly by a burrowing

rodent.

Four graves had a flat or sloping ledge above a recessed base, perhaps to support a wooden plank. The stain of a probable plank was recorded over burial 010. Planks may have covered some of the other graves, such as 815 with a head-niche and body-shaped recessed base, but there was no evidence. Burial beneath planks appears to be relatively uncommon (Daniell 1997), but there are



parallels from the St Benet's, Swinegate cemetery at York (noted in Lilley *et al* 1994, 383) where there were four burials with planks over the body and one instance where the body had been placed on a plank, and another example of a body on a plank from Colchester (Crummy, Crummy and Crossan 1993). Seventeen out of the fifty burials attributed to the third phase of the cemetery of St Lawrence Jewry, London, which are dated to the mid-twelfth century, were covered by one or more boards (Bateman 1997). Some five burials at Sandwell Priory, dating to the mid thirteenth to the early sixteenth centuries, had been placed either on or beneath planks, but such evidence was only recovered where there had been waterlogging of deposits (Hodder 1991, p100). At Jewbury, York, there were several graves where traces of wood from either the base, side or lid were recorded (Lilley *et al* 1994, 345). In our instance, however, the plank appeared to have been intact except where damaged by the contractors' activities, and it is thought unlikely that the body had originally been buried in a complete coffin. The apparent scarcity of evidence for plank burials may therefore reflect differential preservation rather than an especially unusual rite.

The Late-Phase graves were shallow (the levels of the base of the graves being on average thirty centimetres above those of the Early Phase) and poorly-defined, with no instance of a recessed base. Two adjacent Late-Phase burials (772 and 802) may have been a double interment. One body (761), with a possible stone 'pillow', had been interred with its head at the southeast end (ie. in the opposite direction to others in this phase).

Reversed burials have been recorded from other medieval cemeteries, but form a very small minority of burials. The practice of burying a priest with reversed orientation (so as to face his flock at judgement day) is not recorded prior to the post-medieval period; medieval priests' graves, where they are so distinguished, contain a lead chalice and/or paten. It is possible that some instances of reverse burial may be due solely to carelessness (Magilton and Lee 1989; Daniell 1997).

In all but three cases, the cranium was facing upwards or was tilted forwards by the sloped end of the grave. This may imply that the corpses were

tightly wrapped in shrouds, presumably sewn as no shroud pins were recovered. In general, however, heed should be paid to other excavators who have noted the difficulty of equating use of shroud or coffin with a particular skeletal posture (eg Dawes and Magilton 1980).

Three grave-shaped pits without skeletal remains accorded with the orientations and depths of the Early Phase cemetery. In two cases (776 and 797) this absence was accounted for by later post-medieval truncation, whilst one 'grave' (842) appeared to have been re-dug in the medieval period.

A small quantity of smithing slag from some of the grave fills suggests a spatial (if not chronological) proximity to some form of metallurgical activity.

#### *Palaeopathology: summary*

A full pathological examination was made of the skeletons recovered during the main excavation, as well as two individuals recovered during the watching brief. The full report appears below. Evidence was found of osteoarthritis, degenerative disc disease, osteophytosis, spina bifida occulta and dental disease, all common traits in medieval populations. There was one unusually short adult male. In addition, a head wound to another individual showed signs of having received medical treatment, there being no evidence of infection. Otherwise the Museum burials were unremarkable. The small sample size prevented quantitative analysis for demographic reconstruction.

#### *Dating*

Stratigraphically, the Early-Phase burials post-date Pit 875 (Phase II), thereby providing a *terminus post quem* in the late twelfth or early thirteenth century for interment in the cemetery. The Late-Phase cemetery pre-dates Surface 640, dated to the fifteenth century.

The pottery and the few other stray finds within the grave fills were of little help in providing accurate dating evidence, but the main period of interment seems to be the thirteenth (and possibly fourteenth) century (pottery phase III). The cemetery thus appears to have been too early to have

been attached to the 'Brother House' (Ceely House) of the 'Fraternity of St Mary', a religious guild, not founded until 1450 (Trench and Fenley 1991, 15).

#### *Relationship of the cemetery to other features.*

The proximity of the cemetery to the south side of the parish church of St Mary suggests that the burials were part of an associated cemetery. However, the question of the orientations displayed by the burials raises the issue of the nature of the relationship of the museum burials to those closer towards the church.

The Early and Late-Phase burials were orientated on average  $320^\circ$  and  $241^\circ$  respectively. The orientation of Church Street is  $323^\circ$ , and this suggests that this road, and boundaries at right-angles to it, and not the church building, formed the reference point for the Early and Late-Phase cemetery layout. This accords with an early date for Church Street, the alignment of which, together with Temple Street and Silver Street, has already been suggested as an axial feature of the Late-Saxon town (Farley 1976, 228-229).

The close correlation in alignment between the burials and Church Street ( $323^\circ$ ) indicates that this part of the cemetery was not in sight of the church building (c.267°), but obscured by some feature such as a wall. A similar, but perhaps less distinct, occurrence was observed at St-Helen-on-the-Walls, Aldwark, York, where some of those burials which lay further from the church were parallel with the nearest feature defining a straight line (Dawes and Magilton 1980).

Burials were not found over the southeast side of the site, but it is thought unlikely that the cemetery had been violated by the medieval pits. At George Street, where only 18 of an estimated one hundred individuals survived, fragments of human bone were found in over 50% of 'fill' contexts (Allen and Dalwood 1983, 7-8). By contrast however, under 4% of fills from the Museum site contained human bone, indicating that medieval pit digging and interment were (in spatial terms) mutually exclusive at the site. Whatever boundary differentiated the cemetery from the main area of pits was archaeologically invisible.

The watching brief located twelve relatively complete inhumations and numerous fragments of a further indeterminate number. The 'plank burial', orientated  $223^\circ$  (approximately northeast to southwest), falls within the orientation range of the Early-Phase cemetery ( $225^\circ$ - $257^\circ$ ), and also had a head-niche, a trait not recognised in the Late Phase. None of the burials to the southeast of the excavation site could confidently be assigned to the Early Phase of interment, suggesting a possibly restricted zone of interment during that phase.

The remaining burials located by the watching brief, orientated  $270^\circ$ - $302^\circ$  (approximately east to west), could not by their orientation be confidently placed in either the Early or Late Phase. However, their shallow depth (above or upon the basal limestone) accorded more with the Late-Phase practice, suggesting that the Late-Phase cemetery was perhaps more extensive to the southeast of St Mary's church than was the Early Phase.

With the exception of the plank burial 010, which clearly was part of the earlier group, it was not possible to allocate the other burials to either phase. Where orientation could be seen, however, it appeared to be east-west, rather than either of the idiosyncratic alignments noted in the main excavation area. This implies that special conditions prevailed in the area of the excavation, so that for some reason it was difficult to align burials on a "normal" east-west orientation. In turn, this may suggest that sightlines from the area around the main excavation area, and also in the vicinity of burial 010, towards the principal cemetery area may have been obscured by buildings or other structures during the period in which this part of the site was in use as a cemetery. Evidently such special circumstances did not apply to the burials in the Coach House/ Courtyard area.

#### **The Reworking of the Saxon Dark Soil Deposit**

The dark soil was almost completely removed by intensive pit digging throughout the medieval period over the southeast side of the site, whilst over the northwest side, numerous interments were cut through it during the thirteenth century. The upper part of the dark soil (704) was heavily reworked throughout the fourteenth and fifteenth centuries, suggesting that grave markers were no

longer visible and possibly also that there had been a change in land use and ownership.

### LATER MEDIEVAL ACTIVITY

On the south side of the site the pits were overlain by a limestone surface, which was in turn overlain by a demolition layer.

**Surface 583** consisted of an area of tightly compacted, rounded and sub-angular limestone fragments (2m+ L × 2m+ W × 0.08m D), bedded upon a discontinuous, fine sandy clay containing med pottery, tile, animal bone and a flint hammerstone. (Sealed Recut 917 of Pit 558; cut by Well 507).

**Demolition 581/582**, a rubble layer of limestone slabs/blocks (up to 0.5m across) and horizontal roof tile (0.15m D), overlying Surface 583; contained over 30kg of roof tile, med. pottery and animal bone.

The compacted limestone fragments probably represent a courtyard surface, rather than an internal floor, as there was no evidence of any associated structure. The overlying rubble and tile probably derives from the collapse or demolition of a nearby building, presumably on the same plot of land and thus probably fronting Church Street.

The limestone surface had subsided by almost half a metre into the recut pit 917, the fills of which provided a *terminus post quem* in the thirteenth or fourteenth century. The overlying rubble however was covered by a soil layer containing late Brill sherds, indicating that the rubble may have been from a building which had been destroyed by the late fourteenth century, before the construction of Ceely House in the late fifteenth century (Trench and Fenley 1991, 2).

### MEDIEVAL FEATURES RECORDED DURING THE WATCHING BRIEF

**Lift-shaft area.** Excavations were undertaken here for a lift-shaft basement and engine room. A very large cut medieval feature was noted in the southwest corner of the area, which could not be properly recorded owing to the need to shutter the section. A medieval burial (010) was partially recorded, although the upper part of the burial had been dug away by the contractors.

**Baker Room.** This area was extensively excavated in order to underpin the Baker room and also to provide access to the space beneath the gallery area. Up to 3.46m of stratigraphy was recorded here, much of it being identical to the stratigraphy recorded in the main excavation area which it abutted.

A large pit c.1.5m in diameter, probably of medieval date, was recorded immediately southwest of the Baker Room: this was not excavated.

Details of other observations are held in the site archive.

### THE POST-MEDIEVAL PERIOD

#### THE FIFTEENTH TO SEVENTEENTH CENTURIES (Fig 16)

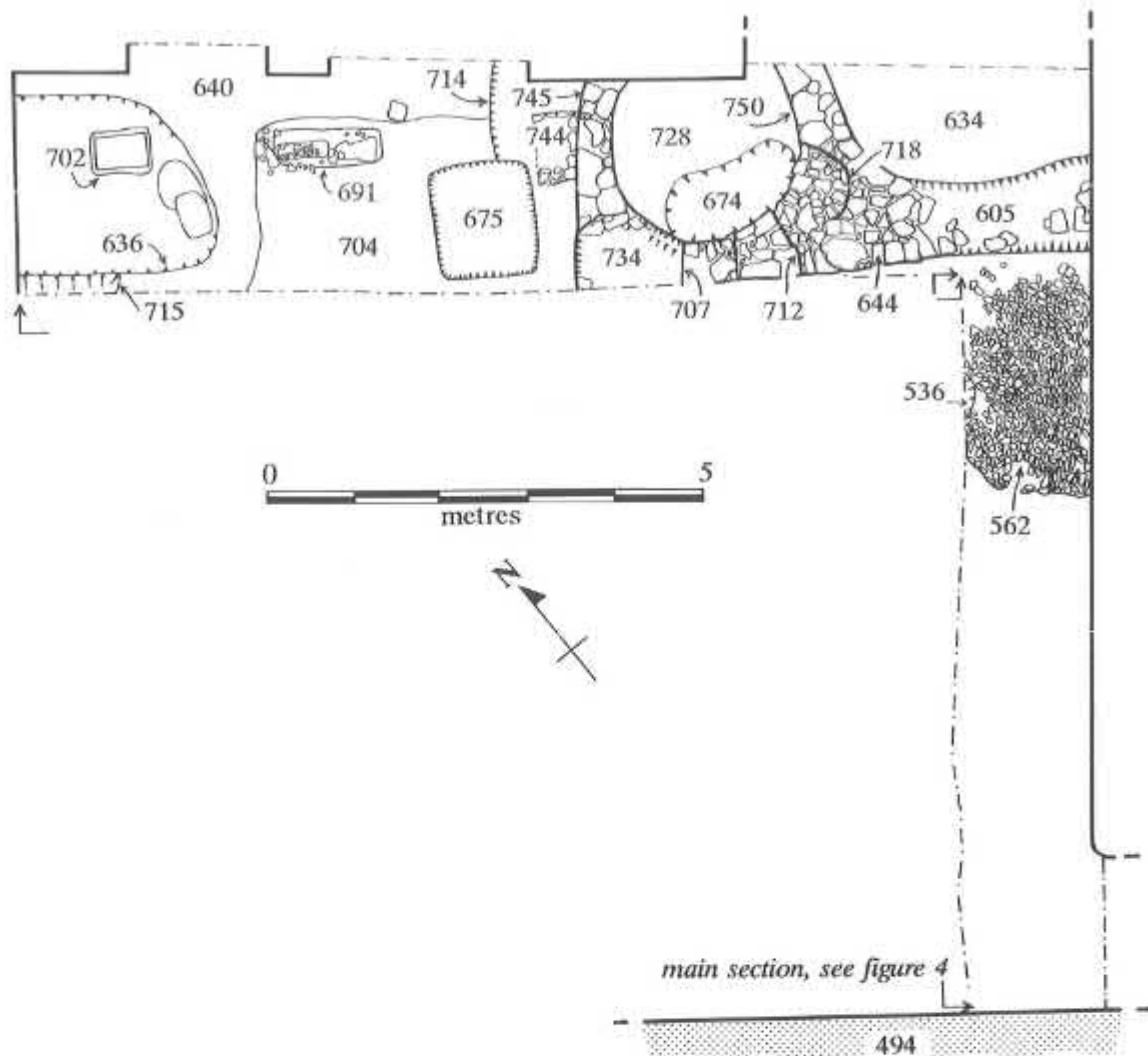
A garden soil developed over the former cemetery area, and the upper part of the dark soil deposit was reworked. A substantial stone structure with two internal circular compartments was built; possibly associated with it was an external cobbled area, a series of clay and calcareous surfaces and a cess pit. Two short sections of wall and a possible floor or yard surface may have been contemporary with the building.

**Garden Soil 625**, humus-rich silt loam (0.2m D). Contained 20 med and 374 post-med sherds, 4kg animal bone and 160 oyster, mussel and cockle shells.

**Reworked Dark Soil 704:** homogenous, dark green-black sandy clay loam with limestone grits. Contained 4 sherds dated 15th cent., 72 sherds 11th-12th cent. and 45 other med sherds, tile, animal bone and shell.

**Building 644**, rectangular (est. c.7m L × c.4.5m W), divided internally into two circular rooms, a smaller NW room (2.2m diam) and a larger SE room (3.4m diam). The smaller room showed traces of a discontinuous compacted clay surface bedded upon coarse sand overlying an earlier compacted chalk surface. Contained no finds.

The foundation trenches of the building's walls (0.5–1m W) had been dug through Garden Soil 625 and Dark Soil 704 to the underlying limestone substrate, and overlay two earlier, medieval pits (653 and 864), into which the walls had sunk. The wall faces were well constructed using large sub-angular limestone slabs (0.35–0.55m across).



**Fig. 16:** Fifteenth to seventeenth-century features.

Smaller limestone fragments and tile were used to fill the wall. A clay bonding agent was recorded for one course. Otherwise it was unbonded apart from redeposited dark soil. Contained 63 residual med sherds and one 15th cent. sherd.

The walls survived to a maximum height of 0.45m, but had been truncated, or entirely removed by at least five robber pits dated to the late 16th or early 17th cent. Also contained tile, bone, shell and fragments of lead window kame and lead sheet. Truncated by Walls 413 and 429.

**Hearth 744**, a three-sided, crudely made drystone structure (0.76m L x 0.42m W), butted against the outer

NW wall of Building 644. Base lined with a sandy clay. Exhibited evidence of internal scorching and contained a silty charcoal deposit with oyster shells.

**Cobbled Surface 562** consisted of a single course of tightly compact limestone cobbles (up to 0.15m across), bedded upon sand. Extended for 3m to the SW of Building 644, where they were retained by an arc of upright cobbles. The surface showed signs of extensive wear. Finds from between the cobbles and from an overlying thin trample soil included over 60 med sherds, animal bone, shell, iron nails and copper-alloy pins.

**Tile layer 527** consisted of numerous roof tiles (with some pottery, animal bone and shell) overlying

Cobbled Surface 562 and Clay Surface 531. The tile was overlain by a thin soil layer (526) containing 3 post-med sherds, tile, bone and shell.

**Surfaces 531 and 523** were firm, yellow clays (0.09–0.15m D), to the S side of Cobbled Surface 562. Contained 33 sherds (inc 24 residual), tile, animal bone, oyster shells and a fragment of window glass. A thin trample layer separated the clay layers. Overlain by Tile Layer 527.

**Surface 509**, a firm, green clay (0.06–0.10m D), bedded upon a discontinuous white, calcareous spread and also redeposited, crushed limestone fragments. Contained 21 sherds (inc 20 residual), tile, bone, shell, a copper alloy strap end and fragments of lead window kame and glass. Above Tile Layer 527.

**Pit 675**, square with vertical sides (1.15m W × 1.68m D). Contained 2 fills: primary thin humus-rich silty clay and a clayey sand (0.58m D); four loamy deposits each interspersed by siltier soils. Contained 48 sherds dated 16th cent. (including one Spanish tin glazed sherd), almost 170kg of roof tile (96% from an upper fill), 7 fragments of window glass (including one 'painted' example), over 4.5kg of animal bone, oyster shells, a buckle, a copper alloy knife (with traces of a wooden handle), a chape and a group of corroded unidentified iron objects. One of the upper fills was a dump of burnt bone and oyster shell.

**Pit 636**, rounded with irregular sides and base (2m+ diam × 0.16m D), filled by a soft, dark loam. Contained 29 sherds (inc 19 residual), over 8kg of roof tile, almost 2kg of animal bone, a fragment of window glass, oyster and cockle shells. Truncated Surface 640.

**Former School Building Wall 494**, the SW wall of the former courtyard (incorporated into new museum building). Mortared red bricks (200mm × 110mm × 55mm). Previous underpinning had destroyed relationships with major archaeological deposits.

**Tile Layer 417** consisted of broken roof tile (c.500kg), and building rubble. Contained 1 glazed floor tile, frags. of window glass (three 'painted') and over 200 oyster shells. Above Surface 509.

**Surface 640** consisted of compacted limestone fragments bedded on clay. Exhibited surface wear. Contained 21 sherds, tile, animal bone and shell. Associated with Walls 692 and 702. Truncated by Pits 675 and 736.

**Surface 639**, a firm green clay (0.05m D). Contained 18 sherds (inc 17 residual), tile, animal bone and shell. Above Surface 640.

**Walls? 691 and 702**, aligned NW-SE, about 2m apart. Wall 691, two large, re-used roof tiles mortared onto a large dressed limestone block (1.45m L × 0.28m W). Wall 702, a single limestone slab (0.6m L × 0.46m W). Associated with Surface 640. Truncated by Pit 636.

**Garden Soil 632**, a friable silty loam (0.2m D). Contained 102 sherds (inc 8 residual), over 7kg of bone, shell and glass. Upper part reworked (436) in the early 18th cent.

## DISCUSSION

The fifteenth century saw the virtual end of the use of cess pits, no doubt the result of improved sanitary conditions following the introduction of night cartage in the later medieval period. A garden soil developed over part of the site and the underlying dark soil became reworked.

### *Building 644 and associated contexts*

The notable event of this period was the construction in stone of Building 644, which had a pegged tile roof. It was rectangular externally, and divided into two near-circular rooms, resulting in massive corners. The shape of the building suggests that it was not for domestic occupation. It could have been an oven or kiln, although there was no positive evidence (such as burnt residues, evidence of scorching, or a stokehole) to confirm such an interpretation. Projecting from the northwest side of the building was a small stone structure (744), possibly a hearth. It was intensely scorched and contained charcoal, and was probably related to the use of the stone building.

To the southwest side of Building 644 was a carefully constructed cobbled area, probably a yard surface, and beyond it a clay surface. The absence of any associated walls and the presence of a thin trample soil suggest that both surfaces were external.

The dating of the Building 644 is problematic. It was built over Pit 864, dated to the fourteenth century, which accords with the residual medieval pottery from its foundations. However, the building was more likely in use a little later, judging by the small quantity of fifteenth and possibly sixteenth century finds recovered from the associ-

ated cobble and clay surfaces. A group of robber pits provides a *terminus ante quem* in the late seventeenth century for the building's destruction.

Overlying the surfaces on the southwest side of the building was a tile spread (527), containing fragments of window kame and glass, possibly deriving from re-roofing a nearby building such as Ceely House, although no such activity is documented at this time.

#### *Walls 691 and 702*

Two short sections of wall (691 and 702), intimately associated with a rammed limestone surface 640, to the northwest side of Building 644, dated to the late fifteenth or early sixteenth centuries. Although no direct relationship could be established with the building, they may have been extant when it was in use.

The walls, which were not continuous at foundation level, may have supported columns or an arch, above ground, but were evidently not load-bearing. They could have served as an internal division to a building, the walls of which were outside the excavation area. The wall and associated floor surfaces had been truncated by later pits (636 and 675), which prevented further interpretation.

#### *Pit 675*

This cess pit, dated by pottery to the sixteenth century may have been in use when Building 644 was extant, and was possibly used by the occupants of Ceely House. Besides the usual quantities of pottery and animal bone, a rare sherd of Spanish tin-glazed pottery, a glazed floor tile and a painted glass window panel indicated disposal of "high-status" debris. An unusual deposit of burnt (sheep?) metacarpal had been deposited within the pit. By the seventeenth century, the pit had been filled in with over 170 kg of roof tile, presumably derived from the stone building, or possibly from Ceely House.

#### *Palaeoenvironmental studies*

Analysis of soil samples from pit 675 yielded

predominantly mineralised material. Apart from sewage fly puparia, there were traces of fig, wild/alpine strawberry, raspberry, blackberry/bramble and a single grape. Some of these were probably imported as dried fruit, whilst others were likely to have been cultivated locally. Amongst the weed species present, henbane may have been used medicinally (see specialist report, below).

#### *Ceely House*

This house, erected soon after 1473, occupied a prime position on the Church Street frontage at a time when Building 644 was in use. Ceely House is believed to have been the 'Brother House' of the guild of the Fraternity of St Mary (Trench and Fenley 1991, 2, 14–15). It is possible that the guild built and owned the stone structure as an oven to provide bread for the poor. However, despite its close proximity, it is uncertain whether the stone structure occupied the same plot as Ceely House.

Putting this issue aside, however, a mid-sixteenth century date for the stone building places it in the ownership of Edward Warner and John Gosnold, whilst a late sixteenth century date would put it in the ownership of the Heywood family. This raises the possibility that the structure was a malting kiln, since Richard Heywood was a maltster (Trench and Fenley 1991, 18).

Following the disuse of Building 644, its associated external surfaces became buried under a spread of tile (527) in the late sixteenth or early seventeenth centuries. Chalk and limestone were later dumped over this area, in an attempt to limit further subsidence into the underlying medieval pits, and also to provide foundations for a clay surface (509). Further demolition or rebuilding of a nearby building resulted in the accumulation of another tile/rubble spread (417), in the later seventeenth century. This material must pre-date Wall 487, which was part of an early eighteenth century building.

#### *Window kame and glass*

Window kame and fragments of window glass (including four coloured examples) were recovered from twelve different deposits, dating to the later seventeenth century. The most likely source is a

nearby building such as Ceely House, which underwent a number of internal alterations, including the replacement of its oriel windows, at this time (Trench and Fenley 1991, 19). Alternatively the kame and coloured glass could have come from the church, 60m to the northwest, or from the former school house, which was built on the northwest side of Ceely House, on Church Street, in the late seventeenth century; the rear wall (494) of this building bounded the southwest side of the former courtyard and was later (in the early eighteenth century) incorporated into the Headmaster's House of the new school.

Towards the end of the seventeenth century a garden soil (632) developed. Its upper part was later reworked (436), in the eighteenth century.

### *THE EIGHTEENTH CENTURY (Fig 17)*

This period saw the construction (in two phases) of the former Grammar School, the walls of which delimited the area under investigation. The walls were recorded together with a series of postholes, possibly the result of scaffolding erected during construction. Two brick drains, an ash pit and a well or water cistern were also built. A garden soil developed over a part of the site.

**Garden Soil 436** developed over the site in the early 18th cent. and led to the reworking of an earlier garden soil (632) of the 17th cent. Contained 242 sherds, 7kg of tile, 0.5kg of bone, 180 clay pipe fragments and glass.

**Former School Building Walls 413 and 429** formed the northeast and northwest walls of the former courtyard area, and have been retained within the new Museum complex. The walls used mortared red bricks (225mm × 110mm × 60mm) and were founded on relieving arches. Mineralised traces of wooden stakes beneath the foundations are thought to be the remains of the timber formwork for the arches.

**Former School Building Wall 487**, constructed in the same manner as Walls 413 and 429, was originally part of a separate building.

**Surface 443**, a layer of rammed limestone fragments (2.5m+ L). Contained 106 sherds, over 5kg of tile, clay pipes, bone and oyster shell. Above Garden Soil 436. Truncated by the former school building and Structure 432.

**Structure 432** consisted of three courses of mortared red

bricks (225mm × 110mm × 60mm), forming a square structure (internally 0.3m across). A charcoal/ash residue adhered to the internal brick surfaces, although there was no trace of burning *in situ*. Cut Surface 443. Truncated by former Wall 492.

**Structure 610** consisted of horizontally placed peghole roof tile butted by bricks lying on their (wider) 'bed' sides. These were smaller (210mm × 100mm × 40mm) than those of the school building. A silty soil was present over the surface of the tiles. Above Garden Soil 436. Truncated by Wall 492.

**Structure 478** consisted of lightly mortared red bricks (225mm × 110mm × 60mm), lying 'bed' to 'bed' along the base and edged with further bricks lying (side-on), 'end' to 'end'. A silty soil was present along the base of the structure. Above Garden Soil 436.

**Garden Soil 442**, a silty loam soil. Contained 132 sherds, animal bone, 2 frags. Lead kame and 14 frags. window glass. Overlay Structures 432, 478 and 610.

### **DISCUSSION**

By the end of the seventeenth century, the site was covered by a garden soil (436), the upper part of which was reworked (632) throughout the early eighteenth century. Rammed limestone, possibly a yard surface, occupied part of the site.

#### *The Former Grammar School*

On the northwest side of Ceely House the Grammar School was built (1718–1720), around three sides of a central courtyard (Walls 413, 429 and 494). The walls were founded on relieving arches, in order to alleviate the problems caused by underlying pits.

#### *The Courtyard*

The creation of a central courtyard resulted in a reduction in ground disturbance and an emphasis upon surface brick-built structures.

