INVESTIGATIONS AT PANN MILL, HIGH WYCOMBE

STANLEY AND PAULINE CAUVAIN

with contributions by PETER HAZZARD AND JOHN STEANE

Excavations at Pann Mill, High Wycombe have revealed evidence for at least three phases of mill buildings on the site. The earliest is represented by timbers and chalk floors dating to the fourteenth century, which may possibly be linked with historical references. Ceramic from the sixteenth and seventeenth centuries indicates a later phase on site, possibly related to a group of timbers. In the early nineteenth century the mill was rebuilt. Large quantities of pottery and other domestic material were dumped into the mill leat at this period. Part of the foundations of the mill building demolished in 1971, were revealed. The animal bone evidence suggests that activities on the mill site were associated with fulling in the medieval period rather than corn milling.

The river Wye rises in West Wycombe and flows through High Wycombe on its way to the join the River Thames at Hedsor. The flow of water in the river has been sufficient to support a number of water mills along its length at different times. The Domesday Survey records three mills in West Wycombe and six in High Wycombe and by the late 18th century many more were working along the 22km length of the river Wye, one of which was at Pann mill.

Pann mill lay about 800m to the south-east of the centre of the town of High Wycombe (Figure 1), immediately south of the A40 London Road. A little to the north-west are the remains of the medieval hospital of St. John, and about 600m southeast the site of a Romano-British villa on Penns or Holywell Mead (Hartley 1959).

The last watermill on the site was active until 1967 (High Wycombe Society, 1976). Most of the mill and associated buildings were demolished by the local Council in 1971. All that was left standing

was the waterwheel, its supporting wall, and some of the mill machinery. The site was also levelled and landscaped. Enthusiasts from the High Wycombe Society took an active interest in the site and formed the Pann Mill Restoration Group, A new building was erected to include the existing wheel and its supporting wall. It was hoped that this would further the restoration of the mill to working condition. The alignment of the new building was largely independent of any alignment associated with previous buildings. Periodically water was diverted from the existing river to turn the restored wheel. As recreational activity increased on the site it became clear that work on the grounds around the new mill building would be needed to improve operational conditions for the existing wheel.

As there was no information available from the demolition period it was considered that archaeological investigations in advance of any groundwork were desirable to check the nature of any below ground remains. This report describes those

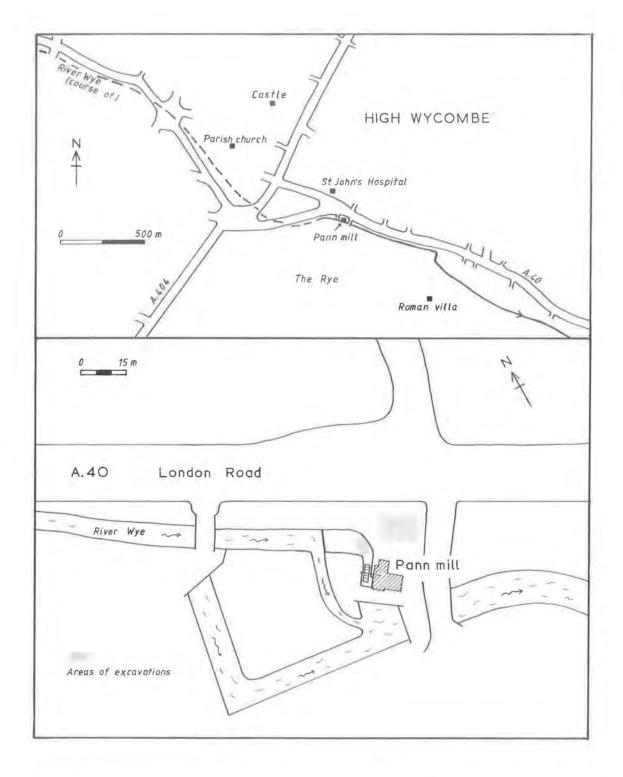


Fig. 1: Principal features in High Wycombe (upper) and location of Pann Mill (lower), showing existing waterwheel and attached modern building.

investigations and an associated historical survey.

The site

The mill is situated on the alluvium of the Wye river valley which overlies gravels. Immediately to the north across the A40 London Road, the ground rises to become a typical Chiltern chalk hill capped with patchy clay and flints.

The current layout of the Pann mill site (Fig 1) largely reflects changes which have occurred since the demolition of the last working mill on the site. The flow of the river feeding the mill is from the north-west to the south-east; however, it has been the subject of several man-made diversions. One such diversion occurs where the river first enters the site and carries the water immediately southwards for about 50m before turning east and resuming the N-W/S-E flow (Fig 1). This alignment forms the western and southern boundary of the existing site and may be of some antiquity.

A second southward diversion of the river occurs about 30m further S–E downstream from the first. This is a modern diversion of the water flow which otherwise would pass though the present wheel-pit (Fig 1) with consequent potential for damage to the wheel. A sluice arrangement is provided at this second point to allow for diversion of the flow of water through the existing wheel-pit in order to turn the wheel when required for demonstration purposes. For water to flow into the existing wheel-pit it still has to make a southward turn. This diversion is also of some antiquity. It is possible that a weir/sluice about 100m upstream may have been associated with controlling the flow of water to the mill.

Survey

No records describing the demolition of the mill and subsequent extensive landscaping of the site survived, nor information as to whether parts of the mill remained below ground. There was sufficient space to carry out a limited resistivity survey. This identified a number of possible wall alignments and a large pit or ditch. In several places there were areas of what, at the time, was taken to be dense rubble. The survey only provided sufficient evidence to suggest a fragmentary plan for the mill building but did suggest the presence of extant remains.

Examination of available maps for the Pann Mill site, coupled with the ground survey, allow the approximate location of the mill and adjacent mill house to be established (Fig.2: position indicated by dash-dot line). Older photographs of the buildings show a watercourse apparently running under the junction of house and mill, somewhat further north of the current alignment. The approximate location for this watercourse is shown on Fig.2. The general alignment, if projected westwards (upstream), coincides approximately with the large pit or ditch identified during the resistivity survey. When projected even further westwards the alignment coincides with the point at which the existing watercourse diverts southwards to flow through the present wheel pit. These observations and the ground survey were used to identify locations for possible excavation.

The excavations

Area 1 (Figs 2-4)

Subsequent to the resistivity survey a $4 \times 7m$ area was stripped of turf (area 1) to the north-west of the modern mill building (Fig. 2). This area was chosen to encompass the suspected large pit recorded during the resistivity survey and a number of the tentative wall alignments.

Beneath the turf and the topsoil was a compacted surface of finely crushed and broken bricks. This material was clearly associated with the demolition and levelling of the site. Immediately below were a number of features, the principal of which are illustrated in Fig.3. The most crucial feature was also one of the smallest. Historical photographs of the mill and adjacent house show that the frontage of the house stood slightly forward of the main mill building (see also Fig.2) and, on the south side of the house at this point, a vertical drainpipe can be clearly seen. The base of this drainpipe was identified during the excavation (**H** in Fig.3) and provided an important clue to the interpretation of the rest of the features in Area 1.