Successive drains (478 and 610) were built to remove rainwater from the northeast wing of the former Grammar School and an ash pit (432) also belongs to this period. These features had gone out of use by the time that an additional wing (Wall

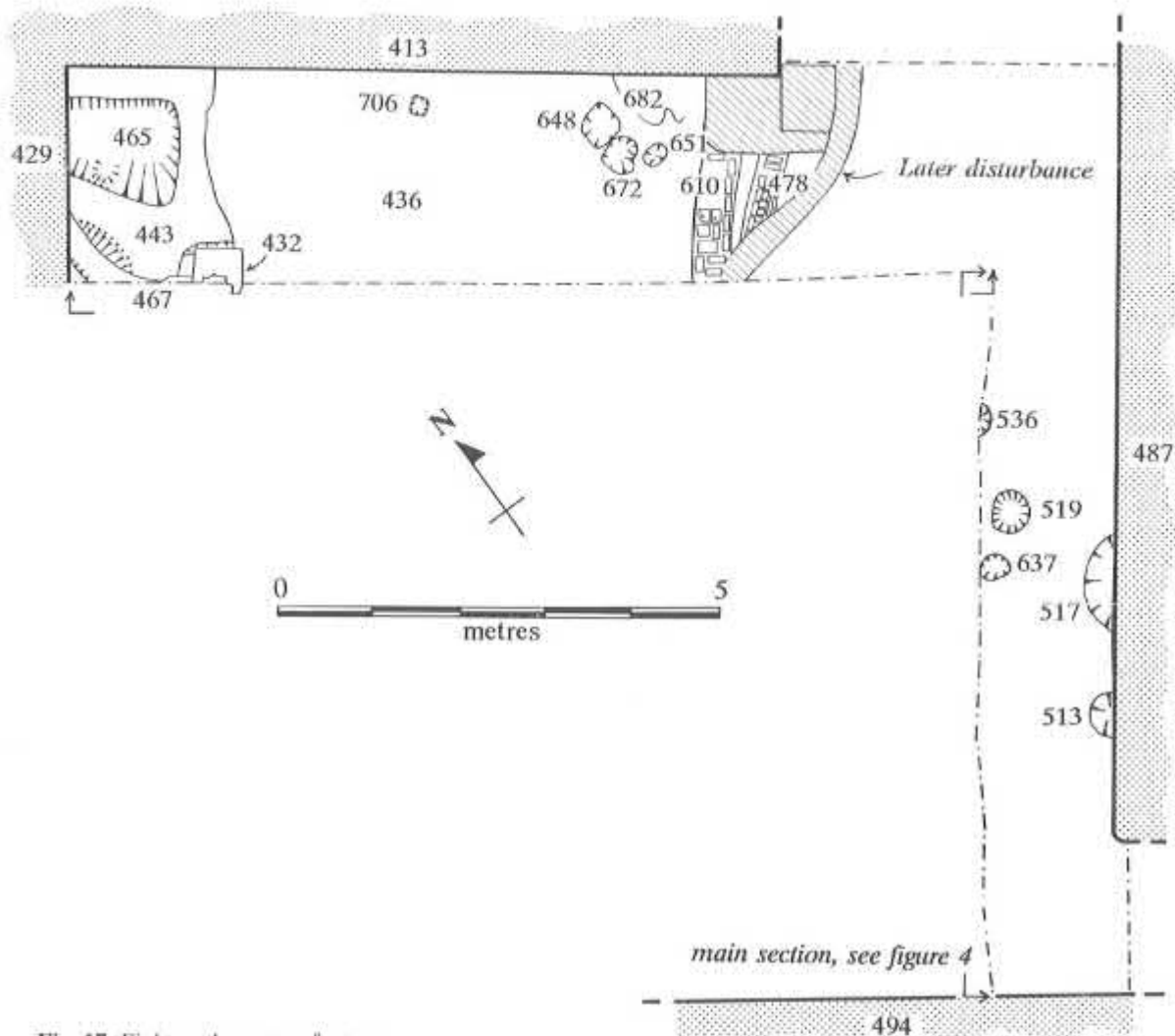


Fig. 17: Eighteenth-century features.

487; the Baker Room) was constructed on the southeast side of the courtyard. It used the same sized bricks as the earlier building and was, like the school, also founded on relieving arches. A *terminus post quem* in the early eighteenth century for its construction was provided by Garden Soil 436, through which the building was cut, which accords with the late eighteenth century date suggested by Trench and Fenley (*op cit*, Fig 13).

A thin garden soil within the courtyard contained a large quantity of window glass and lead came possibly originating from the blocking of windows during the refacing of the former school-

house (Wall 494), in the mid to late eighteenth century (Trench and Fenley 1991, 29–30).

#### Seventeenth and Eighteenth-century features observed during the watching brief.

**The lift-shaft area.** Evidence for earlier cellar arrangements behind the Church Street frontage was noted. A large sub-rectangular cavity (004), measuring at least 1.35 × 3.65m, was recorded along the southeastern side of the lift-shaft basement. This feature appears to have been a cellar, although little remained of the structure apart from the lowest course of one wall, which incorporated



both stone and brick, and a row of stone blocks which formed a step within the cellar floor. The lowest part of the floor was 1.86m below the 1993 floor level. This cellar seems to have been entered from a doorway near the eastern corner of the room. It is possible that earlier during the present century there may have been a passage from the corridor encircling the former muniment room which led to this cellar. However, the brick wall which formed the southeastern side of the lift-shaft basement was set in a construction trench (013) which cut the rubble fill (012) of 004, the earlier cavity. The brick wall itself was punctuated by two apertures, one a low arch 13 brick courses high which was an original aperture, the other a roughly rectangular gap seven courses high and 0.54m wide, immediately below the 1993 floor level at 91.88m aOD, which seemed to have been a secondary opening.

It appears, therefore, that there were two distinct phases of post-medieval cellar, one associated with the cavity 004 and a second associated with the brick wall, although the relationship of either phase of cellar to the main building phases is difficult to deduce. The 1718 buildings evidently incorporated structural elements belonging to the two small houses which had previously been on the same site (Trench and Fenley 1991, 29), and it is possible that the cavity 004 may have belonged to the pre-1718 building.

One further structural post-medieval feature was recorded: a stone plinth 0.83m square. This was situated roughly centrally within the lift-shaft; its precise date and functional relationship with the grammar school buildings were both unclear.

The Baker Room. Extensive underpinning of the Baker Room walls was undertaken by the contractors. Periodic inspection of this process showed that all four walls of the Baker Room rested on relieving arches. In view of the profusion of medieval pits, this appeared to have been a sensible precaution; however, it was difficult to determine whether the relieving arches had been constructed so as to avoid the load of the walls bearing on specific pits, as the arches appeared to have been reasonably regularly spaced. It would, in fact, have been difficult to find many points in this area where firm bedrock was present near the surface. Re-

mains of the formwork for the arches had survived, consisting of the remains of timber piles. In most instances these had rotted away entirely, leaving a series of lacunae within the fills. Typically these lacunae were in the order of 150mm square. Evidently the timbers used here were scrap, perhaps redundant joists or wall studs, for lines of nails had survived as patches of mineralisation along the outside of the voids. The piles had been inserted within the arches up to three deep.

#### Southeast of lift-shaft (now temporary exhibitions gallery).

Two pits were excavated by the contractors, along with a shallow connecting trench, in order to insert a portal frame. The southern pit was recorded to a depth of 3.27m below the existing floor level. The earliest feature recorded was a medieval pit with sloping sides. A brick relieving arch had been constructed over this pit when the outside wall of the grammar school buildings was built in 1718, but given the widespread occurrence of relieving arches amongst the eighteenth-century foundations, it need not be the case that the builders of the grammar school were aware of the presence of this specific pit.

#### Coachhouse.

A further relieving arch was noted beneath the former rear (northeastern) wall of the coach house; it did not appear to span a pit.

#### Courtyard.

A stone-lined well was noted during drain-laying; this has subsequently had the pipe-work for a manual pump inserted, probably during the nineteenth century.

### *THE NINETEENTH CENTURY (Fig 18)*

During this period the northeastern corner of the courtyard, which contained a cess pit, was partitioned by walls which butted onto the schoolhouse. Brick features, possibly bonfire stances, abutted one of the Museum walls. A brick drain and two small pits also date from this period.

**Walls 424, 427 and 496** formed two adjoining divisions

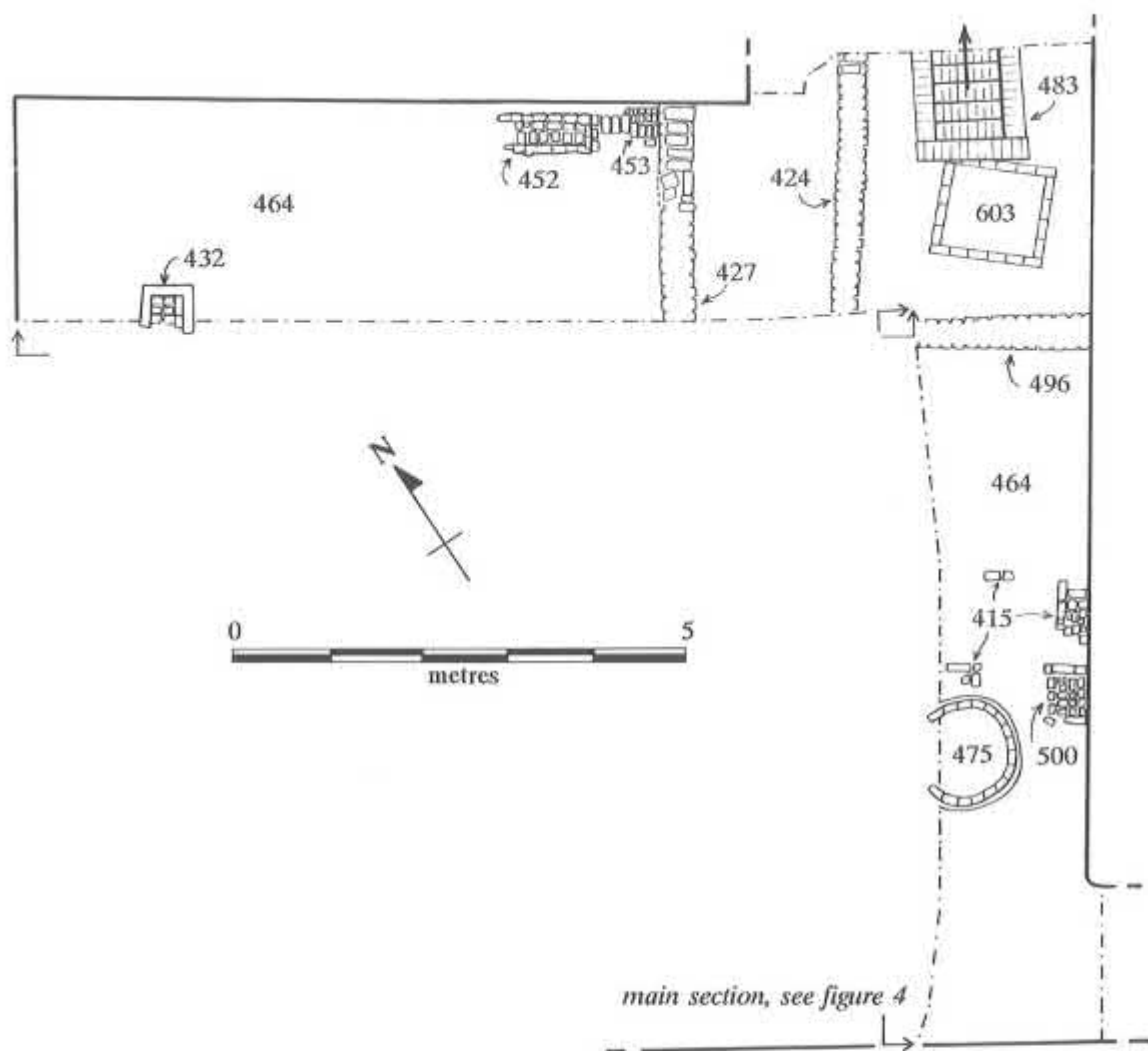


Fig. 18. Nineteenth-century features.

(1.7m × 2.5m and 2.8m × 2.5m) in the NE corner of the courtyard. Walls 424 and 427, about 2m apart, projected SW, at right-angles to the former school building (Wall 413), against which they were butted and irregularly 'keyed in'. The walls (0.4m W) survived as five courses of mortared red bricks (225mm × 110mm × 60mm). Wall 496 (0.35m W) projected at right-angles to Walls 424 and 427 and was butted against the former school building (Wall 487). Truncated by walls of former muniments room.

**Structure 500** consisted of three courses of mortared red bricks (225mm × 110mm × 60mm) forming two arms (2m L and 0.7m apart), abutted to Wall 487. A discontinuous charcoal deposit containing glass and oyster shell was found inside and around the brick structure. No scorching observed. Above Garden Soil 436 and below Brick Surface 415.

**Surface 415** consisted of one course of mortared red bricks (225mm × 110mm × 60mm) forming a surface which sealed Structure 500 and extended beyond it. Truncated by modern drains.

**Structure 452** consisted of two mortared courses of bricks (190mm × 110mm × 60mm) around three sides of an un-mortared brick base (internally 0.8m L × 0.3m W). Contained a silty deposit. Butted to Wall 427 (former school building) by a series of whole and half bricks (225mm × 110mm × 60mm) (Structure 453).

**Structure 603** consisted of mortared red bricks (225mm × 110mm × 60mm) forming a rectangular structure (internally 1.2m L × 1.1m W), to the NE side of Wall 496. The structure was set in a cut, 604. The base of the brick structure rested upon the surviving foundations of Building 644. A green-brown organic-rich residue adhered in places to the lower interior surface of the brick structure. Filled by an organic-rich silty clay. Contained 160 sherds, animal bone, limestone rubble, frags. of a glass goblet, carved masonry (possibly originating from the Georgian frontage of a nearby house, Beech-nut stones had been preserved by virtue of their contact with a number of copper alloy artefacts, including a coin, possibly a halfpenny of George III (third or fourth issue), which provides a *terminus post quem* of 1806 for the use of the pit.

**Structure 475** consisted of 19 mortared courses of re-used yellow bricks (165mm × 110mm × 55mm), possibly C17th and therefore re-used, forming an oval structure (1.23m L × 0.97m W × 1.5m D). Contained two fills: lower damp silty clay with pottery, tile, animal bone (including rat skulls) and fragments of three different glass goblets; upper rubbly silty sand with pottery, red brick, glass, plaster (2.5kg), slate, ceramic and limestone roofing, frags. of an iron knife and lock mechanism, and two small fragments of bone bearing the impressions of printing, probably from paper with which the fragments had lain in contact (cat no 80, below).

**Garden Soil 464**, a silty loam containing pottery, animal bone, and 16 frags. of window glass.

## DISCUSSION

In the early nineteenth century, three walls (424, 427 and 497) were butted onto the outer walls of the former Grammar School, to form two small open rectangular divisions within the east corner of the courtyard. These linked the southeast wing (of late eighteenth century date), of the former Grammar School, to the northeast wing (of early eighteenth century date), thereby enclosing the courtyard on its fourth side. Access into the courtyard from the northeast was possibly via a doorway in Wall 496, though none was evident at founda-

tion level. The new walls were not load-bearing and it is unlikely therefore that these divisions were roofed over as ground floor rooms. The purpose of these free-standing walls is unclear, although the brick structure (603) within the larger northeast division suggests that it had been used as an outdoor toilet. Study of the cess deposits from the structure revealed that the occupants of the former Grammar School had eaten apples or pears, and gooseberries. Opium poppy seeds were also present, although whether these represent local weeds or medicinal use is difficult to determine (see specialist report, below).

The pit was regularly emptied until the late nineteenth century, when it was filled with rubble, including Georgian architectural limestone masonry, similar to another fragment found in Garden Soil 464. The Georgian masonry, possibly fragments of window sills and upright mouldings, indicated the refitting of earlier, eighteenth century windows. Although there are no documented alterations of this kind to the former School Building in the early nineteenth century, it is possible that this was the date when the windows of the Schoolhouse were raised (Trench and Fenley 1991, 30).

The brick drainage features (478 and 610), had gone out of use by this time, and were buried beneath Wall 429. A replacement drainage system (452/453) was built from the northwest side of the wall along the foot of the northeast wing of the former Grammar School.

A brick structure (500) containing charcoal and ash (similar to an earlier, eighteenth-century ash pit, 432), butted against the new southeast wing of the former Grammar School. It was probably an ash-pit for the residue of bonfires within the courtyard. At some later date, a brick surface (415), possibly a pathway, was laid along the southeast side of the courtyard.

At a broadly similar time, a near-circular shaft (475), lined with re-used seventeenth-century(?) bricks was sunk into the south corner of the courtyard. This did not appear to have held cess, although cess had apparently preserved some of the palaeoenvironmental material which included mineralised gooseberry seeds (see specialist report, below), and its shallow depth (under 1.5m) and

inability to hold water meant that it was not a well, nor an underground cistern. Its function remains uncertain. The reused bricks suggest the demolition of a seventeenth-century wall in the early nineteenth century. The large quantity of plaster and roof tiles/slates provide evidence for substantial building activity in the mid-late 19th century.

### **Nineteenth century structures to the rear of the Museum.**

A number of nineteenth century features were revealed during the insertion of drains to the northeast of the southeastern corner of Ceely House and recorded during the watching brief. Inspection of the external brick wall here shows two blocked doorways. That on the right (ie the more northwesterly) evidently led into a small building, now demolished; the scar of its roof is still visible. The left-hand doorway apparently led directly out of the building. The main outside wall of this part of the buildings is dated by Trench and Fenley (1991) to the nineteenth century, and the features immediately outside it are unlikely to be earlier. They consist of the bases of two carefully constructed tanks or reservoirs (described here for convenience as tanks, although this interpretation may not be entirely secure), together with what appear to be drains.

**Brick tanks A and B.** The "tank" nearer to the wall, tank A, measured  $1.08 \times 0.87$  internally, but a brick pier with a curved edge jutting from the main museum wall, apparently constructed at the same time as tank A, protruded over its projected southern corner. The base was of  $0.30\text{m}^2$  tiles, replaced by bricks around the base of the pier. The sides consisted of a single course of bricks, those on the side adjacent to the museum being individually chamfered. There was no evidence that these sides had ever been more than a single course in height. Parallel with the northwestern side of tank A, and separated from it by a band of clean, deliberately laid clay  $0.07\text{m}$  wide, was a brick wall, surviving for four courses above the level of the tile base of tank A. This wall continued beyond tank A and formed the base of a wall adjacent to tank B, surviving to a height of thirteen courses.

Tank B was parallel with tank A, and separated from it by  $0.37\text{m}$ . Within the gap was a band of mortar  $0.23\text{m}$  wide over a single line of bricks set side by side; these were set in blue-grey clay, and situated  $0.03\text{m}$  from the outer edge of tank A and  $0.11\text{m}$  from tank B.

Tank B itself measured  $1.02 \times 0.50\text{m}$ , but there was some irregularity at the southern corner where two of the bricks forming the tank wall had been set at an angle rather than trimmed to size. Those bricks which formed the walls were flush with the floor, which consisted of mortar over tiles which had been grouted in blue clay. Blue clay was also present around all four sides of this feature. Although no evidence for any sides had survived above the level of the base of this structure, the regular construction and the use of blue clay suggested that this had also been a tank.

To the east of tank B were other lines of bricks set in blue clay, but the area visible was limited by later brick walls. A culvert with brick walls and a stone roof led in a southerly direction from this area, from approximately the point at which the blue clay was no longer visible.

The precise nature and function of these structures are uncertain. They are evidently all of one phase, and appear to have been designed to channel, store, and perhaps process liquids below ground. It seems unlikely that any industrial process would have been undertaken here in the nineteenth century, and the most likely explanation is that these features represent the below-ground arrangements of a privy, although attempts to find parallels have not been successful. It is also hard to determine the purpose of the brick pier, which was apparently load-bearing. The privy would presumably have been situated within the small building to which access was gained via the right hand blocked doorway. An alternative explanation is that the structures were intended to collect water from the roof for re-use.

### **THE TWENTIETH CENTURY**

At the beginning of the twentieth century, the buildings of the former Grammar School formed four adjoining wings about a central courtyard, contiguous to the southeast side of Ceely House. The northeast and southeast wings of the school were no longer linked; Walls 424, 427 and 496 had been dismantled by the end of the nineteenth century.

When the Grammar School moved to Walton in 1907 (Pevsner and Williamson 1994, 157), the former School buildings (excepting the Assistant Master's House) were bought by the Buckinghamshire Archaeological Society. In the 1920s or

1930s, an exhibition room was built in the north-west corner of the courtyard, although no archaeological trace of it was found. In 1934, the cellared Muniment Room (Walls 489 and 492) was inserted into the courtyard. In the 1950s, the schoolroom windows were raised once again, and the courtyard roofed over, as a ground-floor building. Finally, in 1993, the courtyard roof and Muniment Room walls were dismantled to accommodate an expanded basement area beneath a first floor art gallery of the new Museum Building.

## THE POTTERY

*by L Rayner*

### Introduction

The watching briefs and excavation produced a total of 6716 sherds (98,706 kg). The majority of the assemblage dates to the Medieval and Post-Medieval periods but there was also some Iron Age, Roman and Saxon pottery recovered. In some cases substantial pottery groups have enhanced the understanding of stratigraphical relationships and provided some dating, but the lack of other datable artefacts has made it difficult to refine this with any precision. This problem has been amplified by the truncation and re-cutting that has occurred on site, resulting in a large quantity of residual material.

### Methodology

A full fabric and form analysis was not carried out because of restrictions on time and resources. All pottery was identified by visual examination, with sherd count and weight recorded on pro-forma sheets. Important groups or contexts were then examined in more detail with further information on form and fabric noted. The main problem encountered during the identification was distinguishing plain Iron Age sherds from fine Saxon sherds, due to the largely undiagnostic nature of the material. The sherds that are at present irresolvable have been placed in a category 'Iron Age/Saxon'. The implications of this will be discussed more fully later.

All sherds are illustrated (figs. 19–21, where sherds are identified by their catalogue numbers) except where indicated otherwise.

## MIDDLE IRON AGE

One hundred and twenty-four sherds (1.309 kg) were recovered that could confidently be dated to the Iron Age. These were identified on the basis of fabric and form, by comparison with previous material recovered from Aylesbury, particularly George Street (Allen & Dalwood, 1983). Iron Age occupation has been identified on the basis of five features, which produced 21 Iron Age sherds and no other later pottery. The remaining 103 Iron Age sherds were all found in residual contexts.

In general the Iron Age pottery is very small and highly abraded, indicative of material that has been redeposited. The large residual assemblage suggests that further Iron Age features had been destroyed by later activity.

Three main fabric types were present and these accord with other middle Iron Age pottery recovered in the Aylesbury area, for example at George Street (Allen & Dalwood 1983).

- i) A sandy fabric, mainly containing sub-angular to sub-rounded clear quartz inclusions, varying in texture from fairly coarse to very fine.
- ii) A shelly fabric, varying in texture from very coarse to fine.
- iii) A coarse gritted fabric with mainly flint inclusions.

Forms were very hard to discern due to the small and undiagnostic nature of the assemblage; only nine rims were recovered. These were mainly simple, rounded or upright rims. Burnished surfaces occurred in both the sandy and shelly fabrics, but decoration was rare, with the exception of the highly burnished and decorated sherds recovered from context 783 and 767.

### Stratified Iron Age pottery

- I. Shouldered bowl: fine shelly fabric, dark brown surfaces and core; highly burnished. Around the neck there is a segmented double-cordoned effect decoration consisting of short oblique incisions over which three parallel lines have been added. An incised swirled concentric decoration covers the body and carinated shoulder reaching up to the double-cordon; this has been executed with a single

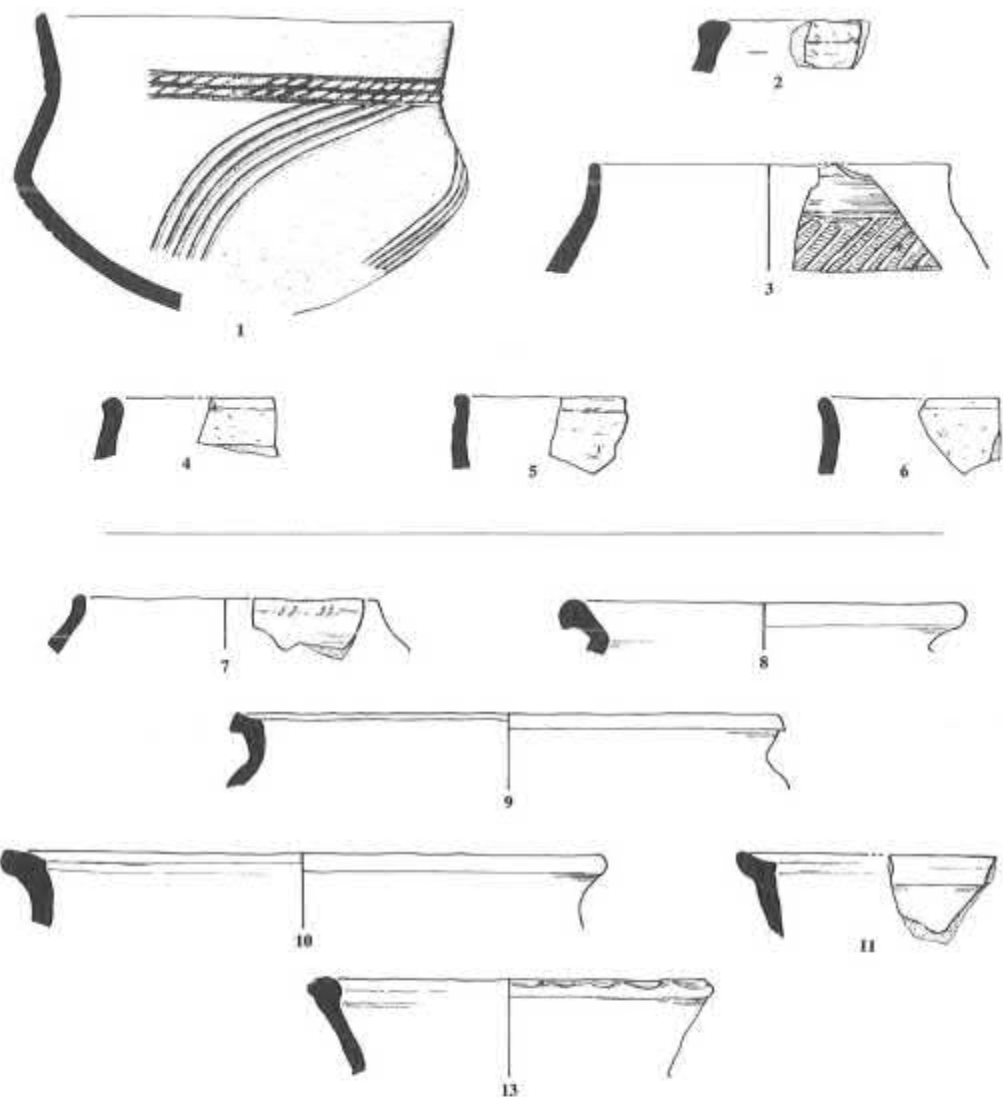


Fig. 19: Iron Age and Saxon pottery (scale 1:3).

point rather than a comb tool, and was applied before the horizontal lines of the neck-cordon. The incised lines, particularly those on the body, vary in depth and width; they are generally shallow, but tend to be deeper below the carination. (783).

Dr Elaine Morris (University of Southampton) writes:

"The form: tripartite profile composed of a lower

body zone separated from a returned or incurved zone by a carinated shoulder, with medium-length, slightly flaring, vertical rim, is paralleled most closely within the All Cannings Cross – Meon Hill range of bowls (Cunliffe 1974, fig A6 no 4, dated 5th to 3rd cent.). The decoration, however, is not at all a Wessex tradition, but virtually identical to the Fengate-Cromer tradition. Early/Middle Iron Age".

2. Upright thickened rim: coarse calcareous fabric, black surfaces and core (798).

### Residual pottery

3. Slightly everted rim: fine sandy fabric, dark brown surfaces and core highly burnished with incised decoration (767).
4. Upright rim: fine shelly fabric, mid grey surfaces and core, burnished exterior (794).
5. Upright rim: sandy fabric, black surfaces and core (843).
6. Slightly everted rim: fine shelly fabric, black surfaces and core (816).

### ROMAN

Only two sherds (0.01 kg) have been identified as Roman and none of the features has been assigned a Roman date. One sherd of coarse ware was recovered unstratified and the other, a body sherd from a poppy-head beaker, was recovered from context 795 along with medieval material.

### SAXON AND SAXO-NORMAN

At present only twelve sherds (0.157 kg) can confidently be dated as Saxon and none of the cut features excavated on site has been assigned to the Saxon period. Most of the identified Saxon pottery is of St. Neots type, dated to the tenth to eleventh century. Two sherds of Ipswich ware, dated 700–850 AD, were also recovered, from contexts 282 and 754. No Early Saxon material, such as stamped vessels or grass tempered wares, was present. Eighty-four sherds of Saxo-Norman pottery were recovered in shelly and sandy fabrics.

The recovery of only small quantities of identified Early and Mid Saxon pottery, in comparison to the larger quantity of Iron Age pottery, may lead to the assumption that the unidentified sherds, assigned 'Iron Age/Saxon' are more likely to be Iron Age in date. On the other hand, the apparent lack of Early and Mid Saxon material may be a reflection of this type of assumption.

The distribution and source of the Saxon pottery is interesting as it mainly occurs residually, often also with Iron Age material. It is assumed that the Saxon material was being brought onto the site, and not that Saxon features had been totally destroyed. This movement of material may have been part of domestic refuse disposal or manuring of

horticultural land. A number of Saxon settlements have been located in Aylesbury at George Street and The Prebendal, which may provide a source for this material (Allen & Dalwood 1983; Farley 1986).