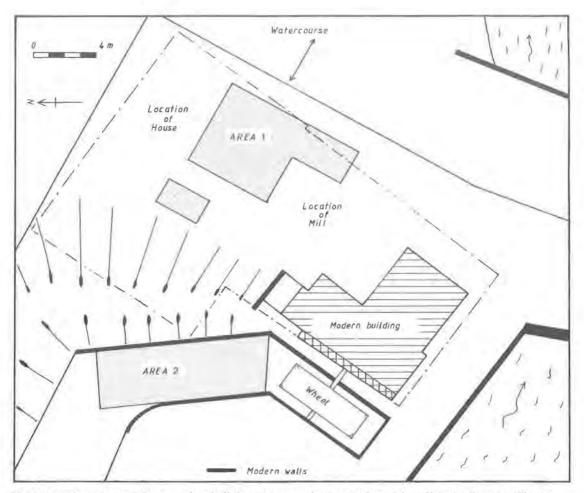


Fig. 2: Location of excavations, modern building and approximate position of demolished mill and millhouse.

The areas of concrete revealed in the trench (Fig.3) were undoubtedly associated with the mill building, confirmation of this being given by former mill workers. The concrete limited the potential for excavation and investigation of much of the brickwork.

The mill frontage ran roughly north-south (left to right on Fig 3). At the southern end of Area 1 a cobbled yard butted onto it. The yard surface mostly comprised of irregular and broken flints, with some broken pottery. A wooden post (Fig.3, \mathbf{P}) had been set where the yard came close to the house, presumably to protect it from damage by visiting carts.

After removing the 1970 demolition layer it

became apparent that the centre of Area 1 was occupied by a large pit, which proved to be a wheelpit, the upper layers of which were filled with rubble and 20th century rubbish. This pit was associated with an arched, brick-constructed culvert running west to east, partly beneath the remains of the mill house with the drainpipe (H) set into the top. The same photographs which included the drainpipe, also revealed that there was a greater width to the outflow of water from under the mill than seen at present and, at the time of the photograph, the culvert exit was open.

Both the eastern and western ends of the wheelpit were spanned by brick arches (Fig.3). The eastern arch had become incorporated into a common wall linking the house to the north and mill to the

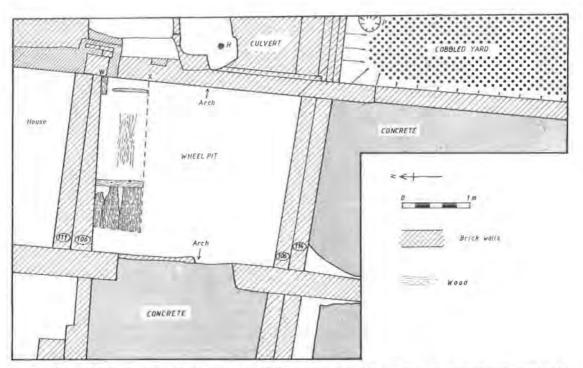


Fig. 3: Principal features excavated in Area 1. H = drainpipe, P = posthole, 106 and 114 brick linings for wheelpit, W-X wheelpit section (see Figure 4).

south as well as the mouth of the culvert. The top of the western arch had been reduced in height in the centre and the mouth imperfectly sealed with a metal sheet at a time when when a concrete floor was laid over it.

Both northern and southern sides of the wheel pit were lined with two lines of independent brick walls, 106 and 111/114 (Fig.3). The type of bricks used differed between the two lines and suggest a re-building and narrowing of the sides of the wheel pit at some point in time. The bricks used in the later of the two pit linings, 106, were fairly uniform in size on both sides and had approximate dimensions of 220 × 105 × 60mm. The dimensions of the bricks from the earlier linings were slightly different, with those from features 111 being approximately $225 \times 100 \times 70$ mm and those from 114 220 \times 100 \times 60mm. Although this need not necessarily imply different periods of construction, merely that a different batch of bricks were available for construction purposes, it does seem more likely that the wheel pit was re-lined on at least one occasion.

A small section (Figs. 3 & 4, W-X), was cut down through the material filling the wheel pit. The first layer 105 (Fig.4) was mainly broken brick, mortar and soil associated with the demolition of the mill. The next layer 118 (Fig.4,) also contained some bricks but they were mixed with a dark silty soil and the whole was less rubble-like in appearance. Next in the sequence was a layer of clean chalk rubble 119 (Fig.4,) and finally there was a layer of black, silty soil 120 (Fig.4).

The black silty soil at the very bottom of the section covered a number of partly-decayed timber planks (Fig.3). Although the ends of these were largely absent through decay it was evident that they had formerly been nailed with iron nails onto cross-timbers, which still survived in place. These timbers almost certainly represent the bottom lining of the former wheel pit. Oral evidence suggests that the chalk and black soil/brick layers were the result of infilling during this century. The dating of the wheel-pit and subsequent activities are discussed later.

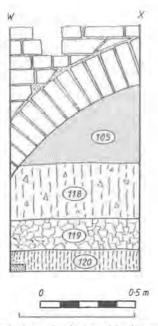


Fig. 4: Wheel-pit section in Area 1 looking east, showing part of arch of tailrace.

A small section to the west of Area 1, just below the modern banking (Fig.2), was stripped of turf, but as the first significant layer was concrete excavation did not proceed.

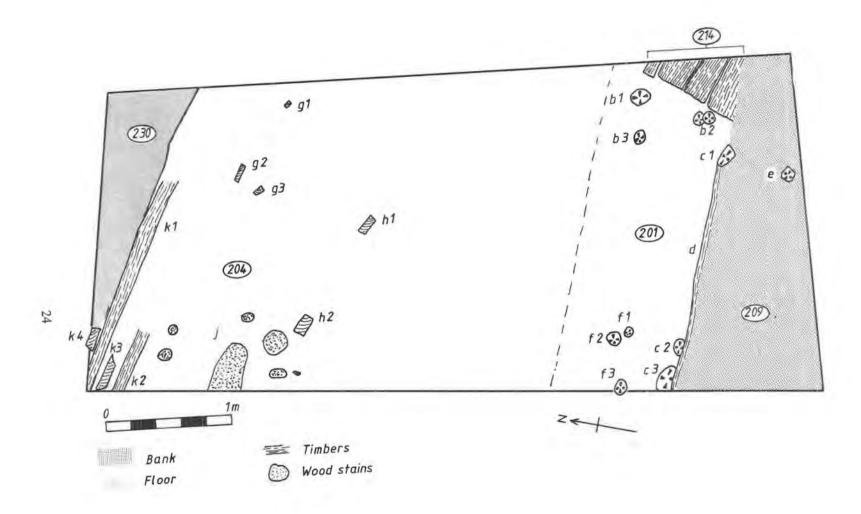
Area 2 (Figs 2, 5, 6)

The end of the modern leat feeding the existing wheel (Fig.2) is kept dry except for a limited number of demonstration days when water is diverted into it to turn the wheel. This length provided a unique opportunity to examine an area adjacent to the site of the last standing mill. A section approximately $6 \times 2m$ was chosen for excavation.

The main features of all periods in this trench are summarised in Fig.5, and in the composite section illustrated in Fig.6. Features underneath the modern rubbish layer (208 in Fig.6) can be summarised as follows :

 A floor or hard-standing 230 (Figs.5 & 6,) made from small chalk blocks and flint with some tile and bricks. Associated with this were two horizontal decayed timbers (Fig.5, k1+k2) and two vertical posts (Fig.5, k3+k4) which probably held the horizontal timbers in place. The close relationship of the floor with the timbers was confirmed by the slight lip of material which had formed over the horizontal post k1. It is likely that this 'floor' was the remains of one of the outbuildings shown on older plans of Pann Mill dating from the last 200 years or so.

- A bank 209 (Fig.5) built of compacted chalk rubble held in place by wooden planks (Fig.5, d) and posts (Fig.5, c1, c2 & c3). A single post (Fig.5, e) was set into the matrix of the bank. The bank's alignment was roughly at right angles to the existing dry leat and was probably put in place to direct water into the wheel pit located in the excavation of Area 1. This implies a construction date before the mid-19th century.
- 3. Most of the area between the floor 230 and the bank 209 consisted of a fill 201 of domestic rubbish, broken pottery, bones, clay pipes, oyster shell, broken bottles, bricks, tiles and some metalwork (Fig.6,). These artefacts were contained within a yellow-grey, sandy matrix. A large number of ceramic vessels were recovered, almost all of them broken into many pieces though a significant number could be reconstructed. Much of the ceramic illustrated in Figs 12-14 derived from this layer. It appears that the watercourse had been used as a convenient dumping place for unwanted domestic items, many of which were intact at the time of deposition.
- 4. Two groups of post holes (Fig.5, b1, b2 & b3 and f1, f2 & f3) were set in a layer of rubble 210 (Fig.6), and partly covered in the rubbish of layer 201. Taken together these posts and rubble appear to be the remains of an earlier bank abutted to the bank 209. This hypothesis is supported by the presence of a decayed vertical timber (Fig.6, 1) creating an interface between the bank 210 and dark soil layer 202 (Fig.6).
- The ends of four decayed timbers 214 (Figs 5 & 6) were revealed, mostly in section, underneath the bank 210. As far as could be determined these timbers were lying horizontal, at a slightly different angle to, and below, the rub-



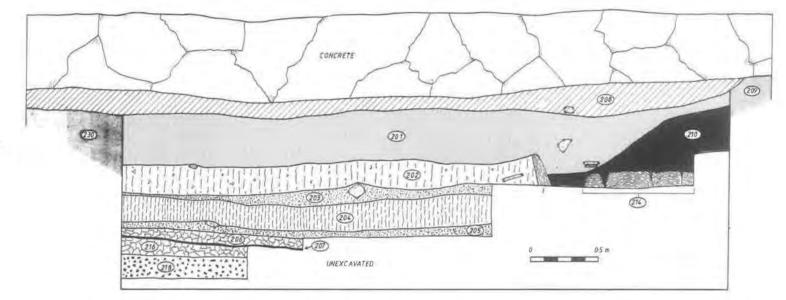


Fig. 6: Principal composite section in Area 2 looking east.

25

ble of bank 210. The relationship of these timbers with other features in the section is unclear. They may be part of the construction of bank 210 or may be associated with an earlier mill phase, such as a timber leat.

- Beneath the rubbish-rich layer 201 was a layer of dark grey silty soil 202 (Fig.6), with few artifacts, some small stones, shell and small pieces of decayed wood.
- A yellow, sharp sandy layer 203 (Fig.6) was next in the main section. This was not uniformly spread over the excavated area and contained some 16th century pottery (Fig.12, no.1), and broken tile.
- 8. A series of decayed and fragmented wood stains (Fig.5, j) were revealed in 204, a layer of dark grey, almost black silty-soil 204 with a dense texture (Fig.6). When the soil began to dry during excavation vertical fissures formed within the matrix so that it could be removed as blocks. In some cases the woody material had a circular cross section and appeared to be unworked. Some pieces were about 20 or 30 mm in diameter; others a little larger. Sometimes the woody material appeared to consist of several pieces closely related, or 'bound' together. At times these stains and sections of decayed wood resembled the appearance of portions of wattle fencing.
- Beneath the dense soil layer 204 was another yellow coloured, sharp, sandy layer 205 (Fig.6), containing small flints, pieces of broken tile and brick, and some pottery. Some of the tile and brick had traces of mortar on their broken faces.
- 10. A compacted chalk and flint floor 206 (Fig.6) was beneath. The chalk consisted of small angular lumps and the whole matrix had been compacted to such a degree that it only yielded to vigorous assault with a pick axe. At first sight the floor had a natural appearance but the presence of occasional broken pieces of tile within the matrix confirmed its man-made nature.
- 11. A thin layer of dark, fine-textured soil 207

(Fig.6) containing occasional pieces of tile and sherds of medieval pottery separated the floor **206** form another chalk floor **216** (Fig.6). This floor was comprised of angular chalk blocks, again well compacted, but without flints.

- 12. Two vertical timbers (Fig.5, h1 & h2) stood in the excavated area to heights greater than 1.3m so that the tops of the timbers projected into the rubbish of layer 201. They were carefully prepared with regular rectangular cross-sections. Due to decay it was not possible to observe the surface finish on either timber. The timbers were in place when the lower of the two chalk. floors 216 (Fig.6), was created, since the chalk of that floor fitted tightly around them and there were no signs of post holes at this level. A group of smaller vertical timbers (Fig.5, gl, g2, & g3) were probably associated with these two main timbers. These groups of timbers and the two chalk floors suggest the presence of an early building on this part of the site.
- 13. The water table restricted access to the lowest level reached in the excavation which was only sampled. It consisted of a flint gravel and pebble matrix 218 (Fig.6), probably the site 'natural'. The two large vertical timbers described above, h1 & h2, were set into it though it was not possible to determine to what extent, or to determine the presence of any post-pits associated with these timbers.

Discussion and Dating

The earliest datable items from the excavation are a few residual sherds of Romano-British pottery and tile. Their presence is hardly surprising given the proximity of site to the the villa on Penns Mead. The sherds date to the second or third centuries AD. A highly corroded copper-alloy coin may also be Roman.

A group of eight body sherds from layer 207 (Fig.6) provide important clues to the earliest dates for the site. They have a very similar fabric and appearance to material found at Ashwells, Tylers Green (Cauvain *et al.* 1989), and probably date from the mid-14th century. There is no reason to doubt that the pottery sherds are contemporary

with the formation of the black soil layer 207 since the only other material found in this context were fragments of tile, also likely to be medieval. A date earlier than the mid-14th century for the chalk floor 216, and the upstanding posts h1 and h2 (Fig.5), follows, since there was no evidence for a post-pit being dug through the chalk floor 216 to accommodate them. The same reasoning also applies to the post group g1–3. A pre-mid 14th century date for the posts would suggest that these timbers are associated with the mill described as "1a Pannel" in AD 1344, owned by Sir Hugh de Neweton (see Historical Notes).

The second (upper) chalk floor **206** (Fig.6), then clearly dates to some time after the mid-14th century. Both floors consisted of clean chalk blocks with no contained material which would assist dating. In the layer immediately above the second **205** (Fig.6), there was a considerable amount of medieval tile. The few pottery sherds recovered from this layer included two of medieval date but others were more likely to date to the 16th century. Thus a later 14th or a 15th century date for the second chalk floor is likely.

The function of the floors is not clear. Both incorporate the upstanding posts and were laid with great care. Both were very compacted and difficult to dismantle, even after being waterlogged for centuries. The most satisfactory explanation is that they represent the floors of a building, perhaps the earliest mill itself, probably dating to the earlier 14th century with a re-flooring in the 15th century. It is considered that they are unlikely to represent the banking for a former mill stream because of their careful construction and almost perfect levelness.