### Dark Soil deposit 906

This deposit was excavated in five layers, an upper layer, 704 and a lower layer comprising four spits, 743, 751, 754 and 767. The dark soil deposit was truncated by the inhumation cemetery but this was only distinguishable at the basal level. This created a potential problem of large quantities of intrusive material within the ceramic group.

Five hundred and twenty three sherds (4.513 kg) were recovered from the five contexts: 6 Iron Age sherds, 19 Iron Age/Saxon sherds, 2 Saxon sherds (1 St. Neots type, 1 Ipswich ware), 72 Saxo-Norman sherds, 375 sherds dating to the thirteenth or fourteenth century, 45 sherds dating to the fourteenth or fifteenth century, 3 sherds dating to the late Tudor period and 1 sherd dating to late sixteenth or early seventeenth century.

Throughout the deposit, pottery dated to the thirteenth or fourteenth century is predominant. This is either indicative of the formation date for the deposit or is a result of the presence of grave fills undetected in the dark soil deposit, as noted above.

Only the top layer, 704, contained pottery dating from the fourteenth century to the Post-medieval period, and clearly this has been introduced into the deposit through re-working. Layer 704 also contained 72 sherds of Saxo-Norman pottery. This is a very substantial group representing 86% of all sherds of this date and its presence may suggest an upper date range for the formation of this deposit of the eleventh to twelfth centuries.

The six Iron Age sherds are clearly residual, redeposited from disturbed Iron Age features that lie beneath the dark soil deposit. The remaining ceramic groups from the deposit are those dated Saxon and 'Iron Age/Saxon'. Of all the sherds attributed to this latter category, 49% were recovered from the dark soil deposit. The presence of St. Neots type and Ipswich ware may also be of use in

defining a date when the dark soil began to form. On the basis of the stratigraphy and the presence of Saxon and Saxo-Norman pottery a date range of the eighth to twelfth century AD may be suggested for the formation of the dark soil deposit.

#### Residual Saxon pottery

7. Upright finger-tipped rim: sandy fabric, black surfaces and core (832).
8. St. Neots everted rim: shelly fabric, pinkish surfaces, mid grey core (881)

#### Saxon and Saxo-Norman pottery – Dark soil deposit

9. Jar: coarse quartz gritted fabric. Mid grey ext., light grey core, mid-light grey int. (767)
10. Jar: coarse sandy and flint gritted fabric. Mid grey surfaces, light grey core (754).
11. Jar: coarse sandy fabric. Black surfaces, light grey core (754).
12. Ipswich ware storage jar: sandy fabric. Orange-brown ext. and core, black int. Not illustratable. (754)
13. Jar: coarse sandy and shelly fabric. Buff-brown surfaces, mid grey core (704)

#### MEDIEVAL

A total of 4068 (64,279 kg) sherds dating to the medieval period were recovered. The assemblage ranged in date from the twelfth to fourteenth century and four ceramic phases were identified:

Phase I:	twelfth century
Phase II:	late twelfth to early thirteenth century
Phase III:	thirteenth to fourteenth century
Phase IV:	fourteenth century

For material dated to the twelfth century, the most common fabrics were sandy and shelly wares, mainly in cooking pot and jar forms. Much of the pottery of this date was recovered as residual, along with material of a later date.

In the thirteenth and fourteenth centuries the Brill industry dominates the pottery assemblage. The Brill material is present in a variety of fabric colours and forms showing the standard develop-

ment evidenced at other sites, including George Street. Forms recovered include globular jugs, baluster jugs and a late Brill wide flanged bowl. Many of the sherds are glazed with the typical mottled green glaze and with standard Brill decoration such as red-brown slip lines and double square vertical rouletting along applied strips (Ivens 1982; Yeoman 1983).

Quantification of the pottery recovered from medieval cut features is presented in Table 1.

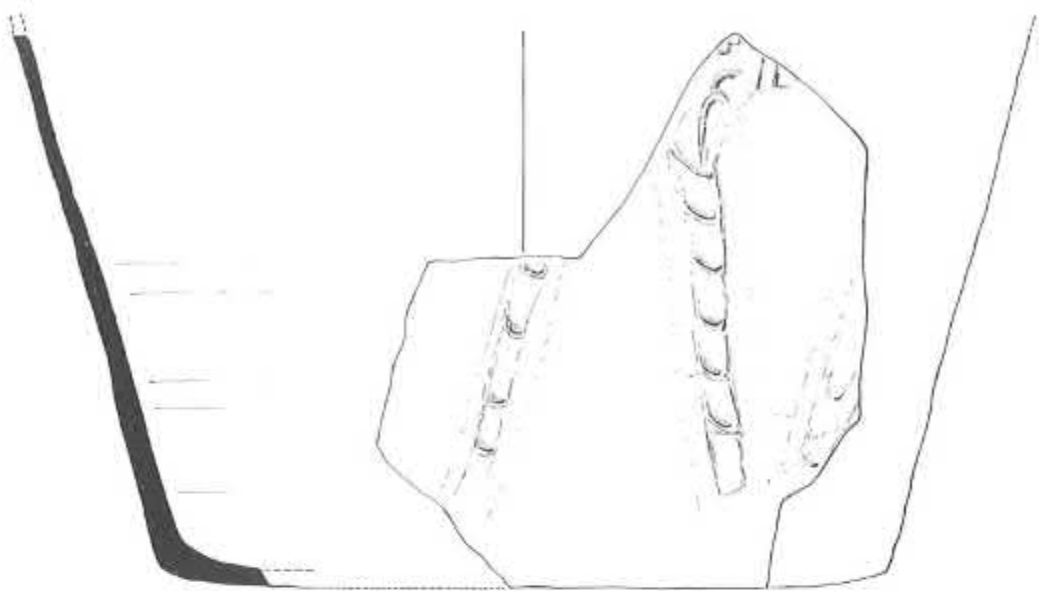
Pit 862, in phase II, produced a very interesting group and serves as a good example of primary deposition. Five large, joining sherds (1.835 kg) from a huge jar were recovered (fig. 20, no. 14). The jar is decorated with thumbled applied strips running at a slight angle vertically up the jar. Dated to the Saxo-Norman period, the form appears to have developed from the late Saxon tradition and is comparable to Stamford and Thetford types (McCarthy & Brooks 1988, 154–158). Accompanying these sherds was a late twelfth-century cooking pot (1.01 kg), completely intact except for the base (fig.20, no.15). This pottery was recovered from the surviving 0.5m of fill, below the re-cut (914) and clearly represents primary deposition.

Pit 856 and its re-cut 913 demonstrate the processes of deposition and re-deposition that were occurring on site. From pit 856, twenty-seven sherds from a sandy glazed jug were recovered. From the re-cut 913, a further 27 sherds of the same jug were recovered, to form a virtually complete vessel (fig. 20, no.17). It appears the jug was deposited in pit 856 and then in the process of re-cutting some of the sherds were removed. These were subsequently re-deposited back into the later cess pit, possibly when pit upcast was used to seal layers of cess.

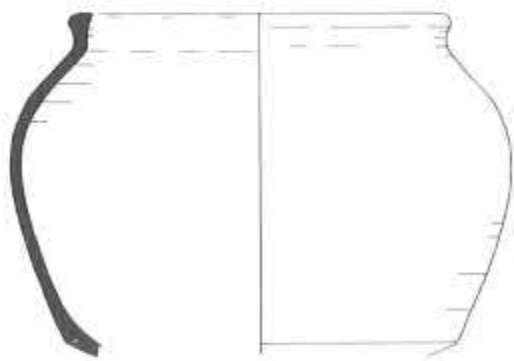
#### Stratified Medieval pottery

14. Storage jar: flint gritted fabric, mid grey surfaces, light grey core. Applied vertical thumbled strip (phase II, 862).
15. Cooking pot: sandy fabric, black surfaces, light grey core. Sooting on ext. surface. (phase II, 862)
16. Pitcher: sandy fabric, dark grey surfaces and core,

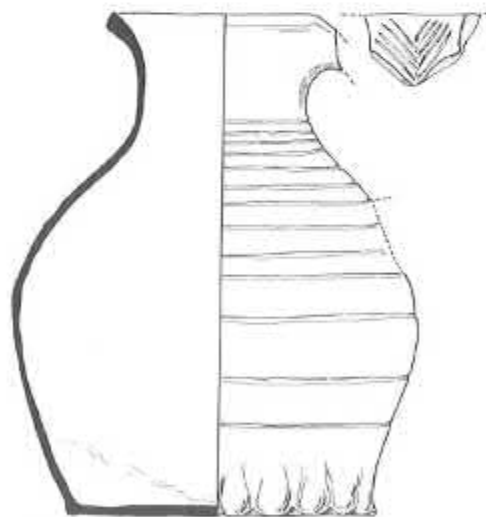




14



15



17

Fig. 20: Medieval pottery (scale 1:4)

brown margins. Squat, globular body, plain strap handle (phase II 820) (not illustrated).

17. Jug: sandy fabric, orangey surfaces, mid grey core. Pale greeny-yellow glaze. Thumb-impressed base, regular combing on body. Strap handle slashed to form V. (Phase II/III, 860/854)

## Conclusions – Pottery groups from pits

### Phase I – twelfth century

	<i>Sherd Count</i>	<i>Sherd Weight (total)</i>	<i>Av. Sherd Weight</i>	<i>%</i>
<b>12th cent.</b>	1	0.015	0.015	<1%
<b>Residual</b>	1	0.001	0.001	<1%
<b>Total</b>	2	0.016	0.008	<1%

% = percentage of pottery from pit features.

Phase I produced the lowest quantity of pottery. This is not surprising considering that only one pit has been identified in this phase. The lack of pits attributed to phase I may suggest that other modes of rubbish disposal were utilized during this period, for example surface middens. Twelfth-century pottery was re-deposited into later features as the use of pits for rubbish disposal intensified, but only in small quantities.

### Phase II – late twelfth to thirteenth century

	<i>Sherd Count</i>	<i>Sherd Weight (total)</i>	<i>Av. Sherd Weight</i>	<i>%</i>
<b>Late</b>				
<b>12th–13th</b>	355	7.597	0.021	24%
<b>Residual</b>	33	2.092	0.063	2%
<b>Total</b>	388	9.689	0.025	26%

Nine pits and one well were assigned to phase II and these produced 415 sherds. Twenty-seven sherds could not be dated confidently and so have been excluded from analysis. The majority of the sherds appear to be primary deposition, with 355 of the 415 sherds dating to the late twelfth or thirteenth century. The average sherd weight for this date is also high at 0.021 kg. This trend is exemplified by pit 862, from which a virtually intact cooking pot was recovered. The remaining 50 sherds range in date from Iron Age to twelfth century and

have a lower average sherd weight for each type, ranging from 0.006 to 0.012 kg. The average sherd weight for residual wares is greatly increased due to the presence of sherds from the large Saxo-Norman storage jar also recovered from pit 862. The thick fabric, huge dimensions and storage function of the vessel would have made it impractical and probably unnecessary to move often. Therefore the vessel is likely to have had a long period of use, with a low risk of breakage. The sherds appear to be in a context of primary deposition, despite the Saxo-Norman date given for the vessel type.

### Phase III

	<i>Sherd Count</i>	<i>Sherd Weight (total)</i>	<i>Av. Sherd Weight</i>	<i>%</i>
<b>13th – 14th</b>	300	4.445	0.015	20%
<b>Residual</b>	215	4.187	0.019	15%
<b>Total</b>	515	8.632	0.017	35%

Only two new pits, two re-cuts and one well are assigned to this phase but there is a large increase in the quantity of pottery per pit, probably due to the increased quantities of pottery being re-deposited. Three hundred of the 520 sherds recovered date to the thirteenth to fourteenth century. The remaining sherds included 167 late twelfth or thirteenth-century sherds and 41 twelfth-century sherds, which give some indication of the scale of re-deposition occurring. In phase III, the average sherd weight for residual and thirteenth or fourteenth-century pottery has declined in comparison to phase II, to a range of 0.007 to 0.019 kg. The average sherd weight for the phase has declined to 0.017 kg.

### Phase IV

	<i>Sherd Count</i>	<i>Sherd Weight (total)</i>	<i>Av. Sherd Weight</i>	<i>%</i>
<b>14th c.</b>	173	2.400	0.013	12%
<b>Residual</b>	359	5.015	0.014	24%
<b>Total</b>	532	7.415	0.013	36%

539 sherds were recovered from three pits. Seven sherds could not be confidently dated and so

**Table 1:**  
Pottery from medieval features by phase, highlighting the pottery used to date the context

P	Cxt	Ct	Weight (kg)	Pre-med.	Unid	Late					
						12th cent	12th cent	12th/13th cent	13th cent	13/14th cent	14th cent
1	d 793	7	0.082	2	4		1				
	p 852	2	0.016	1		1					
2	p 875	115	1.135	2	3			110			
	p 771	33	0.355	3				30			
	p 889	41	0.802	6				15	20		
	p 856	31	0.925					31			
	p 862	9	2.845	5				4			
	r 914	94	1.887							94	
	p 824/558	53	0.955		3	3		36	11		
	p 786	1	0.100		1						
	w 820	33	0.885				3			33	
	p 873	2	0.025		2						
3	r 917	344	5.090			41		106	48	149	
	r 913	131	3.055					61	33	37	
	w 865	38	0.435		5					33	
	p 888	4	0.004		4						
	p 895	2	0.052	2							
4	p 864	70	0.740	4						27	39
	p 653	424	6.282	5	7			23		236	153

P = phase Ct = count p = pit d = ditch w = well r = re-cut Pre-med = residual pre-medieval pottery Unid. = medieval pottery but not closely dated

have been excluded from analysis. Of the 539 sherds recovered only 173 date to the fourteenth century, indicating a continuing increase in the quantity of material being re-deposited. Of the remaining group, 328 sherds date to the thirteenth or fourteenth century and 23 to the late twelfth to thirteenth century. Again the average sherd weight within each dated group has also decreased. The average sherd weight for the phase has declined to 0.013 kg.

Interpretations of this kind must bear in mind the problems associated with sherd count and weight. Although it is generally accepted that sherds of a smaller size and abraded nature represent re-deposition, the differential breakage patterns of fabric types and forms may create a bias

and result in a particular type being under- or over-represented in the group. The different functions performed by vessels also affect their span of use and thus different forms will be of different ages when discarded, which has implications for the dating of deposits (Vince 1987, 201). Nevertheless, the pattern of increasing disturbance and re-deposition is clear, emphasising the problem of residuality when dealing with urban assemblages.

### Inhumation cemetery

The inhumation cemetery falls within phase III: thirteenth to fourteenth century. Two phases of burial activity were identified and these have been termed 'early' and 'late' inhumations.

### Early Inhumations

Twelve graves are attributed to phase I of the cemetery, from which a combined total of 218 sherds were recovered. There were 47 Iron Age sherds (21.2%), one Saxon sherd (0.46%) and 170 late twelfth to thirteenth-century sherds (78.34%). The Iron Age and Saxon sherds are clearly residual, being redeposited from earlier features or from the dark soil deposit through which the graves were cut. The medieval fabrics were mainly sandy, some with glazed surfaces.

### Late Inhumations

The three graves assigned to this phase of the cemetery produced 26 sherds (0.169 kg). Twenty three sherds are medieval but only twelve could be confidently dated to the thirteenth century. The fabrics present were mainly sandy with wiped or glazed surfaces. Three sherds of 'Iron Age/Saxon' pottery were also recovered.

### POST-MEDIEVAL

Pottery dating from the late fifteenth century to the post-medieval period amounted to 2409 sherds (31.997 kg), which constituted 35.87% of the whole assemblage. The types recovered included glazed red earthenware, stoneware, and tin-glazed earthenware.

Most of the stoneware recovered is of German manufacture with material from Frechen and possibly also Raeren; later deposits also produced some Westerwald material (fig.21, nos. 18–21). All sherds recovered are salt glazed, normally with an iron brown colour wash. The forms recovered were mainly bellarmine jars and tankards or mugs. The Westerwald material is decorated with the distinctive cobalt blue and manganese purple colours. The use of both colours, together with the decoration form of stems with leaves and flowers, suggests a date of late seventeenth century.

A variety of forms were present in glazed red earthenware, including a chafing dish, dripping pan, pipkins and a colander base. These forms were in use from the sixteenth century but their utilitarian function means form development was conservative and closer dating is problematic.

The early eighteenth century saw a phase of brick building which resulted in little pottery being deposited and subsequently recovered. Clearly, the use of the land and mode of domestic refuse disposal had changed.

Only a small group of Victorian and later pottery was recovered from deposits, such as drain backfills and pipe trenches. This pottery consisted of glazed earthenware, creamware, transfer printed ware and porcelain. Most of these were in forms such as bowls, plates, cups, and teapots.

The pottery recovered from post-medieval deposits is presented in Table 2, with the pottery used to date the deposit highlighted. The percentage of residual material present is high in the majority of post-medieval deposits. The dating of these deposits has, therefore relied, more heavily on stratigraphic relationships.

### Stoneware

#### Frechen

18. Bellarmine mask: grey fabric, yellowy buff int. Speckled brown salt glaze ext. (464)
19. Bellarmine: grey fabric, pinkish grey int. speckled brown salt glaze ext. Central band of running scrolled leaves, acanthus leaf motif and medallion with human head profile. (632)
20. Bellarmine medallion: fragment of heraldic medallion. Grey fabric, grey int., brown speckled salt glaze ext. (495)

#### Westerwald

21. Mug: pale grey fabric, light grey salt glaze ext. Lozenge design with moulded boarders. Decoration in cobalt blue and manganese purple. (464)

#### English

22. Bellarmine medallion: grey fabric, grey int. Light brown speckled glaze ext. Fragment of heraldic medallion. (499)
23. Bellarmine mask: grey fabric, grey int., Greenish-grey speckled glaze ext. (428)

#### Tin-glazed wares

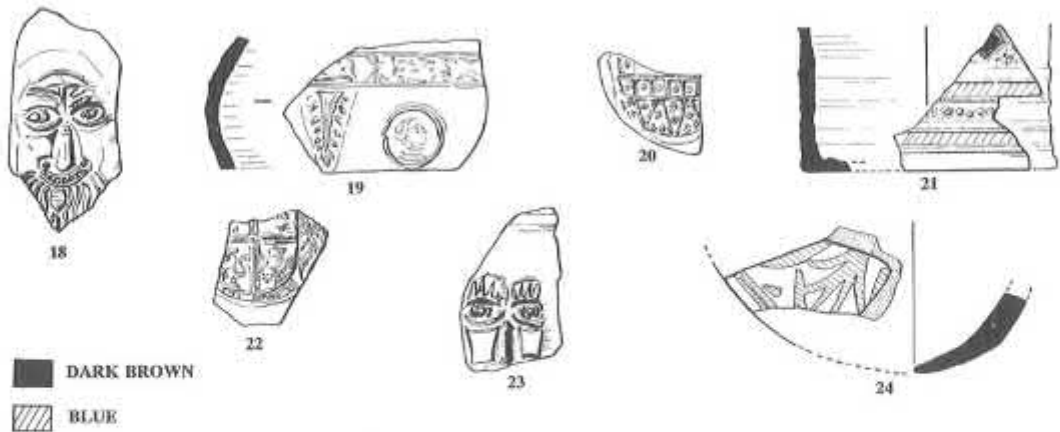
R Thomson writes:

24. Rim of a small bowl covered with a thin white tin-glaze and decorated internally with two cobalt blue horizontal lines and a linear or floral motif. The

**Table 2:**

Pottery from post-medieval deposits, showing quantities of intrusive and residual sherds, and pottery dating the context (highlighted).

	<i>Total count</i>	<i>Weight (kg)</i>	<i>Residual pottery</i>	<i>Intrusive pottery</i>	<i>Dating</i>
Garden soil 625	395	3.108	20	1	374
Building 644	64	0.288	63		1
Cobbled surface 562 & 568	100	1.265	93		6
Tile layer 527	34	0.370	28		6
Surface 531 & 523	33	0.195	24		9
Surface 509	21	0.156	20		1
Pit 675	53	2.185	15		38
Pit 636	29	0.370	19		10
Tile layer 417	365	4.986	36		329
Garden soil 632	102	1.334	8		94
Surface 640	21	0.250			21
Surface 639	18	0.141	17		1
Garden soil 436	242	2.895	23		219
Surface 443	106	0.950	6		100
Garden soil 442	132	1.185	13		119
Structure 603	160	2.320			160
Structure 475	77	1.620	6		71
Garden soil 464	268	3.595	19		249



**Fig. 21:** Post-medieval pottery (scale 1:3)

fabric has a pink tinge and contains fine quartz with the occasional red iron inclusion and is typical of the wares produced in Valencia in the late medieval period. However, there is no trace of the lustre decoration which is more normal in Spanish imports from the region in this period and the Aylesbury find is a rare example of a Paterna Blue bowl (Gerrard *et al* 1995, 287) (Context 568)

There were two other fragments (not illustrated):

Body sherd from shoulder and neck of small globular Malling jug with an overall white tin-glaze decorated externally with blue mottling. The cordon at the junction of the shoulder and neck is typical of the jugs imported from the Low Countries in the mid to late sixteenth century (Hurst *et al* 1968, 126) (Context 686).

Body sherd from tin-glazed drug jar decorated externally with cobalt blue horizontal lines and blotches. London, late 17th/early 18th cent. (context 422).

## CONCLUSIONS

The County Museum assemblage is comparable to others from Aylesbury. In particular, the assemblage from George Street provides a good comparison for the middle Iron Age and medieval pottery. The most unusual item from the County Museum is the burnished and decorated Iron Age bowl from context 783. Nothing comparable has been previously recorded from Aylesbury and its style of decoration is unusual for the area.

The presence of two sherds of Roman pottery on the site is of interest, as the only other Roman finds recovered were a few coins. A source for this material is difficult to suggest, although areas of Roman activity have been identified in Aylesbury, at Buckingham Street and in the Walton area.

Also worth noting is the presence of two sherds of Ipswich ware, which has few findspots in Buckinghamshire. Unfortunately, one sherd was found residually in a later inhumation grave, but the second was recovered from the dark soil deposit (906). The sherds recovered both came from jars, typical of forms found outside the East Anglian kingdom. Only two other sites in Aylesbury are recorded as having Ipswich ware present: Aylesbury, The Prebendal, and Walton Lodge (Blinkhorne *pers comm*).

The medieval assemblage has strong similarities to that from George Street, where comparable fab-

rics and forms were recovered. The Brill industry dominates from the mid thirteenth century onwards, with late fourteenth century forms also present. Typically, the majority of this material was recovered from a series of pits, which cover a similar date range to those excavated at George Street.

It is harder to put the post-medieval assemblage into a wider context, owing to a lack of published material of this date. Although post-medieval material was recovered from George Street, Walton Court and Croft Road, none of the assemblages have been published in any detail. The only exception is a published group of late eighteenth-century finds from a well at Bourbon Street, but this provides very limited comparison (Farley 1977, 446–7).

The late fifteenth to early sixteenth-century material provides an interesting transitional group between the late medieval and post-medieval. The most common ware recovered for this date was the black-glazed earthenware, mainly in *tyg* forms; although at present a source for this material has not been established. Clearly, German salt-glaze stone-wares were also reaching the area by the sixteenth century.

The later post-medieval assemblage consisted of typical wares and forms, with large quantities of glazed red earthenware recovered. The importance of these groups was not in their intrinsic value but the dating they provided, enabling construction phases to be tied to historically documented developments.

## THE ARTEFACTS

*By L. Rayner, D. Bonner, J. Parkhouse  
and N. Smith*

The finds have been grouped by period and then material. Most of the finds published here have been dated intrinsically or by association with other datable material. Full descriptions of all the objects recovered are held in the site archive.

The non-pottery artefacts are catalogued in a single numerical sequence (1–81). Illustrated items (figs 22–27) are indicated by an asterisk next to their catalogue number, and are identified by their catalogue number on the appropriate figure.

## PREHISTORIC

### Flint: (Fig. 22) *D. Bonner*

Nineteen flint artefacts and debitage, weighing 485g were recovered; only two pieces are from possible non-residual contexts within Iron Age features. There were also eighteen unworked flints, weighing 540g.

Of seventeen flakes recovered, ten were secondary and one was tertiary. Three had been modified by retouch, two showing signs of use. Comparison of the breadth:length ratios with published chronological data-sets (Pits 1978) suggests a later prehistoric context for the waste assemblage. There were one single-platform and one multi-platform core (40 – 50mm, weighing 30g and 60g). Neither had been worked to their full potential. Both are likely to date to the later prehistoric period. Four tools were recovered, one scraper, two points and one

hammerstone: the scraper was small and retouched (through patination) along one side and the distal end. Its date is uncertain; it exhibits evidence of reuse.

- \*1. **Point**; a point of presumed neolithic date made by bifacial retouch at the corner of a small trapezoidal flake, and also exhibiting wear-traces on the opposing butt end. (SF 1285)
- \*2. **Point (awl)**; a point with a rounded end on a large flake of late mesolithic or later date. (SF 1286)
- \*3. **Hammerstone**; a sub-spheroidal flint hammerstone (58–64mm in diameter; weighing 305g), with chips to opposing surfaces. This item is comparable to a similar example from an Iron Age pit at George Street (Allen and Dalwood 1983, 16). Both hammerstones showed evidence of careful preparation and repeated use and were not from the *ad hoc* use of available flint. Their size and corresponding weights were not unusual and they may date from the neolithic onwards. (SF 1221)

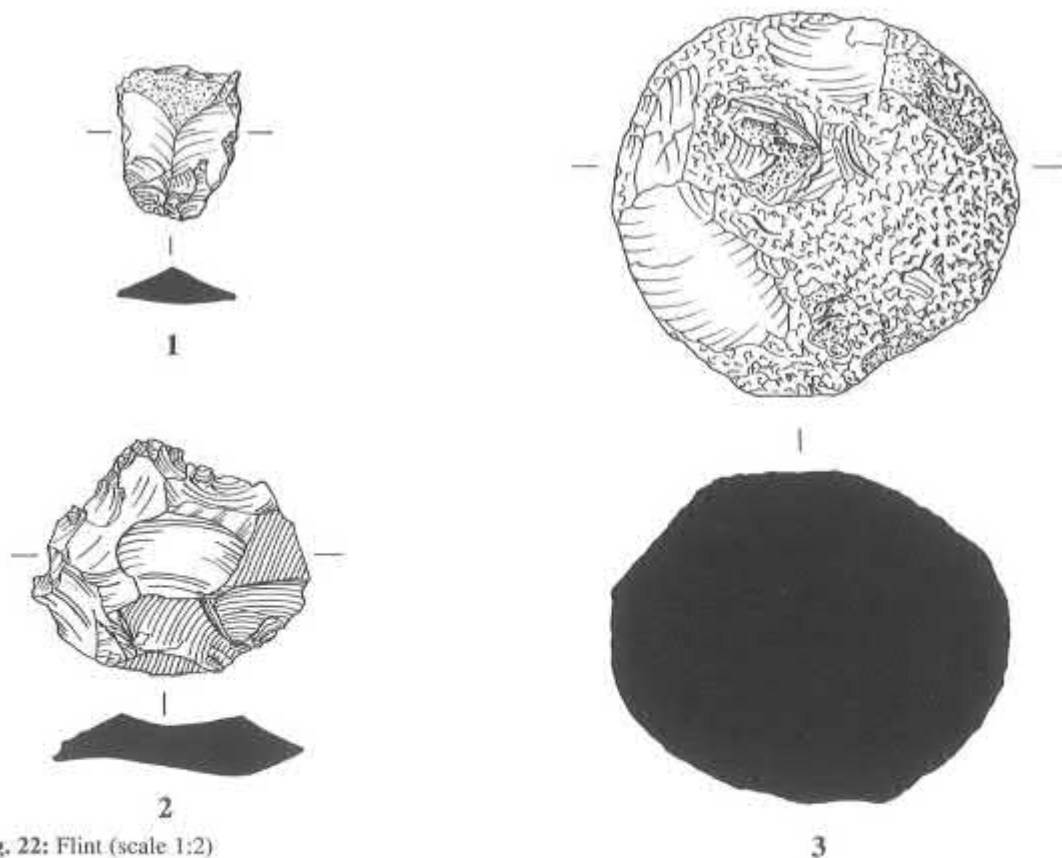


Fig. 22: Flint (scale 1:2)

The range of the assemblage implies that it is of mixed period, with elements from the Later Mesolithic onwards. There is a high proportion of tools (26% of the assemblage). The two cores suggest that at least some flint processing took place locally, although there was a lack of primary flakes. The tools are indicative of nearby domestic activity, although there were no cutting tools. Dating this possible settlement activity is difficult; the points suggest possible mesolithic and early neolithic activity, whilst the remaining material may well be late Neolithic or Bronze Age; there is little reason for considering any to be Iron Age. This conclusion contradicts the interpretation of the George Street flint; it was suggested that all the flints were Iron Age (Allen and Dalwood 1983, 16).