In the layer subsequent to the floors 205, the presence of large quantities of sharp sand indicates a period of relatively rapid water flow across the site and suggests that the medieval mill, represented by the chalk floors, had been cleared. Some of the timbers of that mill remained upstanding but immersed in the new mill stream which now crossed the site, although position of the postulated replacement mill cannot be ascertained from the limited excavation. Layer 204, above 205 (Fig.6), with its silt-like matrix suggests a period of relatively slow water movement or standing water on

the site with the mill being little used or standing idle. Some supporting evidence for a period when the site was little used is provided by the presence of nettle and blackberry seeds within the silt, though there is no certainty that these were derived from the Pann Mill site itself since they may have been carried to their current location by the river, Associated with this silt layer are the wood stains group j and other wood stains sectioned during the excavation. It was noted above that these on occasion had the appearance of sections of wattle-type fencing. This could well have been used to stabilise the bank of the mill stream and, in periods when the mill was little used, may have been allowed to decay and fall into the stream bed. This sequence of events would explain the variations in alignments and angles of the wood stains. There was little in the way of man-made material contained within layer 204. Ceramic dates ranged from the late 17th to early 18th century.

A repeated sequence of still and then rapid water, was shown by layers 204 and 203 (Fig.6). In this case there were no dateable finds. The vertical timber I (Fig 6.), appears to be contemporary with the silt layer 202 at least. The hypothesis is that timber I is part of a man-made stream bank represented by layer 210 (Fig.6), partly cut out later by 201. Ceramic material in bank 210 dates within the 18th century. The timber group 214 is sealed by 210 and so must be earlier than the 18th century in date.

Stream bank 209 with its accompanying posts and horizontal timbers overlies and is later than 210. The alignment of bank 209 provides one side for a watercourse which links directly with the wheel-pit revealed in Area 1 and so these two features are likely to be contemporary. The northern bank of this pre-1860 watercourse is represented by the timber alignment k and the 'floor' 230. This latter feature is the floor of one of the outbuildings shown on late 19th and 20th century maps.

There is oral evidence for a wheel operating in the pit in Area 1, referred to as 'inside the mill', in the early 20th century, in addition to the wheel which remains today outside of the mill. The 'inside' wheel pit is thought to have been filled-in during the 20th century starting with a layer of clean chalk rubble (Fig.4, 119). However, there are no dateable finds associated with this. The layer above the chalk (Fig.4, 118) is also a deliberate infill with no finds. The mill house underwent a number of modifications in its history and the presence of the wheel-pit, whether empty or full, was appreciated by the builders since a venting arrangement was let into the brickwork on the north side of the wheel-pit, presumably to avoid problems with damp in the house foundations. The house clearly stood over part of the of the wheel pit as has been confirmed by the location of the drainpipe **H** (Fig.3). Folk memory gives no information on the removal of the 'inside' wheel.

The 'outside' wheel to the rear of the mill is thought to have been placed there around 1860. The alignment of the timber revetted bank 209 immediately in front of this is a little strange if the 'inside' wheel was still operating. One possibility is that the bank 209 may have been associated with splitting and regulating water flow to both.

Historical notes

by Peter Hazzard

A full account of the history of Pann Mill is being prepared for publication elsewhere. The following notes provide a brief account to supplement the archaeological report. References are to:

VCH: The Victoria County History: Buckinghamshire

Church Rate Books held at BRO ref PR249/12

- First Ledger Book, ed. R. W. Greaves The first ledger book of High Wycombe BRS 1956. (Originals in Little Market House)
- Second Ledger Book, ed. W. A. Newall The ledger of the Corporation of Chepping Wycombe in Com. Bucks 1684– 1770; No. 2. High Wycombe History Society 1965
- Title deeds; in possession of Wycombe District Council Legal Department.

For other references see Bibliography.

- 1086 Mill presumed to be one of six corn mills mentioned in Domesday Book (VCH i, 1721 258, iii, 128).
- 1235 Pann mill held by Richard of Croyedene 1739 (VCH iii,128).
- 1344 Adam de Martham granted 'two watermills under one roof called la Pennell in Wycombe' to Sir Hugh de Newton (VCH iii,128).

- 1530 In possession of the Hospitallers at the Dissolution of the monasteries (VCH iii,128).
- 1643 Owned by Wase family from the early 1600's (VCH iii,128).
- 1667–1676 Samuel Knight paid rates (Church Rate Books).
- 1676-1685 Daniel Pierce paid rates (ibid).
- 1685 Widow Pierce paid rates (*ibid*).
- 1697 Widow Pierce paid rates (*ibid*).
- 1692–1771 Owners of Pann Mill paid rates on a hovel on the southside of the mill (*ibid*).
- 1706 Daniel Pearce, miller and Juror, sued for digging up the Rye, 'for the wast or spoyle by him committed in Digging and throwing upp of the ground in the Rye belonging to the said Borrough as well att the lower end thereof as all along by the banck side from the backside of his mill to the bridge comeing over the Brooke att the end of Mr Thurstons orchard or backside neare Horsenden Lane' (First Ledger Book (a)).
 - Daniel Pearce paid Land Tax (Land Tax Assessment, 1708).
 - (July) Pearce again sued for digging up the Rye 'next adjoyneing to the River'. 'That unless the said Daniall Pearce fill upp and level the said Ditches and pull upp and lay open the said Fences or inclosures so made and leave them in the State and condicion the same were in before the inchroachments made And in case the said DP shall neglect or refuse to Doe the same by eight and Twenty next after the Date ...' (First Ledger Book (b)).
 - (September) 'said Order was nott performed on the part of Daniell Pearce, That the present Towne Chamberlaine ... Doe fill upp the ditches ...' (First Ledger Book (c)).
 - Pearce again sued for Encroachments on the Rye (Second Ledger Book (a)).
 - William Allen, miller at Pann Mill, sued 'and every other person and persons who have made or Committed any trespass spoyle or Inchroachment in or upon the Rye belonging to the said Burrough by turning the water out of the antient water Course' (Second Ledger Book (b)).

1708

1709

1709

1	759	Issac King paid rates for Pann Mill until 1792 (Church rate books).	1898	Mill bought by High Wycombe Corpora- tion so that Easton Street could be wid-
17	771	Issac King, son, paying rates on 'new erected Stable and outhouses across the		ened. Mill house was reduced in size and the cottage demolished (Title Deeds).
		Riverer as well on rates on a Hovel on ye south side of Pan Mill' (<i>ibid</i>).	1900	Mill sold by Corporation to tenant F.Ware (Title Deeds).
1	794	Issac King, now described as iron-mer-	1921	Sold to R.C.Jarvis (Title Deeds).
		chant and miller (County Directory of Principla Inhabitants, 1794), leases Pann Mill to Thomas Edmonds Jnr who shortly	1967	Mill stops operating (High Wycombe So- ciety, 1976),
		after owns or leases Rye paper mill which burnt down in 1799 (Kingston, 1848).	1971	Sold to Borough of High Wycombe (Title Deeds).
1	857	Trust of Issac King assigns use of Pann Mills to Darvill family, 'All that messuage or tenement or dwelling house and water Corn Mills with the appurtenances com-	1971	Buildings demolished. (Bucks Free Press 22, 10, 1971)
		monly called Pann Mills , together with all standards going gears tacklings water-		The Finds
		wheels mill machinery and implements' (Title Deeds).		ollowing catalogues numbers given in to context numbers shown on plans and
13	859	G.Darvill purchases mill (Title Deeds).	sections.	