#### Shale Bead (Fig. 23)

- \*4. Fragment of conical shale bead (10.8mm-14.5mm diam) with a central perforation (4.9mm-7.9mm diam) and a consistent dark, brownish black colour (10YR 2/1). Found in Iron Age gully 799. (SF 1233)

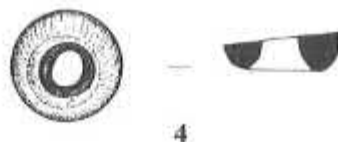


Fig. 23: Shale bead (scale 1:1)

This fragment of perforated shale bead had a centrally-bored hole probably made by a flint point or bronze awl (perhaps using a fine sandy abrasive), the product of a highly skilled craftsman. In the prehistoric period, shale is commonly found in non-domestic or 'ritual' locations, such as funerary contexts (in association with other items of high status) and appears to have been used for personal ornament and display. Its restricted access may have given shale a high perceived value, making it a symbol of power and prestige, sought after as an 'exchange' or 'export' commodity (Shepherd 1985). The most likely source for this bead is the Kimmeridge clay deposits of Dorset. The bead may date to the third or second millennium b.c., when shale was predominantly used for jewellery, and it would therefore be residual in gully 799. It may

however be contemporary with the Iron Age settlement, in which case its domestic context is unusual. Only six prehistoric sites within the county have produced shale objects, including similar beads near Taplow (Stevens 1884), as well as Chinnor, Oxfordshire (Richardson and Young 1951).

#### Copper Alloy Pin (not illustrated)

5. **Copper Alloy pin** L. 26mm tip fragment; Mid Iron Age gully (853). This pin may perhaps come from a brooch similar to the bronze fibula from George Street (Allen and Dalwood 1983, 16, Fig 11).

## ROMAN

### Coins

6. **Æ3** (17mm diam), Constantine, A.D. 317-320. **Obv.** IMP. CONSTANTIN AVG, helmeted and cuir bust. **Rev.** VICTORIAE LAETAE PRINC. PERP. Two Victories facing and holding a wreath or shield (inscribed VOT. P.R.), upon a column or altar, in field. Mint mark: STR (Trier) in exergue (cf. *RIC* 7, 215). Coin residual in medieval pit 786.
7. Corroded Cu alloy coin, 17mm diam and 1mm thick; **Æ3**, probably late Roman. Residual in medieval pit 558.
8. Corroded Cu alloy coin (Roman?) Residual in medieval pit 862.

## MEDIEVAL

### Copper Alloy Dress Accessories (Fig. 24)

#### Buckle Plates

- \*9. **Buckle plate** L. 38mm w 21 mm, Folded sheet buckle plate with recessed end for frame. Dot and line decoration around edge; two rivet holes around which gold colouring survives; 13th-14th cent. grave fill (765). (SF 1199)
- \*10. **Buckle plate** L. 27mm w 10mm. One side of folded sheet buckle plate. Rectangular with recessed end for frame; one rivet hole; tiny stamped decoration runs across width. Plate dates from 1350 onwards; dark soil deposit (751). (SF 1186)
- \*11. **Buckle plate** L. 53mm w 18mm. Folded sheet buckle plate. Rectangular plate with recessed end for frame; engraved zig-zag decoration along edge of plate and forming 'Y' shape along centre of plate; two rivet holes. Cf High St, Marlow (Bonner forthcoming, no 4) and Westbury, Milton Keynes (Mills 1995, cat 126, fig 155 no 98). Date range: early 13th - early 15th cent.; 17th cent. layer (510). (SF 1103)



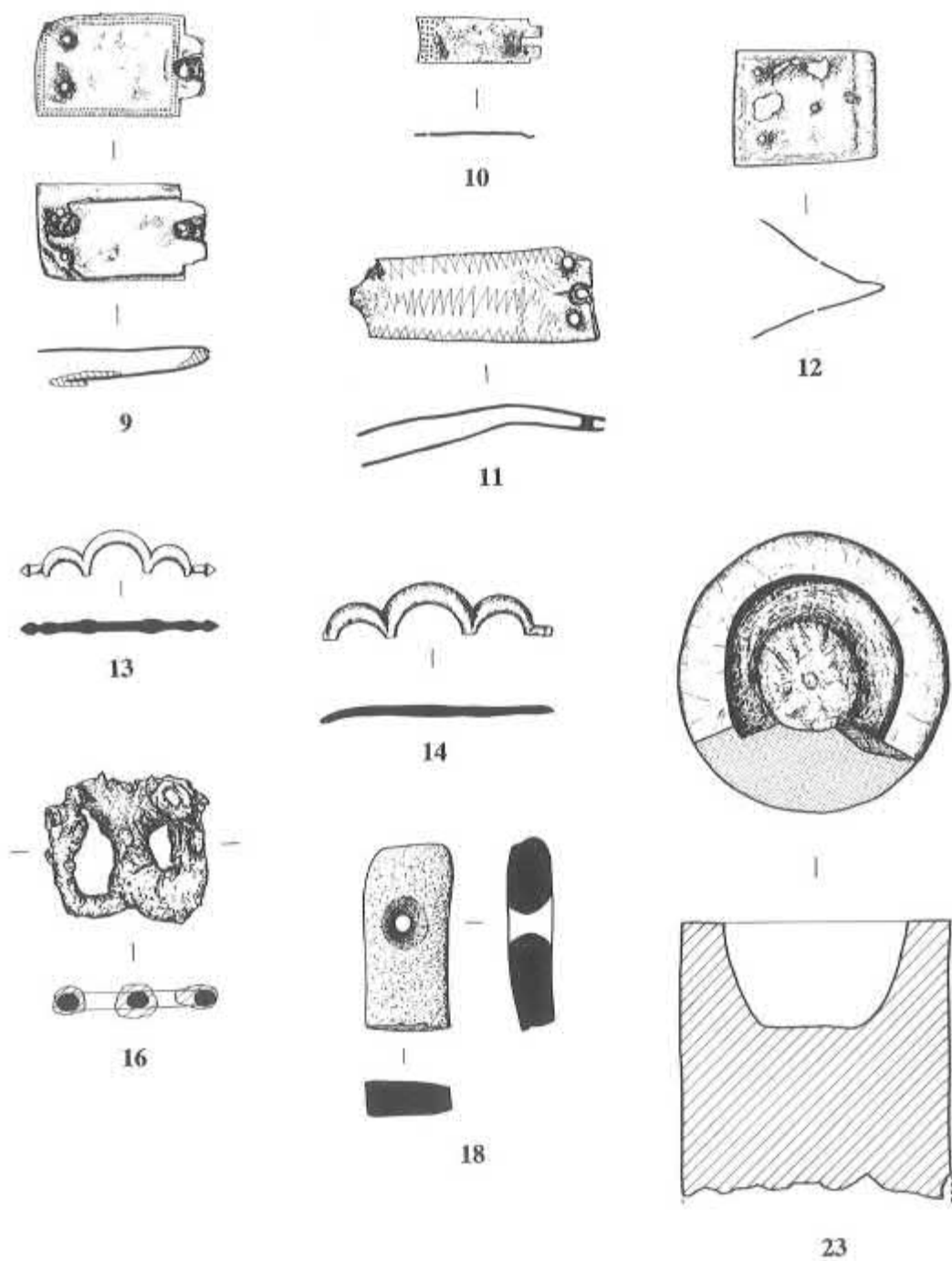


Fig. 24: Medieval artefacts (nos 9-18 scale 2:3; no 23 scale 1:4)

### Strap Ends

- \*12. **Folded sheet strap end** L 30mm w 24mm. Sub-square; three rivet holes visible; punched triangle decoration along three edges of front panel only. Late 12th to early 13th cent. pit (828). (SF 1242)

The dating for this type of strap end is imprecise but similar examples have been recovered in London with pottery dating to the mid thirteenth to mid fourteenth centuries (Egan & Pritchard 1991, 158–160). The recovery of the strap end with quantities of late twelfth to early thirteenth-century pottery may suggest that the type should be dated slightly earlier.

### Mounts

- \*13. **Arched pendant mount** L 41mm w 11mm. Free swinging pendant mount with three arches; 14th cent. pit (863). (SF 1241)
- \*14. **Arched pendant mount** L 51mm w 11mm. Free swinging pendant mount with three arches; residual in 19th cent. layer (464). (SF 1204)

Similar arched pendant mounts have been recovered in London dated to the mid 13th to mid 15th cent. (Egan & Pritchard 1991, 219–224).

### Iron Dress Accessories

#### Buckle Frames

15. Buckle frame L 30mm w 33mm. Small double oval buckle frame; grave fill 13th cent. (807). (SF 1220)
- \*16. **Buckle frame** L 33mm w 28mm. Small double oval buckle frame; early 16th–17th cent. pit (684). (SF 1185)

Buckle 15 was recovered with quantities of late twelfth to thirteenth-century pottery from the backfill of a grave, dated to the thirteenth century. Although the buckle frame form is generally ascribed a mid fourteenth-century date, iron buckles have been recovered from other urban areas from contexts as early as the mid thirteenth century; in particular in London where plain iron, double looped buckles have been recovered from mid to late thirteenth-century contexts (Egan & Pritchard 1991, 85–86).

### Iron Coffin Fittings

17. **Nails**, twenty-three nails were recovered, probably from a coffin. All the nails except one were in a corroded, fragmentary state. The complete nail measured 40mm in length and 16mm across the

head. The fragments of other nails appeared to be of similar dimensions (Burial 885).

### Worked stone *J Parkhouse*

#### Whetstones

These are all fashioned from fine-grained micaceous metamorphic rock, probably schists. No petrological work has been undertaken on these items, but a Norwegian source is possible.

- \*18. Whetstone fragment, with aperture (diam 4.8mm) for suspension loop. Sub-rectangular cross-section, measuring 8.7 × 19.5mm at the fracture (SF 1177; from dark soil deposit 743)
19. Bar whetstone, fractured at either end. A small perforation for a suspension loop has been bored to a depth of only 4mm; this operation may have been aborted when the stone fractured. Sub-rectangular cross section 26.1 × 21.0 to 20.7 × 20.1mm. (SF 1195; context 553; late C12th/13th)
20. Small fragment, possibly from a whetstone, although no characteristic wear patterns are visible, and the identification must be regarded as doubtful. (SF 1237; unstratified)
21. Whetstone, with irregular cross-section and one flat surface. Broken at the narrowest point where the section is 18.1 × 26.9mm. Length 115.4mm. (SF 1268, context 866; 13th/14th cent. well)
22. Fragment of whetstone with sub-triangular cross-section; two of the surfaces evidently worn with use. 23.0 × 19.9 tapering to 17.3 × 19.6mm. Length 69.0mm. (SF 1269, context 770; late 12th/13th cent. pit)

#### Lamp

- \*23. Cylindrical block lamp in cream limestone, probably Portland limestone. The sides and rim are carefully dressed. There are traces of a projection from the side, perhaps for some form of flange to grip the item, but the lamp is damaged at this point. The base is uneven and has been either trimmed or damaged. The upper part of the interior is sooted, suggesting that this item had been used as a lamp rather than as a stand for a pottery lamp. Stone and pottery lamps were in common use between the later tenth and early fourteenth centuries (Barclay and Biddle 1990, fig 307). 156mm diameter. (SF 1226; re-used in Well 818)

#### Quernstones

24. Small fragment from the circumference of an upper quern in Mayen lava. Max thickness 21.6mm; although the stone would undoubtedly have been

thicker further towards the centre, this was evidently from a well-used stone. Mid-Saxon or later? (SF 1229, context 591; 12th/13th cent.)

25. Roughly trimmed disc in Mayen lava. One edge is flattened, and is evidently the grinding surface of a quernstone from which this piece must have been reworked; the size of the piece indicates that the quern was a bedstone. A Mid-Saxon or later date is probable for the original quern. The function of the reworked item is not known. A possibly similar piece (diameter c74mm; thickness c42mm) from a 13th/14th cent. context in Southampton has been described as a rubber; the published illustration suggests that the underside may have been rather more even than our example (West *et al* 1975, no 2232). Diam (max) 111mm; thickness (max) 34mm. (SF 1230, context 781, fill of "early" phase grave 782 (inhumation 815); 13th cent.)

## POST MEDIEVAL

### Worked bone and Ivory (Fig. 25)

#### Gaming pieces

- \*26. **Bone die** Cubical die marked 1/6, 2/5, 3/4 with dots. Very well made and marked; early 18th cent. pit (428). (SF 1010)
- \*27. **Bone domino** L 26mm; marked double four; residual in 20th cent. layer (414). (SF 1023)

Similar examples have been recovered from early post-medieval contexts in Norwich, Oxford, Plymouth, and Southampton (Margeson 1993, 217).

#### Implements

- \*28. **Bone handle** L 95mm. Two-piece bone handle with iron tang in situ; early 18th cent. deposit (436). (SF 1069)
- \*29. **Bone handle** L 54mm. Carved and decorated to form ?bird head. Possibly handle from paper knife; late 18th cent. layer (442). (SF 1011)
- \*30. **Bone handle** L 68mm. Decorated bone handle with incised lines; iron tang remains in situ; drain fill 20th cent. (406). (SF 1024)
31. **Bone handle** L 89mm. Length of iron rod in situ. Highly polished. Oval cross section; 18th cent. layer (417).
32. **Bone handle** L 36mm. Length of iron tang remains in shaft. Oval cross section; unstratified (025).
33. **Ivory handle** L 62mm. Very highly polished with oval cross-section. Inscribed with 'Wilson, Southsea' towards end of handle. Possibly cutlery handle; unstratified (402).

#### Personal objects

- \*34. **Bone razor handle** L 81mm w 27mm. Razor handle with folding iron blade. Handle has undulating edge for grip; mid-late 18th cent. layer (442). (SF 1047)
- \*35. **Bone toothbrush** L 51mm. Head with rounded end; bristle holes do not fully pierce head. No bristles remain; 20th cent. layer (414). (SF 1017)

#### Unidentified objects

- \*36. **Bone strip** L 33mm. Strip with finished edges. Incised lines run along edge. Relief decoration faintly visible on surface; Late 17th – early 18th cent. layer (436). (SF 1082)
- \*37. **Bone object** L 74mm. Three lines incised at both ends and across centre. Both ends of bone are ridged presumably for attachment to implement; drain fill 20th cent. (456). (SF 1025)
- \*38. **Bone object** L 21mm. Turned object with hollow end, possibly a handle which had been riveted to the end of a shaft; early 18th cent. well fill (521). (SF 1101)
- \*39. **Bone strip** L 25mm. Flat strip of bone with two incised parallel lines and concentric circular decoration; 13th/14th cent. pit fill (546). (SF 1207)
40. **Bone** Sheep metatarsal with perforation bored through (02).
41. **Bone** Sheep tibia with perforation bored through one side only; early 16th – 17th cent. pit (684).

## Copper Alloy Dress accessories

### Lace Chapes (Fig. 26)

A total of 18 copper alloy lace chapes were recovered from contexts dating from the early post medieval period. Two main types were recovered:

**Type 1** – Tapering sheets, rolled so that edges meet but do not overlap – 'edge to edge' seams. This type may also have rivets at the wide end. Mid thirteenth to fifteenth-century date, with some surviving into the sixteenth or seventeenth centuries.

**Type 2** – Sheets folded so that one or both long edges cut inward to secure the lace. This type can be decorated but both types are more commonly plain. Mid sixteenth to seventeenth century.

Lace chapes such as these have been recovered from well dated contexts in other urban areas and it

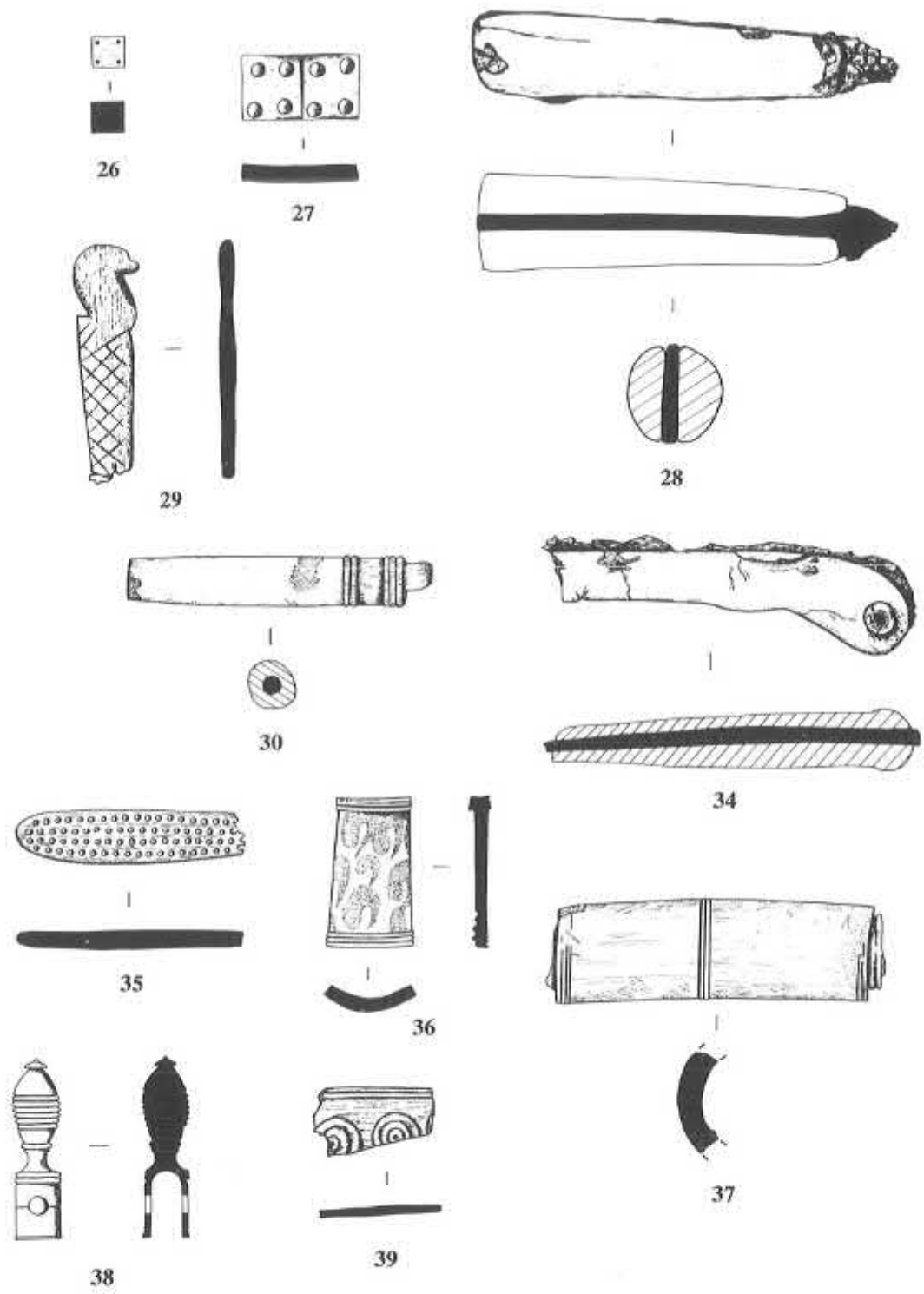


Fig. 25: Post-medieval artefacts (scale 2:3)

is suggested that a date of 1550–75 can be assigned to the change from type 1 to type 2. The recovery of type 1 chapes from mid thirteenth-century contexts in London has led to the earlier date for the start of this type (Egan & Pritchard 1991, 281).

- \*42. Type 1; L 27mm d 1.5mm; 15th cent. layer (625)
- 43. Type 1; L 14mm d 1.5mm; wide end only; 15th cent. layer (625)
- \*44. Type 1; L 28mm d 2mm; seams appears to overlap at base. Fragment of silk braid remains in situ; complete; early 16th – late 17th cent. pit (701).
- \*45. Type 1; L 20mm d 2mm; one rivet hole; virtually complete; early 16th – 17th cent. layer (562).
- 46. L 20mm d 2mm (Uncleaned); early 16th – 17th cent. layer (566).
- \*47. Type 1; L 16mm d 2mm; virtually complete; early 16th cent. layer (566)
- \*48. Type 1; L 23mm d 2mm; Med. pit/posthole (572).
- \*49. Type 2; L 34mm d 3mm; virtually complete; late 16th – early 17th cent. layer (677).
- \*50. Type 2; L 20mm d 3mm; stamped decoration to produce cross-hatched pattern over lower half of chape; Complete; 17th cent. stone robber trench (606).
- \*51. L 21mm d 2mm; virtually complete; 17th cent. layer (417).
- \*52. Type 2; L 24mm d 2mm; virtually complete; late 17th cent. layer (437).
- \*53. Type 1; L 30mm d 2mm; complete; late 17th – early 18th cent. pit (fill 518 of pit 519).
- \*54. Type 2; L 35mm d 3mm; virtually complete; late 17th – early 18th cent. layer (632).
- \*55. Type 1; L 30mm d 4mm; incomplete; residual in a mid – late 18th cent. layer (442).

Three chapes residual in a late 18th – early 19th cent. layer (464):

- \*56. Type 1; L 26mm d 2.5mm; virtually complete.
- 57. Possible chape; L 30mm w 4mm; flattened; both ends broken.
- 58. Type 2; L 15mm , L 8mm; two fragments.

#### *Dress Hook (Fig. 26)*

- \*59. **Hooked cloak tag** L 32mm w 15mm. Copper alloy hooked cloak tag. Rectangular loop; tag has circle of dots and central boss with face of a bearded

man; 17th cent. layer (417). (SF 1073)

Similar objects, which are usually sixteenth or seventeenth century, and are sometimes found in pairs linked by a length of chain) have been recovered from Norwich, Winchester, Great Linford, Milton Keynes, Wharram Percy (a linked pair) and Coventry (Margeson 1993; Biddle 1990, 551–2; Mynard & Zeepvat 1992; Hurst (ed) 1979, 111, fig 56.25; Woodfield 1981), although these are all the open-work, floral type; the closest parallel is from post-medieval demolition rubble in the cloister at Bayham Abbey, Sussex (Goodall 1983, 109, fig 48.5); there is also a similar hook with a rather different face from Oxford (Goodall 1989, fig 96.33). (We are indebted to Mrs AR Goodall for comments on this item).

#### *Pins (Fig. 26)*

A total of 87 copper alloy pins were recovered from the excavation. Of these, 37 were small dress-making pins from contexts dating from the seventeenth century. All these pins had small globular heads and did not exceed a length of 30mm. The other 50 pins recovered varied greatly in size from 26mm to 55mm, although all except two had globular heads. The pins were recovered from a variety of features dating from the fifteenth to the twentieth centuries and would have been used for fixing head dresses, veils and clothing. Clearly, the majority of the pins recovered are post-medieval in date, but some medieval examples may be present. Two examples of this are the wound-wire headed pins which have a thirteenth to fifteenth-century date range.

- \*60. **Wound-wire head pin.** L 52mm; complete. 15th cent. pit fill (625). (SF 1196)
- \*61. **Wound-wire head pin** L 49mm; complete. Residual in early 16th – 17th cent. layer (527). (SF 1120)

#### **Copper Alloy Personal Objects**

##### *Thimbles*

- 62. **Thimble** L 27mm H 22mm. Flattened, very corroded. Possibly an open ring type, or top may be broken or cut away; 17th cent. pit fill (686).
- 63. **Thimble** H 19mm. Crushed thimble with plain band around base and round indentations; 17th cent. tile dump (527).

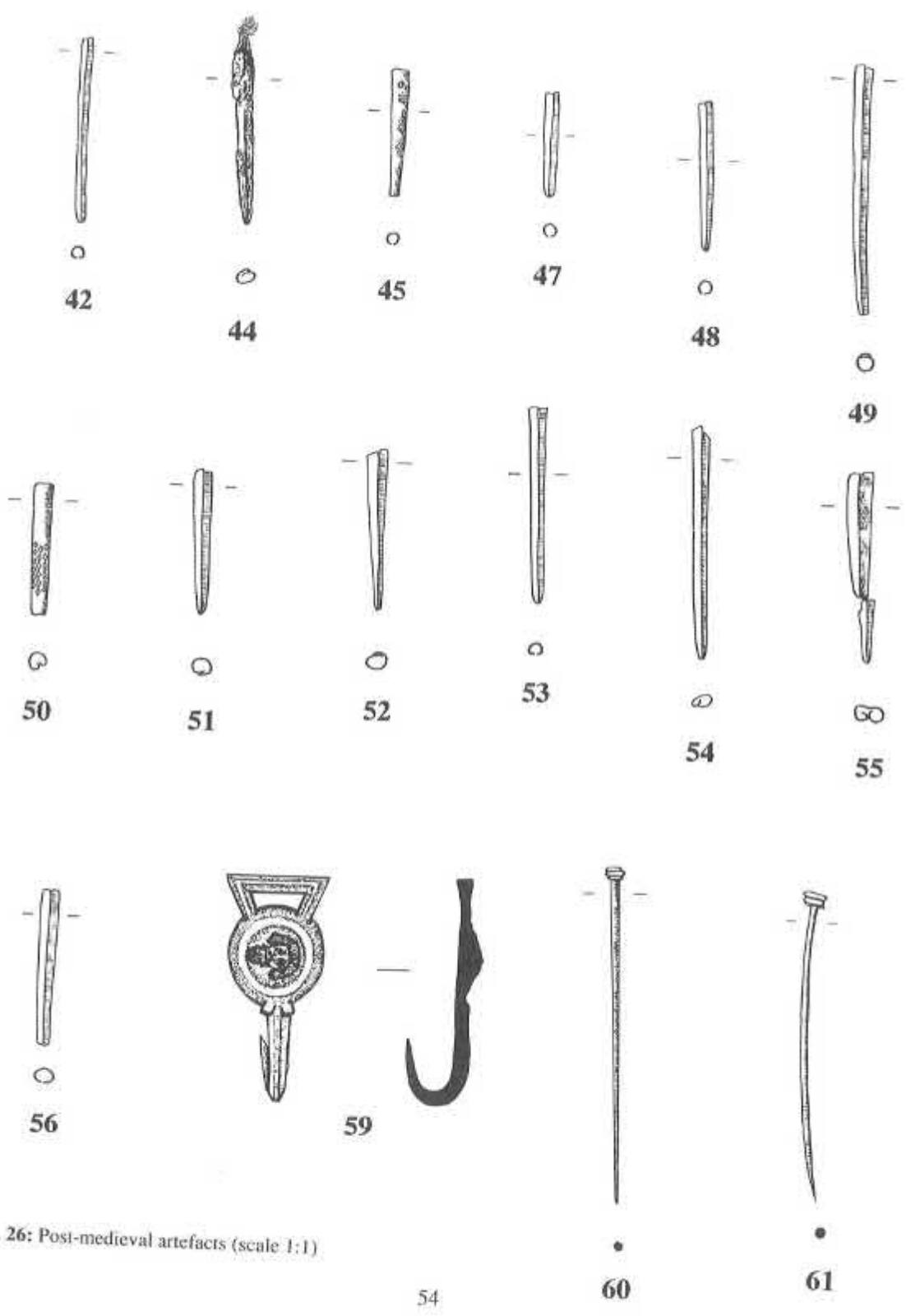


Fig. 26: Post-medieval artefacts (scale 1:1)

## Iron Implements

A variety of iron knife blades were recovered dated to the medieval and post-medieval period. A selection of bone handles were also recovered with evidence for attachment to iron implements, most likely knives. Many of the items recovered were in a fragmentary state and have not been illustrated.