TABLE 1
Number of fragments per vertebrate species

Species					C	Context					
	100	101	105	201	202	203	204	205	206	207	208
Bos f. Domestic cattle	6	2		11		3		4	8	3	8
Sheep/goat	5	16	1	8	1	6	2	11	28	3	14
Sus f. Domestic pig	2	9		2					2		3
Equus f, Domestic horse									3	1	
Canis f. Domestic dog				1				2	3		1
Felis f. Domestic cat							- U				
Lepus europaeus Brown hare				1							
Domestic duck/Mallard				1			1				
Cygnus sp. Swan				1							
Gallus f. Domestic chicken				1		1					
Domestic goose/Greylag				1							
Total	13	27	1	27	1	10	4	14	44	7	25
Large mammal	4	1		t.		2			12		7
Medium mammal			1	1			1	- 0		1	10
Small mammal							I.				1
Unidentified long bone	4			.4			4		2		
Unidentified fragments	- L	23					1	- F		2	

Species		_			0	Context	· · · ·				
	100	101	105	201	202	203	204	205	206	207	208
Bos f. Domestic cattle	1	1		2		.1		1	.1	1	1
Sheep/goat	1	3	1	-2	1	-1	1	2	7	1	2
Sus f. Domestic pig	2	2		1					í		1
Equus f. Domestic horse									1	1	
Canis f. Domestic dog				40				Ŧ	1		1
Felis f. Domestic cat							1				
Lepus europaeus Brown hare				1							
Domestic duck/Mallard				1			1.				
Cygnus sp, Swan				1							
Gallus f. Domestic chicken				1		1					
Domestic goose/Greylag				1							

TABLE 2: The minimum number of individuals per vertebrate species

(i) The animal bone by John Steane

(a) Introduction

The animal bone assemblage consisted of 286 fragments all of which were examined and recorded for species, anatomy, condition and butchery marks. The assemblage was grouped by species and sub-divided by context, see Table 1. The minimum number of individuals represented are given in Table 2.

The assemblage was identified and recorded using reference material from Bournemouth University. Where identification of the species was impossible, the bones were recorded as large, medium or small mammal. If the bones were too fragmentary they were recorded as either unidentified long bones or unidentified fragments.

Tooth wear analysis was conducted on ovicaprine (sheep/goat) tooth wear using Grant (1982). The measurements followed von den Driesch (1976); the withers height calculations for the sheep utilised Teichert (1975), and the dog used Harcourt (1974).

(b) Preservation

The condition of the bone was good, with little sign of organic degradation. There was also no

TABLE 3: Percentages of fragments per species

Species	Percentages	
Bos f. Domest	ic cattle	14.3
Sheep/goat		32.8
Sus f. Domesti	c pig	6.3
Equus f. Dome	estic horse	1.4
Canis f. Dome	stic dog	2.4
Felis f. Domes	stic cat	0.3
Lepus europae	eus Brown hare	0.3
Domestic ducl	.Mallard	0.7
Cygnus sp. Sw	an	0.3
Gallus f. Dom	estic chicken	0.7
Domestic Goo	se/Greylag	0.3

evidence of gnawing. However, studies have shown that animal scavengers, especially dogs favour the ends of the bones (Brain 1967). If this happens to more delicate bones from smaller species, then the taphonomic breakdown will favour survival of the larger bones creating a bias in the species recovered.

A further bias occurs in the retrieval rate of the bones. Material from the site was not sieved and

r species

Bone type		Species	
	Cattle	Sheep/goat	Pig
Skull	n 2000 - 9	1	
including hor			
Mandible	2	3	4
Vertebrae	6	3	
Rib	15	5	
Pelvis	1	3	1
Humerus	3	4	2
Radius	3	4	2
Ulna	2	4	
Metcarpel	2	23	1
Phalanx		6	
Femur	1		
Tibia	2	10	2
Fibula			1
Metetarsel	1	19	
Scapula	1	1.	
Teeth		4	6
Sacrum	1		
Total	42	90	19

full retrieval was not attempted. There may therefore be a loss of information about the smaller bones, such as the phalanxes. Within the sample no bones of fish, amphibian or small mammal (such as rats and mice) were present.

Butchery also contributes to the taphonomic processes. Butchered bones, especially those of younger animals are susceptible to degradation and decay, which gives a bias towards mature animals. This bias is important in Medieval and postmedieval sites where immature cattle are favoured (Maltby *pers comm*), and so the cattle ageing patterns are altered.

(c) The mammal bones

Cattle

The cattle fragments made up 14.3% of the total sample (Table 3). They were represented mainly in

the medieval and the late post- medieval contexts. Within this sample ribs dominated with other meat bearing bones such as the forelimbs and hindlimbs occurring in low numbers (Table 4). However, there are more ribs in the body than other bones.

Butchery was most evident on the cattle bones. From the sample it would appear that the vertebrae were often cut in half, through the ventral plane, although in many cases the vertebral wings were removed. Butchery was also common on the ribs, Cut and chop marks were noted on 47% of the cattle ribs. Often the cuts/chops completely severed the ribs. In most cases multiple cutmarks were seen. These could indicate the storage of beef using sides of meat with the vertebrae split in half and the ribs broken from the sternum. This is similar to the technique used in abattoirs today for the storage of beef. It is the later post-medieval deposits that mainly utilise this technique. This butchery indicates that the butchery and carcass processing was done away from the site, with the sides of meat being brought in for storage and consumption.

TABLE 5: Withers heights

Height (cm)
56.8
58.8
53.9
58.6
53.5
54.8
57.7
58.1
56.2
58.2
58.9
59.9
Height (cm,
53.7

25.7

206

The lack of cattle mandibles restricted the ageing data, however, the complete but unfused metacarpals, and long bones indicate the consumption of immature individuals. The immature cattle appearing in the later post-medieval contexts are probable evidence for the consumption of veal (Dobney et al 1996, Armitage 1984 and Maltby pers comm). Evidence from other sites such as Aldgate, London (Armitage 1984) and St. Andrews Priory, York (O'Connor 1993) support this interpretation. The growth of dairying in England during this time meant that the male calves born to dairy cows were surplus to requirements. They were reared for a short time and then slaughtered for yeal. The immature cattle bones evident in this sample shows the late post-medieval attraction for veal at the dinner table.

The cattle bones in the assemblage, although fewer in number than those of sheep/goat, indicate the greater consumption of beef because of the greater carcass size of cattle represented.

Sheep/goats

This category provides 32.8% of the total sample. Only bones from sheep were positively identified. Within this sample it is the lower limbs that were most frequently found. The radii and ulnae contribute 8.5% of the sample and the tibia 10.6%. The most common bones are the metacarpals at 24.5% and the metatarsals at 20.2%. This high proportion of metapoidals is consistent with skinned animals seen on other sites. The collection of metapoidals suggests dumps of these bones, which have been removed from the skins of mature animals. Phalanges are under-represented but this may be due to differential retrieval. The ageing data come from two mandibles. Both suggest animals of about 3 to 4 years, an age range which in other sites may show wool and mutton areas. The

dumps of metapoidals are consistent with this as such bones come from skinned animals (Dobney *et al* 1996) and may here indicate the site use as a wool mill.