64. **Knife blade** L 17.7cm w 2.2cm. Two joining fragments. 17th cent. pit fill (690).
65. **Knife blade** L 19cm w 2cm. 17th cent. pit fill (690).
66. **Knife blade** L 68mm w 22mm. Tip fragment from knife blade. Early 19th cent. well fill (506).
67. **Knife blade** L 33mm w 16mm. Small fragment. 13th cent. grave fill (800).
68. **Scissors** L 105mm w 80mm. Very corroded pair of scissors with eccentrically-set finger loops. 17th cent. tile dump (417).
69. **Key** L 114mm. Oval bow with solid stem and separately applied symmetrical bit, designed to open doors from both sides. Typologically this key belongs to the post-medieval period. (Unstratified)

## Jetton

70. **Brass reckoning counter** of 'Hans Schultes', c.1550–1574, Nuremburg, similar to N., No 29301 and 32166. **Obv.** A conventional single-masted vessel at sea, with a flag and streamer fore and aft. *Leg.* HANS.SHVLTES.OPEX. **Rev.** A lozenge of France-ancient shown as four lys; in each spandrel a trefoil between two annulets. *Leg.* HANS.SCVLTES.OPEX.

Immense numbers of cheap casting pieces emanated from Nuremburg from 1500 AD. By the end of the 15th century, Nuremburg was one of the most important distribution centres in Europe. These counters were struck in great numbers in Nuremburg during the 16th century, for use in France but are common in England. The identical legends on the obverse and reverse is unusual. The absence of 'NORNBE' (Nuremburg) is surprising and meaning of 'OPEX' uncertain (Barnard 1916, 208–228). (*SF* 1273; *context* 025, *unstratified*, *from watching brief in lift-shaft area*)

## Coins

71. Halfpenny; probably George III first issue (1770–75).
72. Halfpenny; George III third or fourth issue (1799, 1806–07)

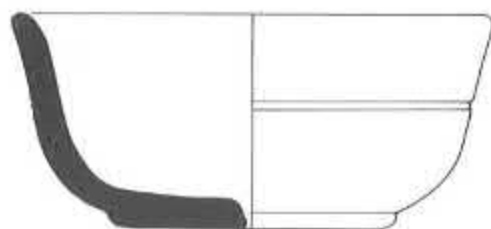
Both coins corroded, from cess pit 605

## Slate Pencils

73. L 55mm; both ends sharpened; early 19th cent. fill of cess pit (602)
74. L 42mm; one end sharpened, other end broken; early 19th cent. layer (464).
75. L 36mm; one end sharpened, other end broken; 19th cent. (422).
76. L 29mm; one broken end, other end blunt; 19th cent. (422).
77. L 37mm; One end sharpened, other end blunt; 19th cent. (422).

## Stone Bowl

- \*78. **Marble bowl** H 5.8cm Radius 7cm (18% of rim); shallow bowl, upright rim. Two incised lines run around body. Black Serpentine marble (Source is The Lizard, Cornwall); C19, layer (464). (We are grateful to Mr H Buckley for comments on this provenance).



78

Fig. 27: Post-medieval stone bowl (scale 1:2)

## Clay pipes by N Smith

The site produced a total of 671 clay pipe stems (5 stamped with initials) and 71 bowls; 37 (52%) had decorative rouletting around the outside rim. Thirty-nine bowls (55%) were complete enough for the form-type to be identifiable and 27 (69%) of these were also stamped.

Ten bowl types, based on Oswald's simplified general typology were identified, and three types based on his regional styles (M) typology (Oswald 1975). The most common types were Type 5 (18–19 examples, dating to 1640–1660), and Type 4 (10 examples, dating to 1600–1640), comprising 46%–49% and 26% respectively of all identifiable bowl types.

TYPE	3	(1580-1610)	2
TYPE	4	(1600-1640)	10
TYPE	5	(1640-1660)	18-19
TYPE	6	(1660-1680)	3-4
TYPE	9	(1680-1710)	2-3
TYPE	10	(1700-1740)	?1
TYPE	11	(1730-1760)	?1
TYPE	12	(1730-1780)	1-2
TYPE	14	(1820-1840)	?2
TYPE	17	(1640-1670)	2
TYPE	6(M)	(c.1700)	2-3
TYPE	8(M)	(c.1720)	?1
TYPE	12(M)	(1690-1730)	?1

There were 44 stamps in total but only 11 stamp variations (Table 3). The initials **TD**, although the most common mark (19 examples), with four different **TD** stamp forms, belong to an unknown pipemaker. Oswald (1975, 64) notes that the stamp is commonly found on pipes in the Aylesbury area and that the manufacturer is likely to have been local. Excavations at George Street (Jones 1983) and Castle Street (Moore 1979), recovered numerous similar examples. Typological dating indicates that 68% of our **TD** stamped pipes date to between 1600 and 1660, 26% are undatable, and one fragment possibly belongs to the mid eighteenth century.

Two stamps with the initials **HF** are attributable to a Henry Flooke, recorded in High Wycombe in 1692 (Oswald 1975, 161). Oswald's typology also dates at least one pipe to around 1700. A large number of similar initial stamps were found at the Vicarage Garden site, Berton (Dalwood 1986) and in Aylesbury at George Street, Castle Street and particularly at a kiln site in Whitehall Street (Moore 1979). The majority of the Whitehall Street pipes were stamped **HF** and typologically date to 1685-1715. It seems likely that Henry Flooke moved to Wycombe from Aylesbury in or just before 1692.

The single **TW** stamp most probably belongs to a Thomas Wingrave, living at Wycombe in 1706 (Oswald 1975, 161), and also a stem marked **THO WING ROVE**. Another stamp, **TI** (Type 5) is

likely to refer to Thomas Johnson, working as an apprentice to Henry Flooke in High Wycombe, 1692 (*ibid.*). The initials **RS**, marked in relief on each side of one heel, belong either to a Richard Sutton, 1717 or to Richard Sutton, apprentice, 1723 (Eton Parish Registers).


















Three different stamps, all bearing the initials **IW**, may be attributable to a Jeremiah Wetherby or Wetherley, mentioned in the Aylesbury Parish Registers, 1727, or perhaps to J Walsh, Eton Directories, 1847. (Wetherby may need deleting from Oswald's list of Buckinghamshire pipemakers as he was a Berkshire man later working in London; Moore 1979). On four occasions the **IW** was repeatedly marked along the stem, and three stamps were noted on the bases of heels. One bowl form was tentatively identified as a Type 12, 1730-1780. **IW** stamps were also recovered from the Vicarage Garden excavation, Berton.

Three **IS** stamps, two on the base of the heel and one with the initials on each side, may refer to a number of known pipe makers active in the Aylesbury area during the eighteenth and nineteenth centuries. One pipe is typologically datable to either 1690-1730 or 1700-1740, and the other to c.1720 or possibly 1820-1840 (Oswald 1975). Aylesbury Parish Registers record a John Smith in 1709 and in 1732, a John Sedall (Sedwell) in 1724 and 1730, and a John Sudell (or South or Southwell) in 1678 and again in 1730. A John Suthers, 1695, appears in the Aylesbury Quarter Sessions and a James Smith, 1872-1903 in the Eton Parish Register. Similar **IS** stamps were also found at the Vicarage Garden, Berton and at Castle Street and George Street in Aylesbury.

Five identical stamps incorporating the letter **A** belong to an unknown, though most probably local pipe manufacturer; four are typologically datable to 1640-1660, and one to 1660-1680. Of also unknown but probable local manufacture are two pipes bearing the initials **IR** (Type 4) on the base of the heel, and also two with **WP** (possibly one Type 12 or Type 14), marked in relief on each side of the heel. Similar **A**, **IR** and **WP** stamps were found at the Vicarage Garden excavation, Berton and at George Street, Aylesbury.



Table 3  
Pipe Stamps

Stamp	Location	No.	Pipemaker	Stamp	Location	No.	Pipemaker
	Base of heel	4	Unknown		Side of heel	2	Unknown
	Base of heel	2	Unknown		Base of heel	1	Thos. Johnson
	Base of heel	6	Unknown		Side of heel	1	Richard Sutton
	Base of heel	7	Unknown		Stem	1	Thos. Wingrave
	Base of heel	1	Thos. Wingrave		Base of heel	5	Unknown
	Base of heel	2	Unknown		Base of heel	2	Henry Flooke
	Repeated along stem	3	Unknown		Base of heel	1	John Smith/ Sedall (Sedwell or Sudell) or Suthers/South (Southwell) or James Smith
	Stem	1	Unknown		Side of heel	1	As above
	Base of heel	3	Unknown		Base of heel	2	Unknown

### Building material and fittings

A quantity of iron nails were recovered and undoubtedly many of these had been used in construction. Other objects such as large rivets and hooks probably represent door, window and wall fittings. These objects are fully described in the site archive but have not been discussed further here.

### Tile

Large quantities of flat, peg-hole tile, mainly in a fragmentary state, were recovered from medieval and post-medieval contexts across the site. For some contexts tile was a major component of the deposit, for example 417 and 527, and as such clearly testify to extensive phases of building and demolition in the area.

### Glazed floor tile

A total of 17 fragments (3.335 kg) were recovered. No complete tiles were found and most were in a worn state. Only two fragments of medieval stamped tile were recovered. Both had a orangey-red coarse sandy fabric and measured 18–21mm thick, with yellow and brown glaze. Both tiles were probably manufactured in Penn, Buckinghamshire, using the 'printing' method (Eames 1968, 16–22). It is uncertain whether these had been incorporated in a building on the Museum site, or had come from St Mary's Church.

Of the post-medieval examples, the earliest was recovered from a sixteenth-century context. Two different fabric types were noted:

1. A fine sandy fabric varying in colour from off-white to pink; thickness 22–30mm. Plain yellow-green glaze.
2. Red-orangey sandy fabric; thickness 24–29mm. Plain, dark, iron glaze.

Many of the post-medieval floor tiles retained their bevelled edges and pre-scored lines to aid breaking.

**Table 4**  
Quantification of ceramic and stone tile.

TYPE	COUNT	WEIGHT	GLAZED
Ceramic floor tile	109	11.875 kg	17
Ceramic roof tile	972	322.071 kg	34
Stone roof tile	7	2.175 kg	0

### Lead window kame

Seven lengths of lead kame were recovered, one section of which has an 'H'-shaped profile and has glass remaining *in situ* (433). That only a small amount of lead kame was recovered is not unusual owing to the care taken to recover the lead when demolition or reglazing occurred. A significant quantity of lead kame of 'U'-shaped profile came from 509 and 606. The presence of lead window kame in late eighteenth/early nineteenth-century contexts may relate to documented events associated with properties such as Ceely House.

### Glass

#### Beads

Six small globular glass beads, approximately 2mm diam, were recovered from the wet-sieved residues from the early nineteenth-century well 475. Five were reddish orange, and one blue. They are likely to have come from decorative beadwork on some item of dress, but such beads are also known to have been incorporated amongst the spangles of lace bobbins.

#### Window Glass

- 79 Crescent-shaped window panel (64x21x3.5mm) in yellow glass. Grozed edges and kame marks along all sides. Residual within 16th cent. cess pit.

Two complete and two near-complete glass panels and a further 12 fragments of window glass (weighing 44g) were considered to be medieval. The glass was in a fair state of preservation. Rectilinear panels appear to have been predominant, although one complete example was crescent-shaped. The glass was mostly colourless except for a single yellow panel and a small red fragment. They varied between 2mm and 4mm in thickness. The small size of the two complete glass panels (53x17mm and 64x21mm) and two near-complete panels (widths 18mm and 20mm), suggest that the medieval windows (from which they derived) were a composite of smaller glass panels. This was confirmed by three fragments which bore kame marks (and one the negative impression of kame). In addition all but three of the fragments had grozed edges.

All but one small fragment came from later residual contexts, no doubt reflecting the care with which glass had been recovered for reuse in the medieval period, and also that old medieval windows were being replaced in later centuries.

A further two hundred and one fragments of window glass (weighing 495g) came from post-medieval contexts. A significant group (36 pieces) came from deposits dating to the sixteenth and seventeenth centuries. These were mostly colourless fragments bearing no diagnostic marks, although four examples had grozed edges. They varied between 1.5mm and 2.5mm in thickness. The panels appear to have been either rectilinear or lozenge-shaped. The absence of complete panels

makes it difficult to assess their original size. Many of the glass fragments were up to 120mm in length, considerably larger than their medieval counterparts. A quantity of 'U'-shaped lead kame associated with this glass was probably used for bedding it into wooden frames.

A slightly larger collection of window glass (47 fragments) came from deposits dating to the Georgian period. There were two fragments of yellow glass (one example being *in situ* within lead kame), the remaining examples being colourless. No complete panels were present and only three examples had grozed edges. They varied between 0.5mm and 2mm in thickness. The panels appear to have been either rectilinear or lozenge-shaped. The glass shows a similar size range to the earlier post-medieval material. The presence of 'H' profile lead kame is evidence of the sub-division of a window, containing panels over 88mm in length.

The remaining window glass (98 fragments) came from Victorian and modern deposits, and was entirely fragments of colourless glass. The absence of grozed pieces may reflect the use of larger sheets than previously employed. Otherwise, the glass was unremarkable.

#### *Vessel Glass*

One hundred and forty five fragments of vessel glass (weighing 995g) were recovered. Most of the glass was fragmental and thereby unidentifiable beyond being of vessel type. The following were considered worthy of note. Two fragments of yellow vessel glass (of assumed medieval date) came from backfill above burial 801 and from pit 558 and may therefore be medieval. The rims of two yellow bowls of uncertain date were found in a seventeenth-century layer (417) and a colourless bowl rim came from a late nineteenth-century layer (422). These probably belong to large fruit or salad bowls.

The rim of a colourless drinking glass also came from the seventeenth-century layer 417, whilst the baluster stem (with teardrop) of a late seventeenth/early eighteenth-century drinking glass was found in an eighteenth-century layer 442. Fragments of a rummer, a decorated sherry glass, a tumbler and two drinking glasses (of uncertain use) all of col-

ourless glass and belonging to the late eighteenth/early nineteenth centuries were found in pits 507 and 604, both early nineteenth century in date.

#### *Bottle Glass*

Two hundred and thirty six fragments of bottle glass (weighing 9436g) were recovered. Most of this glass consisted of fragments of green wine bottle, the base and rim forms of which are chronologically diagnostic. Seven bottle fragments were dated to the mid to late seventeenth to early eighteenth centuries (436, 439, 459, 464 and 704). Twenty-two bottle fragments were dated to the mid to late eighteenth century (over 50% coming from 464 and the remaining examples from 226, 417, 436, 438 and 521). A single bottle fragment was found to date to the early or mid nineteenth century (439). Many of these fragments of wine bottle are considerably earlier in date than the deposits from which they derive. Some wines may have been cellared.

A number of small bottle fragments in thin green glass (of uncertain date) were considered to have been for personal use. These came from seventeenth or eighteenth-century deposits (459 and 713), and from nineteenth-century contexts (422 and 456), as well as a Victorian perfume bottle (521). In addition, there was a blue medicine bottle (455), a hamilton (cod?) bottle (521), and a pop bottle in colourless glass inscribed 'North and Randall, Aylesbury. 1904'.

Finally, there were fragments of two lamp chimneys in colourless glass of probable late eighteenth to early nineteenth-century date (521).

#### **Objects with evidence for print**

Two objects, both recovered from the wet-sieved residues of post-medieval cess pits, bore evidence (indirect in one case, direct in the other) for printing. The intrinsic interest of these pieces lies in the way in which the pits had provided an environment which was conducive to the preservation of such evidence.

80. Two small fragments of bone/horn, the maximum length of each being only 8.3mm long, bearing an inked inscription. Inspection by Mr C Whittick

(East Sussex County Council Senior Archivist) indicated that the inscription was legible as a mirror image. Mr Whittick writes "The larger piece reads *to*, at the top end and *and* at the bottom; ... the smaller piece reads *engag*. Unless one is dealing with some form of printing akin to lithography, which seems unlikely for a bone object, I suggest that the object lay in a pit alongside a piece of paper or parchment bearing print, and that the medium has perished, leaving the message, in reverse, somehow adhering to the object. The letters are very small indeed, and even if twice as big, were probably produced by printing rather than writing. With such small fragments it is difficult to give a date, but the general style of the letters seems to me to belong to 1800 plus or minus 40 or 50 years". From 19th cent. cess-pit fill 521, pit 475.

81. Over twenty small fragments of paper, the largest no more than 25mm across, and most of the fragments considerably smaller. No traces of ink or writing were visible. There were also eight small fragments of leather, presumably from a book binding. The largest of these was only 30mm across, and bore traces of stamped lettering in what appeared to be a gothic style, but the condition of the item did not permit a reading. From 16th/17th cent. cess-pit fill 701, pit 675.

## The Human Remains

by Dr Tony Waldron

Fifteen skeletons, in various stages of preservation, were recovered from this site, eleven from an 'early' phase and four from a 'late' phase. There was, in addition, some material from four other contexts. Each of the skeletons was examined in order to assign an age and sex to it using standard anthropological techniques (Workshop of European anthropologists 1980). Long bone and cranial measurements were taken in order to estimate height (Trotter 1970) and calculate skeletal indices, and, finally, a note was made of any pathological change (a catalogue of the skeletons and the disarticulated bone is given in the appendix).

### Age and sex

From the early phase, there were seven juveniles and four adult skeletons; all four skeletons from the late phase were adults (see table 5). Of the adults in the early phase, two were male, one was female and all were considered to be aged at least 45 years at

death. The fourth adult skeleton in this group could be neither aged nor sexed because it was too incomplete. The ages of the juveniles covered a wide age range; two were aged between 6 and 12 months, one between 2 and 3 years, one between 4 and 6, two between 8 and 10 and one between 10 and 15. The adults in the 'late' phase were all relatively young at the time of death; three were aged between 15 and 25 (two males and one female) and the fourth (a male) was aged between 35 and 45 at the time of death.

### Height

It was possible to estimate height from six of the adult skeletons, three from each phase, and the results are shown in table 6. The range of heights was considerable, from an extremely short male of only 1.41m to one of 1.82m (these heights correspond to 4'8" to 6'0" respectively). It is likely that both the individuals at each end of the range would have appeared unusual to their contemporaries. The very short individual (837) appeared to be normally proportioned although he had very short clavicles; the left was 108mm in length and the right 110mm; in most male skeletons the length of the clavicle is 140mm or more. There were no pathological changes which might have accounted for the very small stature and it seems likely that the short clavicles are no more than an incidental finding. There appears to be no syndrome in which short clavicles are associated with short stature in an otherwise normally proportioned individual.

### Indices

The cranial, femoral and tibial indices are conventionally calculated in any skeletal population. The cranial index relates the length of the skull to its breadth, while the femoral and tibial indices relate the width of the top of the shafts of these bones to their depth. (The significance of these indices can be found in Brothwell, 1981; 87-89).

There was only a single skull (772) for which the cranial index could be calculated and the result (78.1) fell within the mesocephalic range. Six femoral and six tibial indices were calculated; five of the six femoral indices fell within the platymeric range (<84.5) and five of the six tibial indices fell within the mesocnemic range ( $\geq 63.0$ ); the full set of results is given in table 7.

**Table 5**  
Age and sex of skeletons (main excavation only)

	'Early' Phase			'Late' Phase		
	Male	Female	Unknown	Male	Female	Unknown
Juvenile			7			
15-				2	1	
25-						
35-				1		
45+	2	1				
Unknown			1			

**Table 6**  
Estimated heights of skeletons (main excavation only)

Inhumation	'Early' Phase		'Late' Phase		
	Sex	Height (m)	Inhumation	Sex	Height (m)
813	Female	1.51±0.04	772	Male	1.56±0.03
837	Male	1.41±0.03	802	Male	1.82±0.03
885	Male	1.67±0.03	904	Male	1.74±0.03

**Table 7**  
Femoral and tibial indices of skeletons (main excavation only)

Inhumation	Phase	Femoral Index	Tibial Index
772	'late'	88.1	68.0
802	'late'	68.8	73.1
813	'early'	73.9	78.2
837	'early'	79.1	69.5
885	'early'	82.9	69.0
904	'late'	76.1	54.6

### Non-metric traits

There were a small number of non-metric traits in the group. Two of the skeletons (802, 885) had a metopic suture of the skull. In this condition, the suture between the two halves of the frontal bone remains unfused. It is relatively common, being generally found in about 8-10% of skeletal populations in this country (Brothwell; 92). One skeleton (837) had extra ossicles in the lamboid sutures, another condition which is seen frequently in skeletal populations. There is some suggestion

that the presence of these extra sutural bones may be under genetic control but other authorities consider that they are caused by environmental stresses and so their significance remains unresolved. (For further discussion see Brothwell; 93). Finally, a single skeleton (885) had bilateral os acromiale. In this condition the final epiphyseal element of the acromion process of the scapula fails to unite with the rest of the bone during adolescence. Until recently, this anomaly has been considered to be developmental in origin but further work has dem-

onstrated a possible occupational element in its expression (Stirland, 1987).

### Pathology

In such a small sample, and particularly with so many of the individuals dying at a relatively early age, it is not surprising that there was little pathology present. In none of the cases was it possible to determine the cause of death although for the youngest individuals, infectious diseases must have been likely causes. Unfortunately none of the common infectious diseases of childhood leaves any indicators on the skeleton. In the future it may be possible to extract DNA of common viral or bacterial pathogens from bone and if this proves to be the case our understanding of disease in the past will be greatly enhanced.

### Trauma

There was one skeleton (772) with a fracture. The right first metacarpal had been broken and healed with a small degree of shortening; the right bone was 47mm in length compared with the left, which was 49mm long. It is not possible to say how the fracture was caused, but it may have had some late effects as this man later developed osteoarthritis at the base of the fractured thumb. Osteoarthritis at this joint is very common but since trauma is one of the factors which is known to cause this condition, it seems likely that it was causative here.

In one other skeleton (885), the first and second phalanges of the right third finger were fused. There was no evidence of infectious or joint disease and the most probable cause was an injury to the finger in which there was bleeding into the distal interphalangeal joint with subsequent calcification of the blood clot and fusion of the joint.

### Osteoarthritis

Osteoarthritis (OA) is by far the most common disease found in the skeleton (Rogers and Waldron 1995) but as it is highly age-related, it is not surprising that, apart from the skeleton with OA of the thumb base which was trauma-related, there was only one skeleton with the disease. This skeleton (885) had widespread disease affecting the right

sterno-clavicular joint, the left first metacarpophalangeal joint, the left first metatarso-phalangeal joint and the facet joints of the second to sixth cervical vertebrae.

### Degenerative disc disease

Degenerative disc disease is another extremely common condition which increases markedly in frequency with increasing age (Rogers and Waldron; 26). It occurs most often in the cervical and lumbar spinal levels and in contemporary populations causes a great deal of morbidity. In the skeleton, the condition is noted by the presence of pitting on the superior or inferior surfaces of the vertebral bodies, often associated with the presence of marginal osteophytes. There was a single skeleton in this group (885) with degenerative disc disease affecting the third and fourth cervical, and the sixth cervical to second thoracic vertebrae.

### Osteophytes

Osteophytes are outgrowths of new bone which occur typically around the margins of a joint. They may be associated with other conditions such as osteoarthritis, or they may appear independently of any disease (Rogers and Waldron; 21-26). The margins of the vertebral bodies are common sites for osteophytes to develop and they were present in three of the skeletons here. In one (772), osteophytes were present on the fourth to twelfth thoracic vertebrae; in one (837), on the eighth to eleventh thoracic, and in the third (885) on the eighth to twelfth thoracic, all the lumbar vertebrae and the first sacral segment.

### Schmorl's nodes

Schmorl's nodes are caused by the protrusion of part of the nucleus pulposus of the intervertebral disc into the endplate of the vertebral body. The defect in the endplate, which is readily detected in the dry bone, is caused by the pressure of the invaginated part of the disc. Schmorl's nodes generally appear first during childhood and are extremely common in skeletal material. During life they usually cause no symptoms although they are sometimes implicated in the aetiology of back ache in some children (Rogers and Waldron 1995, 27). Only a single skeleton from the main excava-

tion was found with the condition (722, where the eighth to eleventh thoracic vertebrae were affected), and one from the watching brief (010; second to fourth lumbar vertebrae).

### *Spina bifida*

Spina bifida occurs when the neural arches of the sacrum fail to fuse. The failure of fusion may affect one or all of the sacral segments and failure of the lowermost one or two segments is normal (the resultant defect is referred to as the sacral hiatus). The failure of fusion *per se* is not associated with symptoms although when there are associated defects in the development of the spinal cord, very severe effects may be noted and would probably be apparent in the skeleton, manifesting themselves as retarded development of the legs. When associated with no other abnormalities it is probably better to refer to the condition as spina bifida occulta but this usage is not generally applied. Among the present series of skeletons, one (802) was found with spina bifida and it is almost certain that the individual was completely unaware of it during life.

### *Other conditions*

One skeleton (802) had a swelling in the upper end of the right tibia but no cause for this abnormality could be found.

### *Dental disease*

Three of the skeletons showed evidence of dental disease. One (761) had a full set of teeth, except for the right lower third molar which had failed to erupt, but had caries of the right lower second molar. Another skeleton (837) had extensive dental disease. Four teeth (the left upper second premolar, the left upper second molar, and the right lower first and second molars) had apical abscesses and, in addition, the left lower second and third molars had been lost during life, presumably also as the result of dental disease. In the third skeleton (885) only the mandibular teeth were extant and of these, seven (the left and right incisors, the right second premolar and both first molars) had been lost during life, either from primary dental disease or from gum disease. Many years ago, Wells (1964; 119) suggested that tooth loss in early populations may have

been the result of scurvy but although it is likely that this disease was common during those periods when fresh fruit and vegetables were in short supply, there has been little evidence to support this view. (For further discussion, see Waldron 1994).

### **Human bone recovered during the watching brief**

**003** This was a robust male skull with completely intact dentition. Judging from the dental wear and the state of fusion of the cranial sutures, the individual had been aged between 25 and 35 at the time of death. The cranial index was 72.7 putting it into the dolichocephalic (round-headed) range.

The hyoid bone and the first three cervical vertebrae were also present. The atlas and axis certainly belonged with the skull but the third vertebra was from a different skeleton. There were a number of supernumerary ossicles (wormian bones) in the right lamboid suture.

There were signs of an old wound in the posterior part of the left parietal bone. The wound was about 29mm in length and lay with its long axis approximately 45° to the sagittal suture and its posterior pole about 23mm from the sagittal suture and 10mm from the lamboid suture. The anterior part of the wound was closed but there was a defect posteriorly. The bone showed signs of remodelling suggesting that it had been sustained a considerable time before death, and there were no signs of infection.

**010** Virtually intact inhumation, lacking only the left ulna, left pubic bone, right patella and some of the small bones of the hands and feet. The proximal clavicles and the iliac crests were unfused. The skeleton was that of a female aged between 15 and 25 years at the time of her death. Her height, as determined from the combined length of the femurs and tibias was  $1.60 \pm 0.04$ m (approximately 5'3"); the femoral and tibial indices were very similar on the right and left and the mean indices respectively 81.4 and 69.9.

A number of teeth had been lost after death, but there were no signs of disease in those which remained.

The only pathology found in the skeleton was the presence of Schmorl's nodes in the second to fourth lumbar vertebrae.

#### 012 Small fragment of adult skull.

**Unstratified** Part of a skull found in the vicinity of 003 consisted of substantial parts of the right frontal and temporal bones with part of the roof of the orbit; from an adult, probably female.

#### Conclusions

This was a small group of skeletons with no outstanding features other than the presence of one remarkably short male. This skeleton was further distinguished by having unusually short clavicles but it was otherwise normally proportioned and there was no obvious explanation for the short stature. The skeletons of the mature adults showed some pathology but there were no diseases that would not be expected and none that was unusual.

The head wound in skeleton 003 was presumably caused by a weapon of some sort, but the individual survived for a considerable time after it had been inflicted as there was evidence of a good deal of remodelling. There were no signs of infection around the wound which suggests that it received some sort of medical treatment, sufficient at least to ensure good healing.