The sheep/goat samples also gave some examples of butchered vertebrae similar to those from the cattle assemblage. The post-1860 samples had a butchered scapula exhibiting possible hook marks (Dobney *et al* 1996).

The withers heights for sheep/goat samples (Table 5) were estimated using conversion factors of Teichert (1975). In the medieval and post-medieval contexts the height range was 53.06 to 59.8cm. These were all adult sheep. This is similar to Lincoln (Dobney *et al* 1996) and Exeter (Maltby 1979). Tooth wear data for sheep/goat mandibles are given in Table 6.

Pig

Pig bones accounted for 6.3% of the sample. The mandibles represented 21% of the pig sample, followed by the humerus, radius, tibia and fibula all of which were 10.5%. Unfortunately the sample was too small to allow further analysis.

Horse

The horse bones formed 1.4% of the sample. There were no evident butchery marks.

Dog

Dog bones represented 2.4% of the sample. Out of 4 bones 2 provided shoulder height estimates of 53.71 and 25.67cm (Harcourt 1974). The latter dog may show the presence of lap-dogs or rat-catchers, as it is of terrier size.

		Used	TABLE 6: Tooth wear analys on sheep/goat (Gra			
Context	Species	P4	MI	M2	M3	Total
205	S/G		М	G	G	41
207	S/G	G	к	G	F	38

Other mammals

One cat and one hare bone were identified.

(d) Bird bones

The bird bones represented 3.5% of the whole identified sample. These consisted of 2 duck fragments, 2 domestic fowl, 1 goose and 1 swan. The duck fragments may be of mallard or domestic duck, both of which could occupy the water channels near the site.

(e) Worked bone

- Bone handle from which protrudes a piece of metal (see Fig.6). Probably a small knife or awl. It may be part of a skin-working tool set.
- (ii) Distal and shaft of a sheep/goat metacarpal, polished, with a rectangular piece of bone removed from the rear of the shaft. Use unknown.

(f) Conclusions

The number of sheep metapodials in the deposit could suggest that the site was at one time connected with wool production since these bones are the waste produce of skinning. The age of the sheep based on tooth wear, although from a very small sample, ties in with the consumption of mutton and the slaughter of the animals at their peak time for both wool and meat production. The site was occupied during the medieval period when wool production was an important industry in England and in one of the later medieval layers, 206, by far the greatest proportion of the bones come from sheep. This (together with the absence of millstones discussed below) supports a hypothesis that the mill was used for fulling rather than the milling of wheat in the medieval period.

The on-site butchery demonstrates the preferred method of carcass processing. The sides of meat, especially beef could indicate the preferred diet, supplemented with other meats such as mutton. The rarer bones such as those of the hare and the domestic fowl would suggest that these were meats for special occasions.

(ii) Mollusca by Stanley P.Cauvain

A group of mollusca fragments were recovered from the lower of the two silt layers, **204** dated to 16/17th century. Five species were identified and are listed below with brief comment on their habitats.

Discus rotundatus, woodland litter, rotting wood.

Punctum pygmaeum, catholic in habitat.

Pomatis elegans, loose, calcareous soil.

Succinea sp., wet habitats.

Vertigo pygmaea, calcareous grassland but also known from wetlands.

The immediate environment of Pann Mill is likely to have supported all of the above species.

Marine molluscs were represented by oyster and mussel shells, mainly from late medieval and post-medieval contexts.

(iii) Seeds by Stanley P.Cauvain

A small collection of seeds were recovered from the lower of the two silt layers, 204 dated to 16/17th century. Six species were identified and they are listed below with brief comment on their likely environment for growth.

Sambucus nigra, 'elder', woodlands and hedges.

Silene dioica, 'red campion', shady, woodlands and hedges.

Polygonum sp. (lapathifolium/persicaria ?), besides ponds and other watery places.

Urticia dioica, stinging nettle, woodlands and hedges, waste land.

Rubus fruticosus, 'blackberry', woodlands and hedges.

Sinapsis alba, 'white mustard', annual, cultivated.

Since the seeds derive from a water-borne deposit they do not necessarily provide information on the immediate local environment. However, it is considered that the silt from which they derive was indicative of a period of slow moving or stagnant water on the site. Five of the species identified would be consistent with watery (e.g. *Polygonum sp*), somewhat overgrown (e.g. *Rubus fruticosus*) or neglected conditions (e.g. *Urticia dioica*). The odd species is *Sinapis alba* which is more likely to be associated with cultivation, perhaps in a garden plot nearby.

(iv) Wooden objects

Discussion of wooden artefacts recovered during the excavation is confined to the small finds and does not include any of the extant timbers. All of the items described were recovered from layer **201**, dated to the 19th century.

Lace bobbins

- 1. Incomplete, 60mm+ long (Fig.8, No.1).
- 2. Incomplete, very similar to 2, 46mm long.

Spoons

Parts of five condiment spoons were recovered.

- Complete, 79mm long, roughly circular bowl (Fig.8, No.1).
- Complete, 111mm long, elliptical bowl (Fig.8, No.2).
- Largely complete, similar to 2, 103mm long, elliptical bowl, part missing.
- Incomplete, elliptical bowl and part handle, similar to 2 50mm+ long.
- Incomplete, similar to 2 elliptical bowl, part missing, 110mm+ long.

(v) Metal objects

A large number of metal objects were recovered during the excavations. Many of them were highly corroded pieces of iron from 19th/20th century contexts and so, with a few exceptions have been ignored. Some nails, probably from rotted timbers from previous building or fences, were recovered from layers **204** (16/17th century) and **205** (14/ 15th century). A single timber nail was also recovered from layer **207** (14th century) between the chalk floors.

Items of particular note are described below with their context numbers :

- Large knife blade, ferrous, much corroded, section likely to have been somewhat thicker than illustrated (Fig.9, No.1), 205.
- Small knife blade, ferrous, much corroded, section likely to have been somewhat thicker than illustrated (Fig.9, No.2), 205.

- Bill, ferrous, for dressing mill stones (Fig.7, No.3), top-soil.
- Bill, ferrous, for dressing mill stones, length 260mm, width 32mm, maximum cross-section 26mm at mid-point (130mm) gradually tapering to 2mm at both ends, 105.