#### Catalogue

In the catalogue, the methods used to sex and age the skeleton are shown in brackets; the height is shown (in metres) and the bone(s) used for the calculation.

- 761 Partial skeleton. Female (skull); 15-25 (epiphyseal fusion).
- 772 Substantially complete robust skeleton. Male (pelvis, skull); 35-45 (dental wear, pubic symphysis, cranial sutures);  $1.56 \pm 0.03$  (both femurs and tibias).
- 801 Almost complete skeleton of a juvenile; 8-10 (dental eruption; long bone lengths).
- 802 Substantially complete skeleton, but lacking left shoulder girdle and arm and many bones of the hands and feet. Male (pelvis, skull); 15-25 (epiphyseal fusion);  $1.83 \pm 0.03$  (right femur and tibia).

- 808 Lower limbs of juvenile; 10-15 (long bone lengths).
- 813 Lower half of adult skeleton. female (pelvis); 45+ (pubic symphysis);  $1.51 \pm 0.04$  (both femurs and tibias)
- 815 Upper half of juvenile skeleton; 4-6 (dental eruption).
- 825 Substantial skeleton of infant; 6-12 months (dental eruption; long bone lengths).
- 837 Virtually complete adult. male (pelvis, skull); 45+ (dental wear, pubic symphysis, cranial sutures);  $1.41 \pm 0.03$  (both femurs and tibias).
- 844 Almost intact juvenile. 2-3 (dental eruption, long bone lengths).
- 846 Substantial infant skeleton; 6-12 months (dental eruption, long bone lengths).
- 849 Partial juvenile; 8-10 (dental eruption).
- 885 Virtually intact post-cranial skeleton. Male (pelvis); 45+ (pubic symphysis);  $1.67 \pm 0.03$  (right femur).
- 904 Lower half of adult with right arm and shoulder girdle. Male (pelvis); 15-25 (epiphyseal fusion);  $1.74 \pm 0.03$  (left femur and tibia).
- 905 Incomplete adult skeleton.

#### Disarticulated bone:

- 765 Adult skull fragments; single incisor.
- 814 Infant metatarsals; femoral head epiphysis
- 843 Adult cervical vertebrae, metacarpals, proximal phalanges and a single rib fragment.
- 899 Juvenile rib and vertebrae fragments, left ilium, left scapula, manubrium, left clavicle and left radius and ulna.

#### Animal Remains

by Peta Sadler

#### Summary

A total of 1,637 bones were examined, of which 944 have been identified (Tables 8,9 and 10). Evidence is found for the endurance of a primitive feature in a seventeenth-century pig skull, for some 'improvement' of sheep for mutton production and for keeping fowl in town.



## Quantities

The breakdown into periods is as follows:-

Iron Age	69 bones	45% identified
'Dark earth'	377 bones	54% identified
C12-13	147 bones	56% identified
C14	586 bones	55% identified
C17	396 bones	72% identified
C19	62 bones	27% identified

## Methods and Material

Measurements were taken using dial callipers (Mitutoyo No 505-633) range 150mm with dial gradations of 0.05mm. Where these could not be used, a measuring box or a flexible tape was employed and the measurements were taken to the nearest 0.5mm. The points of measurement used are those described by von den Driesch (1976) unless otherwise stated.

The unidentified bone contains all ribs and fragments of vertebrae too incomplete to identify with certainty and is divided into five groups; cattle-sized/large mammal, sheep-sized/medium mammal, small mammal, unidentified bird, and unidentified fish. The totals for identified bone for each species has been adjusted before inclusion in Tables 8 and 9 to avoid bias when determining the proportions present. Where two or more bones from the same context fit together (i.e. first, second, and third phalanges) they have been counted as one. In the same way, groups of teeth with broken fragments of mandible or maxilla have been counted as one if they fit together. This has most affected the numbers in two fourteenth-century contexts; 25 bones from two feet from foetal pig (context 701) and 10 dog bones from a single skeleton (context 698) have each been counted as one.

The minimum number of individuals of each species in Tables 8 and 9 was assessed using ageing data as well as the number and symmetry of each bone element. The minimum number of each bone was calculated using a modified version of the six zones per bone (three for scapulae and small bones) devised by Levitan for his BONEREC program (unpublished).

Withers heights were calculated for cattle using the regression factors of Fock (1966); for sheep those of Teichert (1966) were used; horse heights

used Kiesewalter (1888) (all quoted in von den Driesch & Boessneck 1974 p333, p336 and 339).

The Iron Age bone is from three pits and three gullies; five contexts of seven have had samples from them sieved. Formation of the 'dark earth' material may have been initiated within the Saxon period, but contains much medieval material; it was recovered from a dark soil layer spread across the site and none was sieved. The twelfth or thirteenth-century bones are from two pits. The smaller has only one context and one sieved sample, and is unusual in that nearly all the remains are from domestic fowl; also recovered was a compacted piece of cess (white - chicken droppings?) with impressions in the surface of feathers, and pits which may have been left by two fly puparia 7.0 x 3.4mm and 6.2 x 2.7mm. Most material dated to the twelfth to thirteenth century was recovered from pit 856. Two of the five layers had samples sieved. The fourteenth-century material is all from one pit. Of the hand-recovered material, three of ten layers show evidence of cess, and two of the five sieved samples have burnt bone in them. Burning is most common in the seventeenth century contexts, being present in four of the five hand-recovered layers, one of which also had a sample sieved. (22 burnt metapodial shaft fragments and 200 scraps of burnt bone from one context have not been included in the fragment numbers). A bone from the sieved sample from a sixth context has some cess on it. The small number of nineteenth-century bones are all from one sieved sample from a pit.

## Species Present

Sheep and goat bones are often difficult to separate. Clutton-Brock (1990) found that in her sample of Soay sheep, there were seven certain differences which appeared only in the sheep skeletons and never in the goat. Unfortunately none of these were present in this material and the identification of goat depends on features which can, occasionally, appear in sheep material. The metatarsus was identified on the basis of the difference in the indices of the diameter of external trochlea of the medial condyle over the diameter of the verticillus of the same, which in Clutton-Brock's sample of Soay sheep had a minimum of 60.6%, whereas there was a maximum of 60.7 for goat. The bone in question

**Table 8**  
Mammals represented

Period	IA			"DARK EARTH"			C12/13			C14			C17			C19		
	<i>Frag.</i> <i>No</i>	<i>%</i>	<i>Min.</i> <i>No</i>	<i>Frag.</i> <i>No</i>	<i>%</i>	<i>Min.</i> <i>No</i>	<i>Frag.</i> <i>No</i>	<i>%</i>	<i>Min.</i> <i>No</i>	<i>Frag.</i> <i>No</i>	<i>%</i>	<i>Min.</i> <i>No</i>	<i>Frag.</i> <i>No</i>	<i>%</i>	<i>Min.</i> <i>No</i>	<i>Frag.</i> <i>No</i>	<i>%</i>	<i>Min.</i> <i>No</i>
Cattle	4	31	1	53	31	4	10	37	2	52	47	9	48	19	6			
Sheep				23			4			13			63					
Sheep/goat	8	61	3	64	52	9	6	37	2	19	29	5	127	75	18	2	40	1
Goat				2									1					
Pig	1	8	1	28	17	3	7	26	2	*27	24	4	16	6	3	3	60	1
Horse				7	4	1							1		1			
Dog				4	2	1	1	3	1	*2	2	1	2		1			
Cat				1		1	1	3	1									
Red Deer	1	4	1															
Roe Deer				1		1	1	3	1									
Fallow Deer							1	3	1				1		1			
Rabbit										1		1	3		1	4	40	1
Hare				1		1												
Water Vole	6	29	2	1		1				1		1						
Vole	2	9	1				1	3	1									
Mouse	1	4	1							1		1				1		1
House Mouse	1		1															
Rat																1		1
Sub-total	24			185			32			116			262			11		

**Table 9**  
Birds and Amphibia

Period	IA			"DARK EARTH"			C12/13			C14			C17			C19		
	<i>Frag.</i>	<i>%</i>	<i>Min.</i>	<i>Frag.</i>	<i>%</i>	<i>Min.</i>	<i>Frag.</i>	<i>%</i>	<i>Min.</i>	<i>Frag.</i>	<i>%</i>	<i>Min.</i>	<i>Frag.</i>	<i>%</i>	<i>Min.</i>	<i>Frag.</i>	<i>%</i>	<i>Min.</i>
	<i>No</i>		<i>No</i>	<i>No</i>		<i>No</i>	<i>No</i>		<i>No</i>		<i>No</i>	<i>No</i>	<i>No</i>		<i>No</i>	<i>No</i>		<i>No</i>
Domestic Fowl	2	7	1	5	3	3	19	34	3	7	5	2	6	2	2	1	8	1
cf Dom. Goose				4	2	1	1	2	1	9	7	2						
Goose	1	3	1							1		1						
Mallard	1	3	1	1		1												
Pigeon/ Dove													4	1	1			
Rook/ Crow													1		1			
Jackdaw							3	5	2									
Frog	1	3	1				1	2	1	2	1	1				2	15	1
Toad	1	3	1															
Sub-total	6			10			24			19			11			3		
<b>Total</b> <b>(all species)</b>	<b>30</b>			<b>195</b>			<b>56</b>			<b>135</b>			<b>273</b>			<b>14</b>		

Percentage figures are based on the total of all identified bones (except fish) from each period.

**Table 10**  
Fish species represented (Numbers of fragments).

Period	IA	'DARK EARTH'	C12/C13	C14	C17	C19
<i>Species</i>						
Thornback	<i>Raja clavata</i>		2	1		
Eel	<i>Anguilla anguilla</i>		8	17	5	1
Herring	<i>Clupea harengus</i>	1	14	117	3	
Cod	<i>Gadus morhua</i>			2		
Haddock	<i>Melanogrammus aeglefinus</i>			3		
Whiting	<i>Merlangius merlangus</i>			6		
Ling	<i>Molva molva</i>			1		
Cod family	<i>Gadidae sp.</i>	1				
Hake	<i>Merluccius merluccius</i>			1		
Plaice	<i>Pleuronectes platessa</i>			1		
Halibut	<i>Hippoglossus hippoglossus</i>			1		
Flatfish				2		
<b>Total</b>	1	1	24	150	10	1

has an index of 60.4. Boessneck (1969) states that there was an overlapping area between 59, the smallest figure for sheep and 62.5, the largest for goat. The nearest index from other metatarsals in the material under examination for this report is 62.8, all others being even larger, going up to 68.4%. The medial epicondyle of one humerus is cut off obliquely, which is goat-like but Clutton-Brock (ibid.) found 2 of 42 sheep intermediate on this point. Likewise one radius has no ledge on the proximal lateral edge, i.e. goat-like, but Clutton-Brock found it absent in 1 of 43 sheep.

The rat? bone in Table 8 is an immature metapodial, possibly Mt2, which is the size of either rat or water vole.

#### The condition of the bone.

In contrast to the bone from the twelfth to thirteenth century onwards, which was all recovered from pits, the material from the Iron Age was partly recovered from gullies, and the 'dark earth' material came from a dark soil spread across the site. One would expect this material to have received rougher treatment resulting in a higher number of loose teeth. The number of loose teeth recovered from the dark earth contexts could probably have been higher, but no samples were sieved. The results are shown in table 11.

Bones which fit together and were presumably articulated when disposed of indicate which contexts contain primary deposits. There are two 'dark

**Table 11**  
Loose teeth quantification

IA	5 of 69 fragments	7%	31 identified	16%
'dark earth'	32 of 377 fragments	8%	202 identified	16%
C2-13	2 of 147 fragments	1%	83 identified	2%
C14	10 of 586 fragments	2%	325 identified	3%
C17	2 of 396 fragments	0.5%	286 identified	1%
C19	2 of 62 fragments	3%	17 identified	12%

earth' examples (cattle first, second and third phalanges), two twelfth or thirteenth century, six in the fourteenth century and one seventeenth century.

Bone coated in or marked by cess is likely to have been deposited when the pit was in use, or very soon after. Other bone may have been thrown in when the pit was no longer used for its original purpose, but as a convenient place to put rubbish. No Iron Age bone had cess on it; one example from the "dark earth" material did, but almost every twelfth or thirteenth-century context (4 of 5 in pit 856) contained some evidence of cess. The fourteenth-century pit had cess in only three layers out of thirteen, and the seventeenth-century pit had evidence of cess in only one of six contexts. That the fourteenth-century pit had at one point been used as a rubbish dump is confirmed by the recovery of a substantial part of the skeleton of a dog.

Seventeenth-century material showed the most evidence of butchery (a high 26% of cattle-sized fragments and 19% of identified bone), followed by the "dark earth" remains (17% of identified bone). Two seventeenth-century bones, both tibia, have saw marks.

Gnawing does not seem to have been an important factor in the destruction of bone from these contexts; 8% of the "dark earth" bone was the highest figure. As these bones were the only remains spread across the site, and therefore available for gnawing by dogs and rodents (one sheep/goat tibia), this is not a surprise. Among the seventeenth-century bones, two, a cattle astragalus and a pig humerus, were gnawed by rodents.

The percentage of burnt bone was as follows:

Unidentified	IA%	Saxon%	C12-13%	C14%	C17%
Cattle size	0	1	15	9	5
Sheep size	17	3	0	15	10
Small	8	0	0	1	0
Identified	3	1	0	1	29

The figure of 15% burnt cattle-sized fragments in the "dark earth" period is produced by only two bones (of 13) being burnt. The figure of 10% for sheep-sized remains from the seventeenth century is a minimum, as there was further burnt bone which was so small it was not included in the

numbers but is mentioned in the section Materials and Methods.

One other feature of the seventeenth-century bone is that 2% of the medium sized mammal fragments and 3% of the identified bone had green stains on them.

### Anatomical analysis of the main domestic species.

So few bones were recovered from the Iron Age, the twelfth to thirteenth century and the nineteenth century that little can be said about the proportions of the parts of the animals recovered. The proportions for the other periods are given below in Table 12.

The high value for head remains of "dark earth" cattle and sheep is largely attributable to mandible and teeth remains, whereas the high figure for fourteenth-century cattle is produced by the recovery of many skull fragments, seven with horn cores. The percentage of hind limb bones, which provide good quality meat, increases as time passes for all three species. The figures for seventeenth-century sheep head, forelimb, and hind-limb are all lowered by the massive number of lower limb bones. These sheep remains, 83% of which are from the head and lower limbs, are not likely to be exclusively the refuse from consumption and suggest an industry nearby.

### Relative frequency of the main domestic species. (Fig 28)

The number of identified bones upon which the figures for the Iron Age, the twelfth and thirteenth centuries and the nineteenth century are based are so small that they have not been included. The proportions of the species in the "dark earth" period are similar to those in the Late Saxon period at Walton Road Stores and the fourteenth-century results are similar to those for the medieval period at the same site.

### Cattle

#### Age structure.

Using all the information available on dental eruption and wear, age class of horn cores, and epiphyseal fusion of the long bones, the following

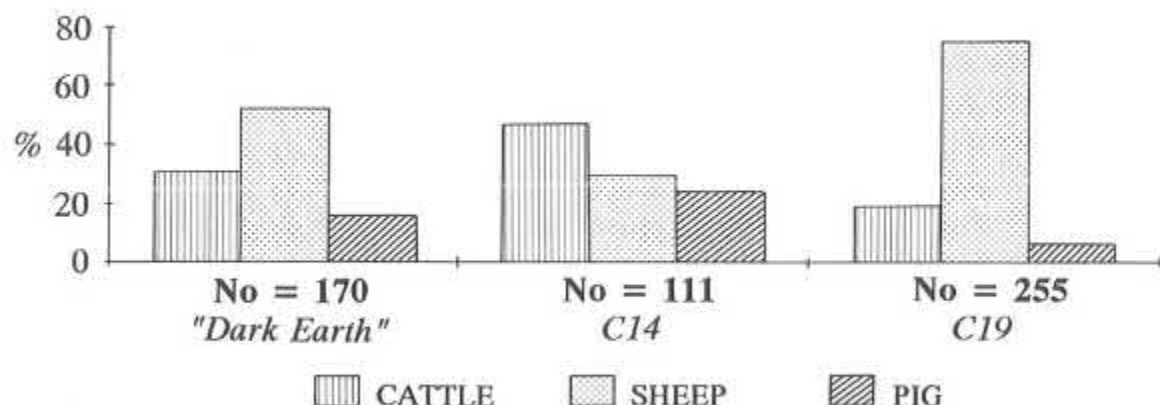


Fig. 28: Relative proportions of main domestic species

**Table 12**  
Proportions of the parts of the skeleton.

Part	Dark Earth			C14			C17		
	Cattle	Sheep	Pig	Cattle	Sheep	Pig	Cattle	Sheep	Pig
<b>Head</b>									
No. frags	18	34	6	19	5	8	8	35	5
% of ident.	34	38	21	37	16	30	17	18	31
<b>Forelimb</b>									
No. frags	12	22	6	8	11	3	11	11	4
% of ident.	23	25	21	15	34	11	23	6	25
<b>Hindlimb</b>									
No. frags	6	20	7	10	9	7	10	14	5
% of ident.	11	22	25	19	28	26	21	7	31
<b>Lower limb</b>									
No. frags	16	12	9	9	6	9	18	125	2
% of ident.	30	13	32	17	19	33	38	65	13
<b>Total ident.</b>	<b>53</b>	<b>89</b>	<b>28</b>	<b>52</b>	<b>32</b>	<b>27</b>	<b>48</b>	<b>191</b>	<b>16</b>

can be deduced:

Iron Age	1 more than 2 years.
Dark Earth	1 neonatal, 1 × 3–6 months old, 1 less than 3 years but older than 2.5 years, and 1 about 3 years old.
12th–13th cent.	1 immature animal and 1 more than 4 years old.
14th cent.	1 neonatal/foetal, 1 about 2.5 years, 2 × 3–7 years old, 1 × 6–8 years old, 2 × 7–10 years old, 1 about 10 years old and 1 more than 10 years old.

17th cent. 1 neonatal, 2 × 4–5 months old, 1 about 2 years old, 1 × 3–3.5 years old, 1 more than 4 years old.

#### Cattle size and evidence of sex.

No bones are complete enough to allow an estimate of withers height to be calculated. The measurements it was possible to take show average size animals with a possibility that they increased slightly in size in the seventeenth century.

**Table 13**  
Cattle age estimates from horn cores

<i>Circum.</i>	<i>Greatest diameter</i>	<i>Least diameter</i>	<i>Length of outer curve</i>	<i>Age class and comments.</i>
137.0	48.3	39.2		Groove in horn core. Young adult. Shape of bull or ox
129.0	40.3	34.6	125	Almost straight horn core with circular cross section. Adult. Small-horned cow? Groove c. 30mm long.
147.0	54.5	36.5	174	Short-horn. Adult - old adult. Oval cross section and tip pointed. Bull
127.0	44.3	35.9	125	Young adult, small-horn bull.
127.0	45.0	35.0	120	Old adult, but bone of horn core not thick - possibly cow.
147.0	50.2	39.8	134	Adult short-horn bull.

Six horn cores from the fourteenth century could be measured and the animals' age estimated following the system in Armitage (1982).

#### Pathology

Three "dark earth" bones show signs of disease or abnormality. An ulna fused to the distal radius has a pit in the medial surface 20.0 × 11.2 × 10mm deep. This is most likely due to a bone cyst which, owing to pressure from the surrounding tissue, has also extended into a groove going up the bone. A metacarpal has the area which would have been in contact with the fifth metacarpal raised, and lastly a second phalanx has a depression of type 1 on the distal articular surface (Baker 1980, 110)

There is calculus on two "dark earth" teeth; on one it is metallic.

#### **SHEEP**

##### Age structure and evidence of sex.

Only six mandibles had all three molars in place and undamaged, so to maximise the information from dental eruption and wear, and to give at least a guide as to the age range of the animals, a table (15) was drawn up using Grant 1982 p100-101.

What Table 15 does not show is that the youngest seventeenth-century material is two foetal metacarpals (one with a length, without an epiphy-

sis, of 60.6mm) and two foetal metatarsals and one of each very immature (the metacarpal measures, without an epiphysis, 78.5mm). The bones which are possibly goat add a "dark earth" distal humerus - fused, and a fused proximal radius, distal unfused, and a seventeenth-century fused distal metatarsal. The distal radius can be very late fusing - more than four years.

The "dark earth" bones show that the majority of the animals were not killed until they were more than 3 years, which confirms the dental evidence. One sheep pelvis is female shape, and one is male or castrate, while one sheep/goat pelvis is female or castrate. One skull is heavily built, and although the horn core is not present, it is likely to have carried a large horn (i.e. male). Clutton-Brock (1990, 18) states that the size of the horn core has a direct relationship with the degree of robustness of the cranial region of the skull. The depth of the cranium at the frontal suture is 14.7mm and the distance from the frontal suture to the base of the horn core is about 20mm. This skull has been split sagittally.

In the fourteenth century the fusion data shows at least one animal killed before about 2 years whereas the youngest animal using the dental evidence is 3-6 years old, but the sample of sheep/goat bones from this period is rather small (only 32).

The seventeenth-century sheep were killed or died over a wide age range (using either the dental or the fusion evidence). The following evidence comes from fifteen skull or horn-core remains. A skull has small bump in place of horn cores, but six cut marks at the base of the knob suggest that a small horn may have been removed. A horn core with the basal part missing is still complete enough to suggest a young male (Clutton-Brock 1990, 17). Two male horn cores, both with the base chopped through. Four skulls have been split sagittally.

#### Sheep size.

There were too few measurements of any one type to make it possible to compare the size of the sheep/goats in the different periods. All measurements fall into the normal range for sheep of these periods. Five lower third molars from the "dark earth" animals give a larger mean figure for length and width than nine seventeenth-century specimens.

The withers height of one "dark earth" animal was estimated from a metapodial, and gives the very small figure of 468mm. The bone is mature but the cortex is not very thick, and one would think malnutrition was a likely cause but according to Moran (1994), 'The bones of animals on a low level of nutrition tend to be long and slender, rather than stunted in length.' However, Davis (1996, 601) discussing a group of Shetland ewes from a single flock, some of which the owner had judged to be in "poor" condition, says that, 'It therefore seems probable that the "poor" ewe skeletons are somewhat smaller than those of the "average" and "good" ones.'

From the fourteenth-century material only one bone, a radius, is complete enough to give a 'greatest length' measurement and this gives a withers height of 552mm.

The more numerous seventeenth-century metacarpals and metatarsals give 14 withers heights ranging from 527 to 631mm with a mean of 570mm. A summary of the measurements of these bones is given in table 14.

The shape of the metacarpals was compared with those from 26 unimproved Shetland ewes (Davis 1996) whose mean was taken as the stand-

ard. The log ratio of each measurement from this site was plotted, with the standard being 0. This showed that nearly all the metacarpals are larger in every respect than the Shetland sheep, with the measurement SD (smallest breadth of the diaphysis) being the most different. As the Aylesbury sample is unlikely to be all ewes, some of the difference may be from the inclusion of males and/or castrates.

The means of the measurements of the Aylesbury metacarpal sample are shown compared using the log ratio to the Shetland standard (Davis 1996), the Soay and the Clun Forest standard (O'Connor 1995) and the results are below.

	<i>Shetland</i>	<i>Soay</i>	<i>Clun Forest</i>
GL	+0.019	<b>+0.002</b>	-0.050
BFp	<b>+0.018</b>	+0.048	-0.074
BFd	<b>+0.025</b>	+0.052	-0.067
SD	<b>+0.036</b>	+0.043	-0.109

The closer the number is to zero, the better the match with the standard. The closest are in **bold type**. Plus numbers are larger than the standard and minus numbers are smaller.

The only other bone with enough measurements to allow a comparison is the distal tibia. The few width and depth measurements were plotted and the results shown in Figure 29. Five of the width measurements are similar to, if slightly larger than, the Shetland ewes, with one outlying result. Three distal depth measurements are similar to the standard, but two figures are smaller than it, and there are two outlying results on the larger side. Unfortunately the results are too few to make much of, but it is possible that the largest measurements outside the group are showing a sexually related difference. Until more work is done measuring animals of known sex, this can only be conjecture.

The metacarpals were next compared with five samples from York (O'Connor 1995) dating from the late fifteenth to the early eighteenth century and comparative data from samples of Soay and Clun Forest sheep. In this paper O'Connor is attempting to find evidence of the general increase in the size of post-medieval sheep which is reported in docu-



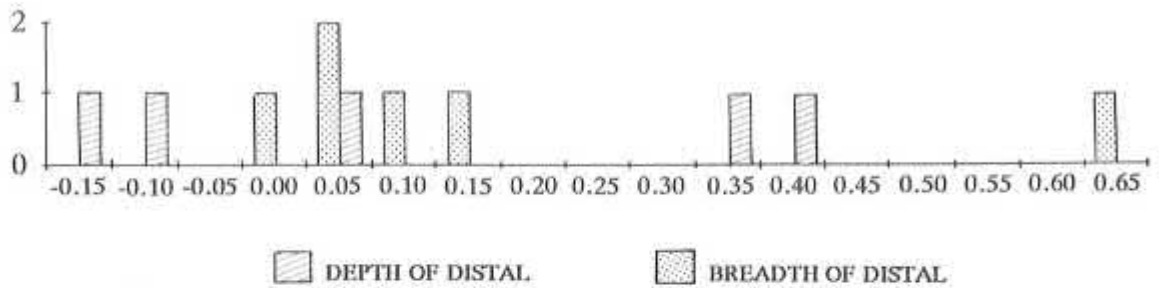


Fig. 29: Log ratio of sheep tibia, compared with Shetland standard

mentary records of this period. It must be noted that the proximal measurement of the Aylesbury metacarpals is the greatest width of the articular surface and not the greatest width of the proximal end of the bone, which may be a little larger in some cases.

The length of the bones was less than most of the sample, equalling the sample from the early sixteenth century. The proximal breadth fitted very well into the range of increasing size, as did the distal breadth, but the 'smallest shaft width' measurement (SD) is larger than any but the nineteenth century material. O'Connor (1995, 84) states that 'relatively short and thick metapodial bones may be typical of a fast maturing population', i.e. showing signs of improvement.

#### Pathology

The "dark earth" distal humerus identified as goat has a depression on the articular surface similar to that often seen in cattle phalanges. (See Cattle pathology).

There is slight extra bone growth forming a lip on the medial edge of the proximal surface of a fourteenth-century metacarpal.

A seventeenth-century metatarsal has exostosis on the plantar medial surface measuring  $6.5 \times 1.7$ mm. There is a pit in the end of the lateral epicondyle of a humerus, with extra bone growth on the crest on the caudal epicondyle and a porous area  $3.6 \times 2.5$ mm in the central constriction. A metacarpal has the lateral proximal 5th metacarpal fused on, and another has an area of exostosis on the mid diaphysis.

#### Dental pathology and abnormality.

The dentine in an Iron Age sheep loose upper M2 is dark brown.

A "dark earth" lower third molar has a hole in the centre of each cusp, lingual of the fundibulum, and is covered in calculus. A mandible also has calculus on all the teeth and intradental attrition affecting the P4 and M1.

A fourteenth-century maxilla has black dentine in all the teeth. The alveolus for P2 is very small and the tooth was possibly lost ante-mortem. A mandible from the same period likewise has black dentine in all the teeth, which also have a metallic calculus on the tips.

Table 14  
Measurements of seventeenth-century sheep metacarpals

Measurement	No. in sample	Range	Mean	SD	CV
GL	11	107.7 to 129.1	116.8	5.99	5.1
BFp	15	19.9 to 24.2	22.2	1.13	5.1
SD	11	12.4 to 15.5	13.7	0.81	5.9
BFd	15	23.1 to 26.8	25.0	0.98	3.9

**Table 15**  
Sheep Teeth

<i>Period</i>		<i>dP4</i>	<i>P4</i>	<i>M1</i>	<i>M2</i>	<i>M3</i>	<i>MWS</i>	<i>Age Range Estimate</i>
Dark Earth	C17	c					2-6	2-6m
		d					2-6	2-6m
Dark Earth	C12/13					V	20-25	12-24m
			e	g			28-34	2-3y
Dark Earth	C17		f	g	f	c	31	2-3y
						c	29-33	2-3y
				g	f	d	32	2-3y
				g	g		28-36	2-4y
Dark Earth	C17		g	h	g	e	35	3-4y
						e	33-38	3-6y
Dark Earth	C17		h	-	g	f	35-38	3-6y
					g	f	35-38	3-6y
Dark Earth	C14					f	35-38	3-6y
						f	35-38	3-6y
Dark Earth	C17		j	h	g	g	37	3-4y
			j	h	g	g	37	3-4y
Dark Earth	C17		f	h	h		35-38	3-6y
				j			36-39	3-6y
Dark Earth	C17		f	k	g	f	38	4-6y
						g	36-46	4-10y
Dark Earth	C17					g	36-46	4-10y
						h	45-47	8-10y
Dark Earth	C17			n	m		49-50	8-10y

Three seventeenth-century mandibles have teeth with intradental attrition, and one of these also shows signs of periodontal disease. The bone around P3 is 'swollen' and the alveoli for P4 and M1 are wide and porous. The second premolar is missing, but there is a scar where the bone has grown into the alveolus after it was lost.

### Pig

Only one pig bone was recovered from the Iron Age. As it was an unfused distal metapodial, it is probably from an animal less than two years old.

The "dark earth" material included three left 4th metacarpals, one of which was complete with unfused distal end, therefore probably less than two years old. The dental evidence is from one animal about nine months old and another about one year

old. The sex of one pig can be ascertained from a male upper canine.

From the epiphysial fusing data from the twelfth and thirteenth centuries it can be deduced that there is a minimum of one animal less than one year old and one over this age, but less than 3½.

The fourteenth-century remains include evidence of one foetal/neonatal pig, a mandible from a pig of about 16 months, and another from a male of about 18 months. A loose lower canine is from a male over 18 months old.

The incisors and canine in a seventeenth-century pig mandible come from a female over 18 months, and, for the purposes of minimum numbers, could be from the same animal as a fused

distal femur which makes the animal over 3½ years old. Other dental evidence is from an animal of about 9 months and another of about 1 year.

There are only three pig bones from the nineteenth century, with no ageing data.

#### Pig size

There are, as is often the case, too few pig bone measurements to get any idea of the general size of the pigs from these periods. Not only were few bones recovered, but only mature bones are measured and most pigs are killed for their meat when young.

One item of interest is the measurements of the lacrimal bone in a seventeenth-century skull. The lacrimal/frontal suture is locked but moveable, but the lacrimal/malar suture is unfused. Owing to damage the lacrimal is a *minimum* of 44.4mm long by 25.1mm high which gives an index of 177%. The shape is very close to a young wild boar (M<sup>2</sup> visible in crypt) in the writer's collection with an index of 205% and it is obvious that, had the bone been complete, the index would have been much closer to this figure. A fourteenth-century skull from George Street (Jones 1983, fiche 77:G1) has an index of 167% and straight profile rather than the 'dished' face of modern pigs. It is a male pig with the third molar unerupted, so that the lacrimal bone would have lengthened as it matured making the index more like a wild example. It is not suggested that the seventeenth-century pig was wild, merely that it had an unimproved, primitive shape of skull. This may have been influenced by its sex. According to Epstein (1984 p149) 'the anterior part of the skull in adult pigs of many improved breeds is markedly shorter and the braincase is higher and slopes forward, rendering the break in the profile more acute. Owing to their situation on the border between the aboral and oral parts of the skull, the lacrimals must of necessity be affected by changes in the form, position and direction of the anterior and cranial parts.' Lacrimal shape is also affected by age and sex, the indices of sows being considerably smaller than the respective indices of males.

#### **Horse**

All but one of the eight horse fragments are

from "dark earth" deposits. All could have come from one animal. A fifth and sixth lumbar vertebrae with fused epiphyses, are fused together. According to Silver (1969), the epiphyses fuse at five years old and it is likely to have taken some time for the ankylosis to become complete. The only other ageing data is supplied by an incisor which is well worn and gives a very rough estimate of age as about nine years old. An atlas vertebra has a chop mark across the ventral arch. This may have happened when the head was being removed if the neck was cut close to the mandible before the spine was chopped through.

There is a fused proximal radius from the seventeenth century, which means that the horse was over approximately 18 months when it was killed or died.

#### **Dog**

The four "dark earth" bones have come from at least two animals, one of which is over 18 months old. The length of the "dark earth" radius is estimated to be 125mm which, using the factors in Harcourt (1974), gives a withers height of 41.7cm, whereas the femur has an estimated length of 225mm, which gives a withers height of 69.35cm. This latter bone has the caput missing, but the length to the trochanter major is 221mm; the smallest shaft circumference is 53mm. This is a tall dog (as tall as a greyhound) with a medium sized bone diameter (similar to a retriever's).

A twelfth or thirteenth-century mandible is from a dog at least seven months old; wear on the third incisor suggests it is in fact older than this.

Ten of the eleven bones found in the fourteenth-century pit are from one dog and it is possible that the eleventh is also from the same animal. Using the fusion data in Clark (1995, 23) gives an age of about six months. The right radius (proximal fused, distal unfused), is porous at both ends; the right ulna, (unfused at both ends) is porous at the distal end; both left and right femur are evident (unfused at both ends) but only the right has porous ends; the right tibia (both ends unfused) is also porous at both ends. The left tibia is in two pieces and only about 50-75% is present. It may be that when the body was disposed of it was lying on the

right side and minerals from the vulnerable less calcified growing areas were leached out.

A very small metacarpal, smaller than from a fox, and a fragment of ulna are the only remains of dog from the seventeenth century.

### Cat

A third metatarsal of average size for early domestic cat from the "dark earth" period and an immature humerus from the C12-13 are the only bones retrieved of this species.

### Domestic fowl and geese

Only two fragments of domestic fowl were recovered from the Iron Age material and only one from the nineteenth century.

The bones were not drilled to check for medullary bone (stored on the inside of the bone shaft by females in egg-laying condition), but a broken "dark earth" femur (right) with medullary bone is obviously from a female. A second mature right femur and an immature humerus shows that there are a minimum of three birds. A similar proportion of bones are identified as 'the size of domestic goose'.

A high proportion of domestic fowl fragments were found in twelfth to thirteenth-century deposits (34% of identified bone). Three right tibiotarsi mean that there are a minimum of three birds represented by the bones. A tarsometatarsus without a spur could be from a female or from a young male (the spur core does not fuse to the tarsometatarsal shaft until between seven and eighteen months even in faster maturing birds whose proximal tarsometatarsi fuse between three-and-a-half and four-and-a-half months, Sadler 1991 p44), but the measurements put it among the females from Saxon to 1356AD at Facombe (Sadler 1990 Fig 11.12 p502). Slight extra bone growth was present on the articular surface of a coracoid and a scapula. A small spongy outgrowth on a lumbosacral mass may be the start of myeloma (Baker 1980 p104) and the enlargement of an ulna shaft may be due to it having broken and healed. In contrast to the many fowl bones, only one fragment is identified as domestic goose. It is the only bird bone with any

sign of butchery as it has a light cut on the proximal diaphysis.

For the first time, in the fourteenth century remains, the proportion of domestic goose fragments is roughly the same as the domestic fowl. There are more immature bones than in the previous groups. A tarsometatarsus has a spur scar which suggests it is a male of at least more than seven months old. (See above) It is close to the group of males at Facombe (Sadler 1990 see above).

The seventeenth-century fowl bones are rather incomplete, but where measurements can be taken they indicate that the birds were larger.

### Wild mammals and birds

None of the five rabbit bones appear larger than early feral rabbit (the only measurable bone, a pelvis, is of this size) so they are included in this section.

The wild mammals and birds as a percentage of all identified mammals and birds are shown in table 16. The second set of figures below them are the percentage of the context from which samples were sieved.

Table 16

Wild mammals and birds as percentage of all identified mammals and birds

Iron Age "dark earth"	C12-13	C14	C17	C19	
46%	2%	11%	3%	3%	50%
71%	0%	50%	38%	33%	100%

Apart from the deer, all the wild animals recovered are small and therefore more will have been recovered from periods with a high proportion of sieved samples. As the proportions sieved are not equal, no inference can be made from the differences in the percentages.

Five deer fragments are scattered throughout the periods. An unfused distal fragment of red deer femur and a roe deer upper M1 (very worn) are from Iron Age deposits, a roe deer scapula is dated as "dark earth", a metacarpal fragment the size and shape of fallow deer, but with no truly diagnostic

feature, was found in a twelfth to thirteenth-century context and a fallow metatarsal fragment in the seventeenth-century pit.

The rabbit and hare may have been bought from a butcher (one of the rabbit bones is burnt), but the bones of water vole, vole (all the size of field vole), house mouse and mouse (a nineteenth-century tibia is the size of the yellow-necked field mouse but the earlier tibia and axis are the size of wood mouse) are probably in the soil by chance. The water vole was probably breeding in the area, at least in the Iron Age, as the teeth in the mandible from this period are just erupting. The house mouse identified from the Iron Age material could be from this period as others have been found this early (Coy 1981), but it could also be an intrusion as the context was not sealed.

The fourteenth-century goose bone is the size of pink footed goose. Included in the unidentified bird bones are a twelfth to thirteenth-century humerus similar, but not identical, to a meadow pipit; a fourteenth-century tarsometatarsus similar to woodcock but slightly smaller; a group of seventeenth-century bones from a bird, or birds, the size of a greenfinch (coracoid, ulna, pelvis, a pair of femora) and two right humeri the size of a black-bird. If these seventeenth-century fragments had been complete enough for a definite identification, the percentage of remains from wild sources would have increased to 5.5%.

## Fish

All the fish bone identified is from marine species. Only one identifiable fish bone was recovered from three of the periods (Iron Age, "dark earth" and nineteenth century), twenty-four from the twelfth to thirteenth century (29% of identified bone), ten from the seventeenth century (3% of identified bone), but by far the highest number was from the fourteenth century (46% of identified bone). This result is not due to a higher proportion of the material being sieved, and must reflect either selective disposal, better preservation, or higher consumption of fish. From the condition of the bone it was possible to see three cases of bone being crushed and marked by cess (i.e. having been through a digestive system) in the twelfth to thirteenth century material, and one similar in each of

the other two groups of bones. Fish bone from the fourteenth century had, in two instances, been burnt, but there is evidence of much more burnt bone, though not fish, in the seventeenth century pit. It is interesting to note that from the small number of fish bones recovered by hand on the George Street site (Jones 1983) most were from two late thirteenth or early fourteenth-century rubbish pits and only one bone was from a freshwater species.

The single identified "dark earth" fish bone is a vertebra from the cod family (*Gadidae*) with a diameter of 21.4mm and a length of 15.4mm. This is from a fish well over a metre long. A twelfth to thirteenth-century eel dentary is from a fish under 350mm total length, whereas a fourteenth-century cleithrum (found with a mandible and premaxilla) is from an eel about 400mm in length. Some of the whiting vertebrae found in the fourteenth-century pit are diseased. The ling cleithrum (also fourteenth century) is from a large fish over a metre long, and the plaice anal pterygiophore is from a fish with a total length of about 300–350mm.

## Discussion

The proportions of the main domestic animals are unusual with only the "dark earth", from unsieved contexts spread across the site, falling into the main group (see Walton Road Stores Appendix A; Sadler, in Bonner and Dalwood forthcoming), that is, coming within the following ranges: Cattle 35–47%; Sheep 36–49%; Pig 12–22%. The fourteenth-century figure is fairly close to those for late Saxon and medieval Walton Croft Road, but has a slightly higher percentage of pig. The figures from the seventeenth century are very difficult to judge as they are influenced so strongly by the high number of sheep bones, of which 65% are lower limb bones, 18% are from the head and only 17% are from bones which provide more meat. The number of lower limb bones would have been even higher if the burnt fragments could have been accurately counted.

Discussing an early eighteenth-century site where the majority of sheep bones are metapodials, O'Connor (1984, 22) suggests that a reasonable explanation would be to attribute them to waste from the processing of sheepskins, but then men-

tions that there are records of poor households buying sheep's feet as a cheap meat source (Armitage 1983 quoted in O'Connor 1984, 24). Another explanation is that this is waste from a butcher's premises, but the explanation which most accurately fits the evidence from this site is found in Kerridge (1967, 243); he is discussing the 'agricultural revolution' in the seventeenth century and the new techniques used in fertilising. 'Farmers increasingly bought in refuse from big towns and cities . . . wagons that took corn, malt, and provisions . . . returned laden with stable manure, street refuse, soot, ashes, rags, furriers clippings, horn shavings, *sheep's trotters*, leather shreds, bones, and all manner of refuse. Bones might be calcined, and rags and waste cut up, and then all were ploughed in or sown with the corn.' As has already been mentioned, many of the sheep bones had indeed been burnt, and it may be that they were to be used as fertiliser.

The proof that during the seventeenth century at least some sheep had been 'improved' (bred to provide more mutton rather than good quality wool) is interesting. Kerridge (1967, p319) says that 'Around 1650 selected pasture rams were selling at £10 apiece. Moreover, Midland graziers and farmers improved their breed by importing marsh tups from the Fen and Saltings countries.' The Cotswold breed was transformed by both improved feed and crossing with the Midland pasture sheep, (p321) 'their legs shortened and their carcasses became larger and fleshier'. It was the improvements in the production of fodder as well as selective breeding which made the larger, mutton-producing sheep.

The very young pig remains in the fourteenth-century refuse suggests that pigs were being kept nearby. This was also suggested for the George Street site (Jones 1983, 36) and in 'A History of the British Pig' (1986, 8), Wiseman comments, 'The role of the pig in the community gradually changed, and they tended to be housed for longer periods, usually on a 'one per household' basis, and fed predominantly on kitchen waste'. He then quotes Markham as describing the seventeenth-century pig as, 'the husbandman's best scavenger and the housewife's most wholesome sink . . . for his food and his living is by that which would else rot in the yard and make it beastly.'

It is certain that domestic fowl were being kept in the yards, for in a twelfth to thirteenth-century pit, a piece of compacted chicken droppings is present with the impression of feathers in it, presumably put in the pit when their housing was cleared out.

## The Macroscopic Plant Remains

Ruth Pelling

### Introduction

During the excavations a series of soil samples were taken for the retrieval of plant remains.

Samples were processed using a bulk water separation machine and collected onto a 0.5mm mesh. Dried flots were sorted by members of Buckinghamshire County Museum Archaeology Group. Ten samples were selected for analysis, five from medieval cess or refuse pits, two from sixteenth/seventeenth-century pits and three from nineteenth-century cess pits.

### Method

Plant remains were examined under a binocular microscope at  $\times 10$  and  $\times 20$  magnification. Identifications were based on morphological characteristics and by comparison with modern reference material held at Oxford University Museum. The results are displayed in tables 17 and 18. Nomenclature follows Clapham, Tutin and Moore (1989). In the case of cereal remains the plant part is given (grain, rachis etc.). For all other identifications the plant part recorded is the seed, nutlet etc. unless otherwise given.

### The Medieval Remains (Table 17)

At least three phases of refuse pits are represented, all of which produced charred plant remains. The phase II (sample 2048) and Phase III (sample 2049) samples produced small amounts of cereal remains and occasional weeds. Free-threshing *Triticum* (bread-type/rivet wheat) grains were most commonly identified. No rachis fragments were recovered, thus it was not possible to identify the wheat to ploidy level given the inherent difficulties in distinguishing ploidy level on the basis of

grain. Hulled barley (*Hordeum* sp.) and oats (*Avena* sp.) were identified as secondary cereal crops. All seeds identified as *Avena* sp. were recorded as grain. This does mean that any wild oats present in the samples will be treated as cereals, but given the lack of any identifiable floret bases this gives the best available impression of the relative abundance of cultivated oat. One barley grain in sample 2049 showed clear signs of germination while a sprouted embryo was also recovered from the same sample. A single large legume (vetch/bean/pea) in sample 2049 and a raspberry seed in sample 2048 are further possible food remains. Weeds were infrequent in the phase II and III samples, and are largely ruderal species such as *Plantago major* (plantain) and *Rumex* sp. (docks) or common arable weeds such as *Anthemis cotula* (stinking mayweed).

Three samples from Phase IV were analysed, taken from a single pit. Cereal grains form the dominant component of the assemblages. Free-threshing wheat is the most commonly represented cereal. Two distinct grain types are identified; short plump grains recorded as 'compact' and, less frequently, longer narrow grain recorded as 'elongated'. Intermediate grains were classified separately. Hulled barley forms the second most numerous crop while oats are also present. Asymmetrical grains indicate the presence of the six-row variety of hulled barley (*Hordeum vulgare*). A single grain identified as *Triticum/Secale* sp. (wheat/rye) suggests that rye may be represented, although no grain or rachis was positively identified. Chaff remains were very infrequent consisting of a single free-threshing wheat rachis node, a culm node, and occasional detached embryos. The rachis was too poorly preserved to allow identification to ploidy level. One *Pisum sativum* and occasional large legumes indicate the cultivation of peas and/or beans.

The weed flora of the Phase IV samples is much more extensive than the earlier samples. Samples 2014 and 2017 especially are dominated by leguminous weeds. Seeds of *Medicago lupulina* (black medick) were identified by seeds with fragments of seed coat still attached. Large numbers of leguminous weeds can be taken as an indication of poor soil fertility as they will out compete many other species on nitrogen-poor soils. Increases in the numbers of leguminous weeds during the late

Saxon/early medieval period, for example at the Raunds sites in Northamptonshire (Campbell, forth) do coincide with a period of agricultural expansion. Such occurrences may also represent the deliberate encouragement or cultivation of legumes, for example as part of a crop rotation system, to provide feed for animals and improve the fertility of the soil.

*Anthemis cotula* (stinking mayweed) and *Odontites verna* (red barstia) suggest some cultivation of heavier calcareous clay soils. *Eleocharis palustris* (common spike rush) requires at least seasonal flooding, thus may indicate some cultivation of rather marshy soils. Other species represented in the samples are common ruderal or arable weeds such as *Chenopodium album* (fat hen) and *Polygonum aviculare* group (knotgrass).

### The Post Medieval Remains (Table 18)

The post-medieval samples consist predominantly of mineralised material. Occasional charred remains are present. Free-threshing wheat grains dominate the charred assemblages while occasional hulled barley and very occasional oat grains were also identified. A possible broad bean (*Vicia faba*) was identified in one sixteenth or seventeenth-century sample (2008) along with some unidentifiable large legumes. The small number of charred remains present in the mineralised samples are probably no more than the ubiquitous scatter of charred remains, especially grain, which tend to occur on sites of medieval and later date.

Mineralisation by calcium phosphate replacement is a form of preservation characteristic of poorly drained deposits which had a high faecal/urine content in the presence of calcium carbonate (Green 1979). Cess pits and garderobes provide particularly favourable conditions for this type of preservation. Such remains can therefore provide direct evidence of human or animal consumption. The presence of the puparia of the sewage fly which was noted in the samples further indicates that the deposits were derived from cess-pits.

The mineralised remains from the post-medieval deposits are dominated by the seeds of fruits. Sample 2009, taken from a sixteenth or seventeenth-century deposit contained very large num-

**Table 17**  
Macroscopic Plant Remains Recovered From Medieval Contexts

	Sample	2048	2049	2013	2014	2017
	Context	860	854	696	721	693
	Pit Number	856	R913	653	653	653
	Phase	II	III	IV	IV	IV
	Original Weight (Kg)	18.5	9	15	17	17
<b>Charred remains</b>						
<i>Triticum</i> sp.	Free-threshing wheat, short grain	4	17	102	100	225
<i>Triticum</i> sp.	elongated grain	1	–	–	4	10
<i>Triticum</i> sp.	intermediate grain	2	10	54	22	156
<i>Triticum</i> sp.	rachis node	–	–	–	–	1
<i>Triticum</i> sp.	Wheat grain	–	22	46	56	74
<i>Triticum/Secale</i>	Wheat/Rye grain	–	–	–	–	1
<i>Hordeum vulgare</i>	Six-row hulled barley, lateral grain	–	–	1	2	–
<i>Hordeum</i> sp.	Barley, hulled grain	1	7	54	10	101
<i>Hordeum</i> sp.	Barley, grain	–	3	59	11	112
<i>Avena</i> sp.	Oat, grain	–	14	29	10	62
Cerealia	grain	1	53	208	131	379
Cereal sized	embryo	–	–	6	1	–
Cerealia indet	sprouted embryo	–	1	–	–	–
Cereal sized	culm node	–	–	1	–	–
<i>Pisum sativum</i>	Pea	–	–	1	–	–
<i>Vicia/Lathyrus/Pisum</i> sp.	Vetch/Bean/Pea	–	1	4	–	6
<i>Ranunculus acris/repens/bulbosus</i>	Buttercup	–	–	1	3	–
<i>Agrostemma githago</i>	Corn cockle	–	–	–	–	1
<i>Lychnis flos-cuculi</i>	Ragged robin	–	–	–	–	1
<i>Chenopodium album</i>	Fat hen	–	–	–	1	–
<i>Chenopodium</i> sp.		–	–	–	2	2
Chenopodiaceae		–	1	–	11	7
<i>Medicago lupulina</i>	Black medick	–	–	2	16	115
<i>cf. Medicago lupulina</i>		–	–	8	48	227
<i>Vicia/Lathyrus</i> sp.	Vetch/Tare	1	4	2	2	4
Leguminosae, small		2	5	–	42	34
<i>Torilis japonica</i>	Upright hedge-parsley	–	–	–	–	1
<i>Polygonum aviculare</i> agg.	Knotgrass	–	–	–	1	10
<i>Polygonum convolvulus</i>	Black bindweed	–	–	–	2	–
Polygonaceae		–	–	–	2	5



**Table 17 (cont.)**  
Macroscopic Plant Remains Recovered From Medieval Contexts

Sample	2048	2049	2013	2014	2017	
Context	860	854	696	721	693	
Pit Number	856	R913	653	653	653	
Phase	II	III	IV	IV	IV	
Original Weight (Kg)	18.5	9	15	17	17	
<hr/>						
<i>Rumex</i> sp.	Docks	1	1	7	9	5
cf. <i>Anagalis</i> sp.	cf. Pimpernel	–	–	–	–	1
<i>Odontites verna</i>	Red barstia	–	–	1	2	–
<i>Plantago major</i>	Plantain	–	1	–	–	4
<i>Tripleurospermum</i> sp.	Mayweed	1	–	–	–	8
<i>Centaurea</i> sp.	Knapweed/Cornflower	–	–	–	–	1
Compositae		–	–	–	–	3
<i>Carex</i> sp.	Sedges	–	–	–	–	1
<i>Anthemis cotula</i>	Stinking mayweed	1	2	4	2	19
<i>Eleocharis palustris</i>	Spike rush	–	–	–	1	1
Polygonaceae/Cyperaceae		–	–	1	–	7
<i>Bromus</i> subsect <i>Eubromus</i>	Brome grass	–	–	4	–	1
<i>Bromus sterilis</i>	Barren brome	–	1	–	2	–
Gramineae	Grass, large seeded	–	1	6	4	35
Gramineae	Grass, small seeded	–	–	–	1	3
Indet weed		1	1	7	13	146
<b>Mineralised remains</b>						
<i>Sambucus nigra</i>	Elder	10	3	1	–	2
<i>Rubus idaeus</i>	Raspberry	2	–	–	–	–
<i>Lithospermum arvensis</i>	Corn gromwell (silica)	–	–	1	1	3
<i>Hyoscyamus niger</i>	Henbane	–	1	–	–	–
Indet		1	–	–	–	–
<hr/>						
Total grain		9	126	553	346	1120
Total chaff		0	1	7	1	1
Total pulses		0	1	5	0	6
Total weeds		20	21	45	165	816
<hr/>						
Total number of items		29	149	610	512	1943

bers of mineralised seeds of fig (*Ficus carica*) and wild/alpine strawberry (*Fragaria vesca*). Seeds of Raspberry (*Rubus idaeus*) and blackberry/bramble (*R. fruticosus* agg.) and a single grape (*Vitis vinifera*) were also present. Fig and grape are often found in medieval deposits, especially in cess pits. Fig tends to be especially numerous, largely because a single fig produces up to 800 robust and easily mineralised seeds. Although both fig and grape can be cultivated in warmer parts of Britain, and appear to have been so in the past (Roach 1985), it is more likely that archaeological examples derive from imported dried fruit. Historical evidence suggests that they were imported from the Mediterranean in very large numbers (Greig, 1996). The strawberry and raspberry are likely to have been cultivated. The strawberry seeds tended towards the larger size range characteristic of the cultivated variety, the alpine strawberry, which differs in that it does not produce runners but instead produces late season flowers. The blackberry was probably always collected wild.

Mineralised seeds of several weed species were identified, most of which could have been growing within the vicinity of the cess pit. One species, *Hyoscyamus niger* (henbane) also has medicinal uses as a drug to reduce swelling and pain (Clapham *et al* 1989) and its association with mineralised fruit material must suggest that it may have been used medicinally. Several seeds of elderberry (*Sambucus nigra*) were present, a seed ubiquitous among medieval remains.

The nineteenth-century samples again produced large numbers of fig and raspberry seeds. Several seeds of apple or pear (*Malus domestica*/*Pyrus communis*) were also recovered. The seeds of apple and pear are identified on the basis of surface cellular structure. In the case of replacement mineralisation, the surface cellular structure is often replaced by that of the mineral, thus it was not possible to distinguish one species from the other. Sample 2000 also produced a large number of seeds identified as probable gooseberry (*Ribes cf. uva-crispa*). Gooseberry is difficult to distinguish from red currant (*R. rubrum*) as there is considerable overlap in the dimensions of the seeds of the two species. The majority of seeds tended towards shorter fatter seeds, more characteristic of gooseberry, although some were more elongated, more characteristic of

redcurrant. The overall distribution does suggest a population of gooseberry, although definite identification was not possible. This sample also contained large amounts of unidentifiable heavily mineralised fragments reminiscent of fruit skin and squashed fragments of fruit flesh in addition to general mineralised faecal material. The possible skin and flesh may also have derived from the gooseberries. Apple and pear are frequently found in mineralised deposits of medieval date and later. Gooseberry is less common, although historical and occasional archaeological records do go back to the thirteenth century (Greig 1996; Harvey 1981).

Of interest in the weed assemblage, given the association with cess is the presence of 11 seeds of *Papaver somniferum* (opium poppy). *Papaver somniferum* is a casual of cultivated and waste ground but was also formerly grown for medicinal purposes (Clapham *et al* 1989) for use as a powerful pain killer and soporific and also for coughs. It is difficult to interpret with any certainty whether such seeds have entered the deposits as a result of medicinal use or whether they are casual introductions from plants growing as weeds in the vicinity. This difficulty is increased by the fact that most plants have been credited with healing powers at one time or another, and also by the fact that the common medicinal plants occur in association with common ruderal, arable or grassland weeds, unlikely to have any medicinal or dietary use. The association with mineralised fruit seeds in the cess pits does, however, suggest they have derived from human excrement.

## Summary

The samples taken from the medieval pits are typical of the period. The cereal assemblage is dominated by grains of free-threshing wheats, while barley and oats are also present. The weed assemblage suggests a well developed weed flora, although the general paucity of weed seeds and chaff suggests a fairly clean but mixed assemblage. The post-medieval cess-pit samples provide useful evidence of the types of fruit available at the time. Native fruits such as apple or pear and gooseberry were clearly eaten, while fig and grape are likely to have been imported.