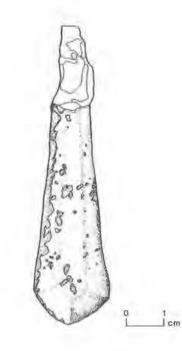
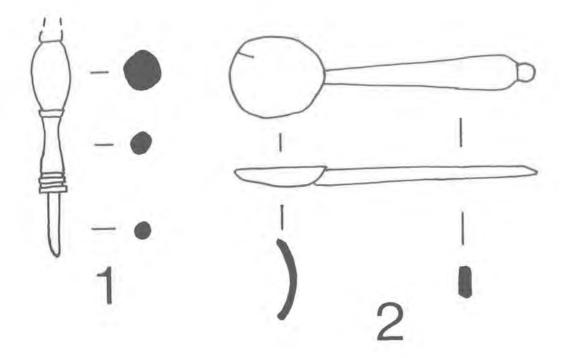


Fig. 7: Bone handle (1:1)

(vi) Glass

A significant quantity of glass was recovered. Much was broken bottle glass of 19th and 20th century date. A number of intact glass vessels were also recovered, including wine and apothecary bottles ranging in date from late 17th to mid-18th centuries. Most came from contexts of later date than that suggested by the vessels and may represent a 'clearing-out' of an old collection which was dumped into the mill leat. The water and any silt would have softened the impact and may explain why so many examples were still intact when exca-



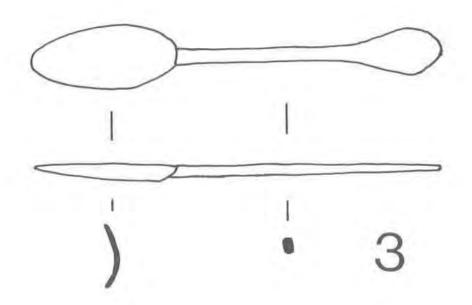


Fig. 8: Wooden objects (1:1)

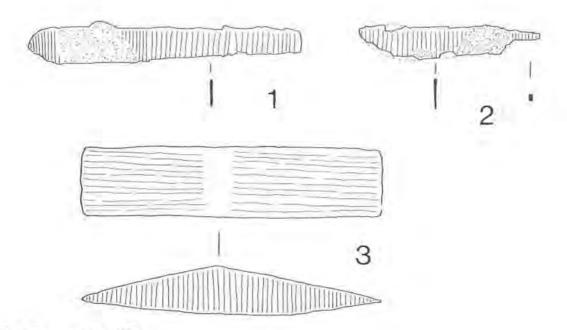


Fig. 9: Ferrous objects (1:2)

vated. A few vessels from the lower of the silt layers, 204, were probably a contemporary deposition.

- 1. Green wine bottle, late 17th (Fig.10, No.1), 201.
- Green wine bottle, early to mid 18th (Fig.10, No.2), 204.
- 3. Green wine bottle, mid 18th (Fig.10, No.3), 201.
- Clear phial, mid 18th? (Fig.10, No.4), 201. Second example from 201, two similar examples from 208.
- Small, light green coloured bottle, late 17th/early 18th (Fig.10, No.5), 204. Similar examples from 208 (1) and 210 (1).
- Light green coloured bottle, late 17th/early 18th (Fig.10, No.6), 210. Similar example from 210.
- Light green coloured bottle, late 17th/early 18th (Fig, 10, No.7), 205. Similar example from 210.
- Small, green coloured jar/bottle, late 17th/early 18th ? (Fig.10, No.8), 204.

(vii) Clay pipes

A large number of clay pipe fragments were recovered from many contexts including 111 bowls. The pipes range in date from the early 17th through to the later 19th century. The majority came from area 2 and had clearly been deposited in the watercourse.

The catalogue entries of marks below, are in order of approximate date (Oswald 1975; Ayto 1994). The 'Features' record first the location of the mark and its general form, then other noteworthy features on bowl or stem. Comparative material is noted, the main site references being Aylesbury, George Street = AGS (Allen and Dalwood 1983) and Bierton = BIE (Allen 1986). All context numbers in which the particular form was found are listed. Contexts recorded in Figs.4– 6 printed in **bold**.

(viii) Pottery

The bulk of the pottery on the site dated from the post-medieval period. Given the large quantity of post-medieval pottery recovered a detailed study was not undertaken, but representative samples and more unusual pieces from the individual groups have been selected for illustration. In the catalogue which follows the abbreviations 'ext.' and 'int.' refer to the exterior and interior surfaces of sherds. Context numbers are given in **bold**.

Mark	Features	Contexts	Date	No
	Unmarked	100	1610-1640	1
TD	Base, heart	100/204	1660-1680	2
IE-	(AGS4, ?Aylesbury)	100/204	1602 1716	
4F	Base, heari (Henry Plooke, AGS6)	100/204	1692-1715	
IF	Baxe, heart+3 dots	204	(692-1715	
	(Henry Flooke, AGS6)			
NIN	Spur	201	1680-1710	1
Star	Spur, left only Unmarked	201 204	1680-1710	
TW	Base, heart	101	1700-1750	
	(BIE18)		1100 1000	
1W	Spur	201/210	1700-1770	-2
T2M	(BIE15) Base, heart+dot	204	1700 1770	7
FH	(AGS8)	204	1700-1770	
A	Buse, circle+dot	204	1700-1770	
	(AGS5)			
RB	Base, heart	204	1700-1770	
RF	Spur Unmarked	204	1700-1770	
	Unmarken	100/101/201 203/204/205	1700-1750	
		210		
	Unmarked	100/208	1740-1800	4
WN	Spur,	201	1780-1820	1
WN	Spur, rib bowl	100/201 201	1780-1820	1
WN	Spur, rib bowl and leaves	201	1780-1820	,
WN	Spur, line+doi bowl	201	1780-1820	
TW	Spur, stamp on bowl (T7 Wood)	201/208	1780-1820	
	(See Fig.11, No-1)			
TW	Stamp on bowl (T3 Wood)	201	1780-1820	
TW WP	Spur Spur	201/208 201/210/204	1780-1820	3
we	(AGS12, ?Aylesbury)	208	1760-7620	
WP	Spur, rib bowl	201	1780=1820	
	(AGS12, ?Ayleshury)			
RP	Spur, rib bowl	100/201/202	1780-1820	11
RP	204/210 Spur	203/210	1780-1820	
WF	Spur	201/203	1780-1820	
(2WP)	all		1100-1020	
TP	Spur, fluted bowl	208	1780-1820	
S7	Spur	208	1780-1820	
IN PE	Spur	208	1780-1820	
WW	Spur, fluted bowl Spur, fluted bowl	208 208	1780-1820	
ww	Spur, rib+dot bowl	208	1780-1820	
RL	Spur	208	1780-1820	
	Unmarked	201	1780-1820	
Uncertain	Rib bowl	100	1780-1820	12
Uncertain	Rib+dot bowl	208	1780-1820	
Uncertain Rosette	Spur, rib bowl	203/208 208	1780-1820	
Rosette	Spur, rib bowl and leaf	100/201	1820-1840	
MN	Spur, stamp on bow)	203/208	1820-1840	
	'Norwood, Eton'			
	(See Fig. 11, No.2)	200		
MN	Spur, leaves	208	(820-)840	
RR	Norwood, Eton 7 Spur, fluted bowl	208	1820-1840	
NM.	Spur	208	1820-1840	
NN	Spur, leaves	100	1840-1870	
in the second	on bowl	Vertined		
Uncertain	Spur, ? NN, leaves	100/208	1840-1870	
SS	Spur, shields KD in round on base	203	1840 2	
Shields	Spur, leaves	208	1840 +	
-07120	-bail danian		1940.1	
Decor	Grapes and vines	208	1840 +	
T	ph bowl	200	10.00	
Decor	Scalloped bowl =	208	1840 +	

¹ The family name Norwood is associated with pipemaking in Eton (in part in King Stable Street) from 1830 to 1891 as follows
 1830 Maria Norwood
 1842 Richard Norwood
 1851 Mary & Ann Norwood, Ann being Mary's sister
 1851 Mary Norwood
 1887 Richard Henry Norwood, being Mary's son