**Table 18**  
Macroscopic Plant Remains from Post-Medieval Samples

	Sample	2008	2009	2000	2001	2002
	Context	686	701	521	602	602
	Pit Number	675	675	475	604	604
	Date (century A.D.)	16/17	16/17	19	19	19
	Original Weight (kg)	7.5	6	—	10	11
<b>Charred Remains</b>						
<i>Triticum</i> sp.	Free-threshing wheat, grain	37	2	—	5	—
<i>Triticum</i> sp.	Wheat grain	5	—	—	1	—
<i>Hordeum</i> sp.	Barley, hulled grain	31	—	—	2	—
<i>Hordeum</i> sp.	Barley, grain	7	—	—	—	—
<i>Avena</i> sp.	Oat, grain	2	1	—	—	—
Cerealina	grain	13	1	—	5	—
cf. <i>Vicia faba</i>	Broad bean	1	—	—	—	—
<i>Vicia/Lathyrus/Pisum</i> sp.	Cultivated Vetch/Bean/Pea	9	—	—	—	—
<i>Ranunculus arvensis</i>	Corn crowfoot	—	—	—	1	—
<i>Rumex</i> sp.	Docks	1	—	—	—	—
Leguminosae, small		—	2	—	1	2
<i>Galium</i> sp.		—	—	—	1	—
Indet weed		2	—	—	5	—
<b>Mineralised remains</b>						
<b>FRUIT</b>						
<i>Vitis vinifera</i>	Grape	—	1	—	—	5
<i>Ficus carica</i>	Fig	8	1768	10	59	686
<i>Rubus idaeus</i>	Raspberry	5	14	3	41	632
<i>Rubus fruticosus</i> agg.	Bramble/Blackberry	—	6	—	—	—
<i>Rubus</i> sp.		—	13	—	—	242
<i>Malus domestica</i> / <i>Pyrus communis</i>	Apple/Pear	—	—	47	—	2
<i>M. domestica</i> / <i>P. communis</i>	Apple/Pear endocarp	—	—	—	—	2
<i>Fragaria vesca</i>	Alpine strawberry	—	962	—	9	1
<i>Ribes</i> cf. <i>uva-crispa</i>	Gooseberry	—	—	604	—	—
<i>Ribes uva-crispa/rubrum</i>	Gooseberry/Red currant	—	—	89	—	2
cf. <i>Ribes</i> sp.		—	—	43	—	—
<b>WEEDS</b>						
<i>Papaver somniferum</i>	Opium poppy	—	—	—	—	11
<i>Aethusa cynapium</i>	Fool's parsley	1	—	—	—	—

**Table 18 (cont.)**  
Macroscopic Plant Remains from Post-Medieval Samples

	Sample	2008	2009	2000	2001	2002
	Context	686	701	521	602	602
	Pit Number	675	675	475	604	604
	Date (century A.D.)	16/17	16/17	19	19	19
	Original Weight (kg)	7.5	6	-	10	11
<i>Bupleurum rotundifolium</i>	Thorow-wax	-	-	-	-	1
<i>Rumex</i> sp.	Docks	1	-	-	-	-
<i>Lithospermum arvensis</i>	Corn gromwell (silica)	2	-	-	-	-
<i>Hyoscyamus niger</i>	Henbane	2	6	-	2	-
Solonaceae		2	-	-	-	1
<i>Galeopsis</i> sp.	Hemp-nettle	-	-	-	1	-
<i>Sambucus nigra</i>	Elder	2	68	-	16	10
<i>Carex</i> sp.	Sedges	-	2	-	1	1
Cyperaceae		-	1	-	-	-
Weed indet		2	7	-	-	-
Total charred remains		108	6	0	21	2
Total mineralised fruit		13	2764	796	109	-
1572						
Total mineralised weeds		12	84	0	20	24
Total		133	2854	796	150	1598

## CONCLUDING DISCUSSION

The County Museum excavations provide evidence for the topographical development of a small part of central Aylesbury. The cartographic record for Aylesbury is one of the most disappointing for any English town of its age, with no surviving plan before the early C19. The archaeological evidence is therefore crucial for understanding urban development in Aylesbury.

The area of the Museum was undoubtedly within the circuit of the Iron Age hillfort and the Saxon settlement; unfortunately insufficient deposits of either period were preserved on the site to advance our understanding. Arguments from silence are rarely satisfactory, and in the present case the paucity of early material may be due simply to the small area investigated and to the destructive effects of intensive activity, particularly pit digging, in the later periods. Although there were a

number of medieval burials, the absence of Saxon burials is, nevertheless, of note, since it casts doubt upon the hypothesis proposed by Allen and Dalwood (1983) that the George Street burials belonged to an extensive cemetery associated with the Minster church. On the basis of present evidence, it is still difficult to avoid the conclusion that the mid-Saxon burials at George Street are likely to be associated with a minster church, but it now seems unlikely that the cemetery occupies an area of 2.5 hectares, extending from the existing churchyard to George Street, as previously suggested. The extent of burials along Church Street has been mapped (Farley 1979); clearly these are now as likely to be medieval as Saxon. The George Street cemetery may therefore have been physically distant from the Minster, or alternatively the Minster may not have been on the site of the present St Mary's, but neither hypothesis is entirely convincing. The size of the areas used for burials within the town during the Saxon and medieval

periods raises a number of questions, including the possibility of a bifocal or migrating cemetery, which would have influenced the topographical development of the town.

The earliest surviving feature of importance is the ditch of medieval phase I, which is interpreted as a boundary ditch dividing Church Street into burgrave plots. Church Street itself has the appearance of having been one of the primary features of the town. There appears, however, to have been a degree of fluidity in the urban layout, for by the thirteenth century the area (or a substantial part of it) was being used for burial. Two phases of burial were identified; the change in orientation between the two phases is highly unusual, and suggests that despite the proximity of St Mary's to the site, the church and burials were not at this stage inter-visible, and that the graves were orientated with respect to some other feature – the road, the churchyard boundary, or perhaps even whatever structure or building obscured direct view of the church. The discovery of burials beneath the courtyard and the former coach house indicate that the cemetery area was extensive; on the other hand part of the main excavation area appeared to be free of burials, as the later pits over this part of the site contained little in the way of disturbed human bone, in contrast to the medieval pits at the nearby George Street site, which contained significant quantities of bone from the (Saxon) cemetery which had previously occupied the site.

After the cemetery phase there may have still been a difference in function between the northeast and the southeast areas of the site. The northeastern part of the site, where there had previously been burials, developed a garden soil, whilst the remaining part of the site was a focus of pit-digging. The site may therefore have been divided into two plots, that further away from St Mary's containing cess-pits and rubbish pits indicative of domestic urban occupation, although this division was not distinguished by any surviving structure. The pits are likely to have belonged to buildings on the Church Street frontage, but there is no sign that any structures extended as far back as the excavated area.

From the fifteenth century onwards there is documentary evidence for activity at the adjacent Ceely House, which is likely to have been on a

separate plot, assuming that the main axis of plots lay at right angles to Church Street. Ceely House originated as the Brother House of the Fraternity of the Virgin Mary, founded in 1450, and elements of the fifteenth century structure are incorporated within the present building (Trench and Fenley 1991). From the seventeenth century there is limited evidence for the rest of the area now occupied by the museum. Unfortunately it is difficult to correlate directly with the known building sequence the archaeological deposits on the site from these later periods, but this is perhaps not surprising given the limited area available for examination.

The excavation results also illuminate the social and economic history of the town, although little was found that might be considered unusual in an urban context elsewhere.

The contribution to diet of marine fish in the medieval period is of interest, given the distance from the sea; the ten or so species (table 10), to which we may add the conger eel and mackerel found at George Street (Jones 1993), indicate a highly developed marketing network for coastal products. It is unlikely that these species were imported as wet fish; far more likely is that they would have been smoked or preserved by salting or pickling. The absence of freshwater species also reflects the evidence from George Street, where only a very small quantity of trout was recovered. Fish apart, it seems likely that Aylesbury was reliant upon its immediate rural hinterland up to the industrial revolution. Fowl were kept in the town, and doubtless other species were also bred, and must have contributed to the general squalor reported in many medieval towns – by the nineteenth century it was apparently possible to keep a pig in Aylesbury solely on what the beast could scavenge from the public thoroughfares (Gibbs 1885, 595–5). Further evidence of diet is provided by the analyses of residues within the cess pits; again, the evidence is typical. Bread wheat, hulled barley and oats, and perhaps rye, are present in the medieval period, along with peas and/or beans. The accompanying weed species imply that some crops originated from some of the damper land in the Vale of Aylesbury. By the post-medieval period there is also evidence for soft fruit (including fig and grape, probably imported as dried fruit), whilst the pres-

ence of opium poppy possibly indicates its use for medicinal purposes.

The finds assemblage indicates a range of activities which took place within the town, although again the activities represented do not necessarily tell us a great deal about the use of this particular plot or plots. The pottery is almost entirely from local sources – the occasional sherds of exotica in the late medieval/early post-medieval period may have been brought back from London, perhaps by one of the retinue of Ralph Verney (sometime Lord Mayor of London) or someone of his class, and does not indicate that Aylesbury was a nodal point in terms of long-distance trade. Aylesbury, then, was an important marketing centre for the surrounding countryside, and an administrative centre for the County, but its importance at a wider regional level is less significant.

### ARCHIVE

The site archive is held at the County Museum as part of the County Sites and Monuments Record (ref: CAS 4728). The finds are accession no. AYBCM 1997.22.

### ACKNOWLEDGEMENTS

The Buckinghamshire Archaeological Society gave a generous grant towards the excavations. A vast amount of practical help was given by Try

Construction, and in particular the Site Agent, Stewart Meyrick-Brook. Without their active support the work described in this report simply would have not taken place. Gratitude should also be recorded here to the small army who dug for six very hectic weeks in circumstances that were rarely easy; some of them were paid, many more were volunteers, and we are equally grateful to both. Volunteers, including CMAG members, also had a major input into the post-excavation work. Finds processing and recording was overseen by Nicky Smith, who is responsible for all the drawings in this report, except where otherwise indicated. Andrew Hunn was a very capable site supervisor. We are also grateful to all the specialists whose work is included in this report; apart from those whose sections are identified in the text we would like to thank P Blinkhorn (Ipswich Ware), H Buckley (marble vessel), J Cherry (printed items), Mrs AR Goodall (copper-alloy dress hook), Mrs B Hurman (pottery drawing), G Lamb (coins and jettons), Dr E Morris (Iron Age pottery), Mrs P Reynolds (glass beads), Dr R Roseff (soils), Mrs B Stainton (flint illustration), R Thomson (tin-glaze wares) and C Whittick (imprinted bone). Mrs P Sadler would like to thank Dr J Baker for inspecting and commenting on the pathological cattle radius, and Ms S Hamilton-Dyer for identifying the fish bones. The final editing of the report was undertaken by Jonathan Parkhouse. Mike Farley provided advice and encouragement throughout all the phases of the project and commented on an earlier draft of the report, but the shortcomings are all our own.

### BIBLIOGRAPHY

- Allen D. 1982. 'Salvage Excavations at 13–19 Buckingham Street and the Bull's Head Redevelopment Site, Aylesbury, in 1979 and 1980' *Recs Bucks.* 24, 81–106.
- Allen D. 1986. 'Excavations in Bierton, 1979: A Late Iron Age 'Belgic' Settlement and Evidence for a Roman Villa and a Twelfth to Eighteenth Century Manorial Complex' *Recs Bucks.* 28, 1–120.
- Allen D and Dalwood CH, 1983. 'Iron Age Occupation, a Middle Saxon Cemetery, and Twelfth to Nineteenth Century Urban Occupation: Excavations in George Street, Aylesbury, 1981' *Recs Bucks.* 25, 1–60.
- Anon. 1973. 'Saxon and Medieval' *Recs Bucks.* 19, 347–348.
- Armitage PL, 1982. 'A system for ageing and sexing the horn cores of cattle from British post-medieval sites (with special reference to unimproved British longhorn cattle)'. In Wilson, R. *et al.*, 37–54.
- Avery BW, 1964. *The Soils and Landuse of the District Around Aylesbury and Hemel Hempstead* (London).
- Baker J and Brothwell D, 1980. *Animal Diseases in Archaeology*. (Academic Press).
- Barclay K and Biddle M, 1990. 'Stone and pottery lamps' in M Biddle (ed) *Object and Economy in Medieval Winchester* Winchester Studies 7,ii 983–1000.
- Bateman NCW, 1997. 'The early 11th to mid 12th century graveyard at Guildhall, City of London', in G De Boe and F Verhaeghe (eds) *Death and Burial in Medieval Europe: Papers of the Medieval Europe Brugge 1997 Conference* 3, 115–120.
- Barnard FP, 1916. *The Casting Counter and The Counting Board*
- Biddle M, 1990. *Object & Economy in Medieval Winchester* Winchester Studies 7,ii.

- Boessneck J, 1969. 'Osteological differences between sheep (*Ovis aries* Linné) and goat (*Capra hircus* Linné)', in: D Brothwell & E Higgs (eds) *Science in Archaeology*, pp331–358. (Thames & Hudson, London).
- Bonner DJ, forthcoming. 'Excavations at the Whitbread Brewery Site, High Street, Marlow, 1996' (*Recs Bucks*.)
- Bonner DJ and Dalwood CH, forthcoming. 'Excavations at Walton, Aylesbury in 1987 and 1994'
- Bonner DJ and Enright D, 1995. *Archaeological Investigations at The King's Head, Aylesbury*, (unpublished client report, held at Buckinghamshire County Museum, ref CAS 1827)
- Brothwell D, 1981. *Digging up bones* (London: Oxford Univ. Press)
- Campbell G, forthcoming. 'Plant and Invertebrate Remains from Saxon and Medieval Sites in North Raunds'. In M Audouy, *North Raunds, Northamptonshire: Excavations 1977–1978*. (English Heritage)
- Clapham AR, Tutin TG and Moore DM, 1989. *Flora of the British Isles* (3rd edition) (Cambridge Univ. Press)
- Clark KM, 1995. 'The Later Prehistoric and Protohistoric Dog: The Emergence of Canine Diversity' *Archaeozoologia* 7, 2, 9–32
- Clutton-Brock J, Dennis-Bryan K, Armitage PL and Jewell PA, 1990. 'Osteology of the Soay sheep'. *Bull Brit Mus Natur Hist (Zool)* 56 (1), 1–56.
- Courty M-A, Goldberg P and Macphail R, 1989. *Soils and Micromorphology* (Cambridge University Press)
- Coy J, 1981. 'Animal Husbandry and Faunal Exploitation in Hampshire', in SJ Shennan & RJ Schudla Hall (eds) *The Archaeology of Hampshire*.
- Crossley-Holland P, 1942. 'Iron Age Pottery from Chinnor' *Oxoniensia* 7, 108–109.
- Crummy N, Crummy P and Crossan C, 1993. *Excavations of Roman and Later Cemeteries, Churches and Monastic Sites in Colchester, 1971–88* (Colchester Archaeological Report 9)
- Cunliffe B, 1974. *Iron Age Communities in Britain* (London: Routledge and Kegan Paul)
- Dalwood CH, 1986. 'The Clay Pipes', in Allen D, 'Excavations in Bierton, 1979; A Late Iron Age 'Belgic' Settlement and Evidence for a Roman Villa and a Twelfth to Eighteenth Century Manorial Complex' *Recs Bucks*, 28, 101–03
- Dalwood CH, 1992. 'The Use Of Soil Micromorphology for Investigating Site Formation Processes' in *Interpretation of Stratigraphy: A review of the Art*. City of Lincoln Archaeol Unit Archaeol Rep 31, 3–6.
- Dalwood CH, Dillon J, Evans J and Hawkins A, 1989. 'Excavations in Walton, Aylesbury 1985–1986', *Recs Bucks*, 31, 137–225.
- Daniell C, 1997. *Death and Burial in Medieval England* (London: Routledge)
- Davis KR, 1982. *Britons and Saxons: the Chilterns Region AD 400–700* (Chichester; Phillimore)
- Davis SJM, 1996. 'Measurements of a Group of Adult Female Shetland Sheep Skeletons from a Single Flock: a Baseline for Zooarchaeologists', *J Archaeol Sci* 23, 593–612.
- Dawes JD and Magilton JK, 1980. *The Church of St Helen-on-the-Walls, Aldwark. The Archaeology of York 10/1* (Council for British Archaeology, York)
- DB Bucks. = Morris, J. (ed), 1978. *Domesday Book: Buckinghamshire* (Chichester; Phillimore)
- Driesch A von den & Boessneck J, 1974. 'Kritische Anmerkungen zur Widerristhöhenberechnung aus Längenmassen vor- und frühgeschichtlicher Tierknochen'. *Säugetierkundliche Mitteilungen* 22 (4), 325–348.
- Driesch A von den, 1976. *A Guide to the Measurement of Animal Bones from Archaeological Sites* (Peabody Museum Bulletin No.1: Harvard University).
- Durham B, 1978. 'Traces of a Late Saxon Church at St Mary's, Aylesbury' *Recs Bucks*, 20, 621–626.
- Eames ES, 1968. *Medieval Tiles: A Handbook*.
- Egan G & Pritchard F, 1991. *Dress Accessories c.1150–1450*.
- Enright D, 1994. 'Preliminary Report on Archaeological Investigations at The King's Head, Aylesbury, Buckinghamshire' (unpublished client report, held at Buckinghamshire County Museum, ref CAS 1827)
- Epstein H & Bichard M, 1984. 'Pig'. Chapter 17 in: IL Mason (ed) *Evolution of domesticated animals*. (London, Longman)
- Farley ME, 1974. 'Aylesbury: A Defended Town' *Recs Bucks*, 19, 429–448.
- Farley ME, 1976. 'Saxon and Medieval Walton, Aylesbury: Excavations 1973–4' *Recs Bucks*, 20, 153–290.
- Farley ME, 1979. 'Burials in Aylesbury and the Early History of the Town', *Recs Bucks*, 21, 116–122.
- Farley ME, 1986 i. 'Aylesbury' in *Current Archaeology* 101, 187–189.
- Farley ME, 1986 ii. 'Excavations at the Prebendal Court Aylesbury 1985' in *5 Midlands Archaeol* 16, 37–38.
- Farley ME, Nash D and White RF, 1981. 'A Late Iron Age and Roman site at Walton Court, Aylesbury', *Recs Bucks*, 23, 51–75.
- Fock J, 1966. *Metrische Untersuchungen an Metapodien einiger europäischer Rinderassen* (Dissertation, Munich)
- Gerrard CM, Gutierrez A, Hurst JG and Vince AG, 1995. *Spanish Medieval Ceramics in Spain and the British Isles* (BAR Int Ser 610)
- Gibbs R, 1885. *A History of Aylesbury in the County of Buckinghamshire* (Aylesbury: Reprinted Chicheley, Bucks; Paul Minet 1971)
- Grant A, 1982. 'The Use of Tooth Wear as a Guide to the Age of Domestic Ungulates'. In Wilson R *et al*, 91–108.
- Goodall AR, 1983. 'Objects of Copper Alloy' in A Streeton *Bayham Abbey* (Sussex Archaeol Soc Monogr 2), 109–110
- Goodall AR, 1989. 'Copper Alloy Objects' in Hassall TG, Halpin CE and Mellor M 'Excavations in St Ebbe's, Oxford, 1967–1976: Part 1: Late Saxon and Medieval Domestic Occupation and Tenements, and the Medieval Greyfriars' *Oxoniensia* 54, 223
- Gowing CN, 1964. 'Aylesbury' *Recs Bucks*, 17, 301.
- Green FJ, 1979. 'Phosphate mineralisation in seeds from archaeological sites', *J Archaeol Sci* 6, 3, 279–84.
- Greig J, 1996. 'Archaeobotanical and Historical records compared – a new look at the taphonomy of edible and other useful plants from the 11th to the 18th centuries AD', *Civica* 12, 2, 211–47.
- Harcourt RA, 1974. 'The dog in prehistoric and early historic Britain' *J Archaeol Sci* 1, 151–175.
- Harding DW, 1972. *The Iron Age in the Upper Thames Basin* (Oxford Univ Press)

- Harding DW, 1974. *The Iron Age in Lowland Britain* (London: Routledge and Kegan Paul)
- Harvey J, 1984. 'Vegetables in the Middle Ages', *Garden History* 12, 89-99.
- Head JF, 1946. 'Buckinghamshire AD 450-700', *Recs Bucks*, 14, 301-340.
- Henderson JD, 1983. 'The Human Skeletal Remains' in Allen D and Dalwood CH, 'Iron Age Occupation, a Middle Saxon Cemetery, and Twelfth to Nineteenth Century Urban Occupation: Excavations in George Street, Aylesbury, 1981' *Recs Bucks*, 25, 18-20.
- Hepple LW and Doggett AM, 1992. *The Chilterns* (Chichester, Phillimore)
- Hodder MA, 1991. 'Excavations at Sandwell Priory and Hall 1982-8' *Trans S Staffordshire Archaeol Hist Soc* 31
- Hurst JG, Neale DS, and van Beuningen HJE, 1968. *Pottery Produced and Traded in North-west Europe 1350-1650* (Rotterdam Papers 6)
- Hurst JG (ed), 1979. *Wharfedale: A study of settlement on the Yorkshire Wolds, Vol 1 Domestic settlement, 1: Areas 10 and 6* (Soc Medieval Archaeol Monogr Ser 8)
- Ivens R, 1982. 'Medieval pottery from the 1978 excavations at Temple Farm, Brill.' *Recs Bucks*, 24, 144-170.
- Jones CA, 1983. 'The Clay Pipes' in Allen D and Dalwood CH, 'Iron Age Occupation, a Middle Saxon Cemetery, and Twelfth to Nineteenth Century Urban Occupation: Excavations in George Street, Aylesbury, 1981' *Recs Bucks*, 25, 45.
- Jones GG, 1983. 'The animal bones' in Allen D and Dalwood CH, 'Iron Age Occupation, a Middle Saxon Cemetery, and Twelfth to Nineteenth Century Urban Occupation: Excavations in George Street, Aylesbury, 1981' *Recs Bucks*, 25, 31-44.
- Kerridge E, 1967. *The Agricultural Revolution*. (London: Allen and Unwin).
- Levitan B, (nd). BONEREC program (unpublished)
- Lilley JM, Stroud G, Brothwell DR and Williamson MH, 1994. *The Jewish Burial Ground at Jewbury, The Medieval Cemeteries: The Archaeology of York 1213* (Council for British Archaeology, York)
- Magilton JK and Lee F, 1989. 'The leper hospital of St James and St Mary Magdalene, Chichester' in Roberts CA, Lee F and Bintliff J (eds) *Burial archaeology: Current Research, Methods and Developments* (BAR Brit Ser 211), 249-65
- Margeson S, 1993. *Norwich Households. Medieval and Post Medieval finds from Norwich Survey Excavation, 1971-78. (East Anglian Archaeology 58)*.
- McCarthy MR & Brook CM, 1988. *Medieval Pottery in Britain AD 900-1600*. (Leicester Univ Press)
- Mills JM, 1995. 'The Finds Catalogue' in Ivens R, Busby P and Shepherd N, *Tattenhoe and Westbury: Two Deserted Medieval Settlements in Milton Keynes* Buckinghamshire Archaeol Soc Monogr Ser 8 (Aylesbury), 335-396.
- Moore J, 1979. 'The remains of a Seventeenth-Century Clay Pipe Kiln at 13 Castle Street, Aylesbury, and the Pipes from a probable Kiln Site at Whitehall Street' *Recs Bucks* 21, 123-32.
- Moran NC and O'Connor TP, 1994. 'Age attribution in domestic sheep: a pilot study of available sources', *Int J Osteoarchaeol* 4, 267-285.
- Mynard DC & Zeevat RJ, 1992. *Great Linford*. (Buckinghamshire Archaeol Soc Monogr 3)
- O'Connor TP, 1984. *Selected groups of bones from Skeldergate and Walmgate. The Archaeology of York 1511* (York, Council for British Archaeology)
- O'Connor TP, 1995. 'Size increase in post-medieval English sheep: the osteological evidence' *Archaeofauna* 4, 81-91.
- Ordinance Survey, 1973. *Britain Before the Norman Conquest*
- Oswald A, 1975. *Clay Pipes for the Archaeologist* BAR Brit Ser 14
- Pevsner N and Williamson E, 1994. *The Buildings of England: Buckinghamshire* (Harmondsworth; Penguin Books).
- Rouch FA, 1985. *Cultivated Fruits of Britain: Their Origin and History* (London: Oxford Univ Press)
- Rogers J and Waldron T, 1995. *A Field Guide to Joint Disease in Archaeology* (Chichester, John Wiley and Son)
- Russell EJ, 1957. *The World of the Soil* (London: Collins).
- Sadler P, 1990. 'Faunal remains', in J Fairbrother *Faccombe Netherton; excavation of a Saxon and medieval manorial complex, Part II* Brit Mus Occ Pap 74, 462-508.
- Sadler P, 1991. 'The use of tarsometatarsi in sexing and ageing domestic fowl (*Gallus gallus* L.), and recognising five-toed breeds in archaeological material' *Circaea* 8,1 (1991 for 1990) 41-48.
- Saunders C, 1973. 'The Pre-Belgic Iron Age in the Central and Western Chilterns', *Archaeol J* 128, 1-30.
- Schofield J & Leech R (eds), 1987. *Urban Archaeology in Britain*. (CBA Res Rep 61)
- Shepherd IAG, 1985. 'Jet and Amber' in Clarke DV, Cowie TG and Foxon A (eds) *Symbols of Power at the Time of Stonehenge* (Edinburgh: HMSO/National Museum of Antiquities of Scotland).
- Sherlock RL, 1922. *The Geology of The County Around Aylesbury and Hemel Hempstead*, (Memoirs of the Geological Survey; Explanation of Sheet 238)
- Silver IA, 1969. 'The ageing of domestic animals', in D. Brothwell and ES Higgs (eds) *Science in Archaeology*. London, 283-302.
- Stevens J, 1884. 'Remains found in an Anglo-Saxon Cemetery at Taplow' *Brit Archaeol J* 40, 61-71
- Stirland A, 1987. 'A possible correlation between os acromiale and occupation in the burials from the *Mary Rose*' *Proc Fifth European Meeting of the Palaeopathology Association, Sienna* 327-333
- Sukkop H, Blume H-P and Kunik W, 1979. 'The soil, flora and vegetation of Berlin's wastelands' in IC Laurie (ed) *Nature in Cities*, 115-32 (Chichester: John Wiley)
- Temple MS, 1929. *A Survey of the Soils of Buckinghamshire* (University of Reading).
- Trotter M, 1970. 'Estimation of stature from intact limb bones', in TD Stewart (ed) *Personal Identification in Mass Disasters* (Washington, Smithsonian Institution) 79-125
- Trench JC and Fenley P, 1991. 'The County Museum Buildings, Church Street, Aylesbury', *Recs Bucks*, 33, 1-43.
- The Viatores, 1964. *Roman Roads in the South East Midlands* (London: Gollancz)
- Waldron T, 1994. 'The human remains', in V Evison *An Anglo-Saxon cemetery at Great Chesterford, Essex* (York, CBA) 52-65
- Waugh H, Mynard DC and Cain R, 1974. 'Some Iron Age Pottery from Mid and North Bucks with a Gazetteer of Associated sites and Finds', *Recs Bucks*, 19, 373-421.
- Wells C, 1964. *Bones, Bodies and Disease* (London: Thames and Hudson)



- West IM, Anderson FW and Faulkner PA, 1975. 'The Stone' in C Platt and R Coleman-Smith *Excavations in Medieval Southampton 1953-1969: 2 The Finds* 303-314.
- Wilson R, Grigson C and Payne S (eds), 1982. *Ageing and Sexing Animal Bones from Archaeological Sites*. (BAR Brit Ser 109).
- Wiseman J, 1986. *A History of the British Pig*. Duckworth.
- Woodfield C, 1981. 'Finds from the Free Grammar School at the Whitefriars, Coventry, c.1545 - c.1557/58 *Post Medieval Archaeol* 15, 81-160.
- Workshop of European Anthropologists, 1980. 'Recommendations for age and sex diagnosis of skeletons' *J Hum Evol* 9 517-549
- Vince A, 1987. 'The study of pottery from urban excavations' in Schofield J. & Leech R (eds), *Urban Archaeology in Britain*. (CBA Res Rep 61), 201-213.
- Vince A, 1990. *Saxon London, An Archaeological Investigation* (London; Seaby).
- Yeoman PA, 1983. 'The Medieval Pottery' in Allen D and Dalwood CH, 'Iron Age Occupation, a Middle Saxon Cemetery, and Twelfth to Nineteenth Century Urban Occupation: Excavations in George Street, Aylesbury, 1981' *Revs Bucks*. 25, 20-29.
- Yule B, 1990. 'The 'dark earth' and late Roman London' *Antiquity* 64, 620-28