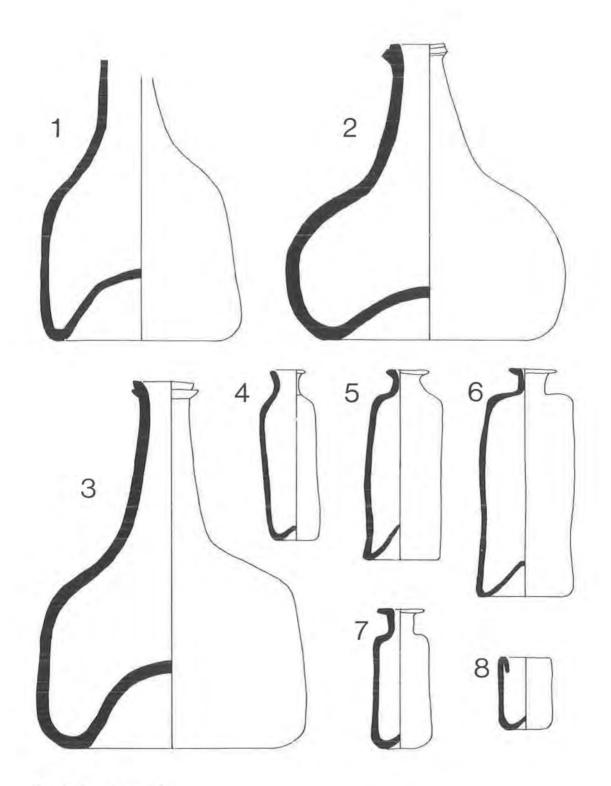


Fig. 10: Glass objects (1:2)



Fig. 11: Pipe stamps (2:1)

A few sherds of second or third century Romano-British pottery were identified but are not otherwise diagnostic. They came from secondary contexts and probably derived from the nearby villa. None are illustrated.

Medieval

There was Medieval pottery from both primary and secondary contexts. Most common were unglazed body sherds of indeterminate date. An important group of eight sherds came from layer 207 between the two chalk floors. Their fabric is the same as that from Tylers Green (Cauvain *et al* 1989), datable to the first half of the 14th century. None of the sherds are illustrated.

A group of later medieval sherds, probably 15th century, came from layer 205 at the interface with the chalk floor 206. These include a rim (see Fig.12,3), a base, and four joining sherds from a bowl with a honey coloured glazed interior. The fabrics are similar to those generally seen from the Penn/Tylers Green area (Hutchings and Farley 1989). There was another 15th century rim from a secondary context (see Fig.12,2).

A few sherds may date from the 16th century. One is a fragment of a white-ware rim with a speckly green glazed interior (see Fig.12, No.4); two others came from **203**, a rim of a light green/ yellow glazed bowl (see Fig.12,1) and the handle of glazed bowl.

Illustrated sherds (Fig 12):

- 1. Hard, buff, light green/yellow glaze int., 203.
- Hard, dark grey, traces patchy clear glaze int., slight distortion of the rim, 208.

- Hard, pink, light brown glaze int., 205/206 interface.
- 4. Hard, buff/white, speckly green glaze int., 201.
- Hard, buff/white, uneven light brown glaze ext., light green/yellow glaze int., 203.

Post-medieval

Pottery from the 17th century onwards formed the bulk of the ceramic material recovered, the largest amount being from contexts 201, 210 and 208. There was a large range of fabric types which included tin-glazed wares, slip trailed wares, cream wares, soft paste porcelain, glazed and unglazed earthenwares, and stoneware.

(i) Black (Cistercian-type) wares

Black wares, which appear to copy earlier Cistercian-type wares, are known from production sites throughout the UK from the seventeenth century onwards. A range of black-ware forms were recovered, including jugs, jars, bowls and tygs. The most local site producing such wares is Emmanuel Church, Chesham (Cauvain & Cauvain 1992), though products from that kiln site appeared to be restricted to various forms of tyg. Visually the fabrics from Emmanuel church were similar to those from High Wycombe but more extensive analysis would be required before confirming a Chesham provenance.

Illustrated sherds (Fig.12):

7. Fine, hard fabric, red core, patchy glaze int., 201,

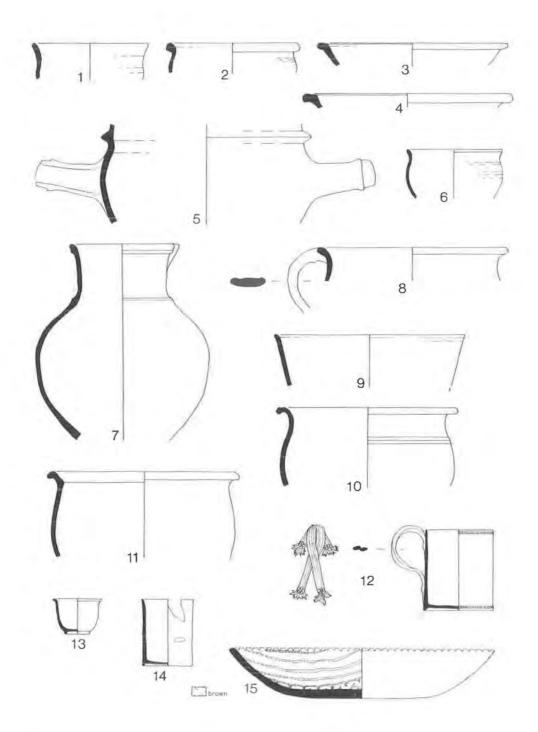
8-11, All in hard fabric, red core, 201.

(ii) Cream wares

Large numbers of cream wares were recovered, encompassing all forms likely to represented in a standard eighteenth-century dinner service. Cream wares were manufactured at many locations in the UK, though none of them might be described as 'local' to High Wycombe. Of particular note were parts of cream ware coffee pots, and cups with a distinctive twisted handle of a pattern known to have been produced at Leeds c. 1770.

Illustrated sherds (Fig.12):

- 12. Hard, white, clear glaze int. and ext., 201, ca. 1770.
- 13. Hard, cream fabric, clear glaze int. and ext., 201.



 Hard, white hard fabric, clear glaze int. and ext., 201.

(iii) Slip-trailed wares

The principal area for the production of sliptrailed wares is based on Stoke-on-Trent, with production beginning in the early seventeenthcentury. There is no evidence for the production of such wares more 'local' to High Wycombe than the Metropolitan wares of London and Kent. The slip-trailed wares were mostly bowls, based on a buff coloured, hard-fired fabric. Glazes were dark brown and yellow in colour.

Illustrated sherd (Fig. 12):

15. Hard, buff, yellow glaze int. with brown trails, 201.

(iv) Tin-glazed wares

Tin-glazed wares produced in the UK become fairly widespread from the seventeenth century onwards. A number production centres are known including Bristol and Liverpool. The forms and fabric recovered from the excavation suggest a Bristol source for these wares with earlier eighteenth-century dates. The wares included plain and decorated small bowls, plain chamber pots and a number of decorated plates. The fabric was quite soft with a creamy white colour. The glazes were white with a blue or pink tinge. Decoration was mainly carried out in blue, though some multicoloured examples were present. In many cases the sherds exhibited imperfections in the glaze, with large numbers of 'pin-holes' and marks from supports during firing.

Illustrated sherds (Fig.13):

- 16. White glaze int. and ext. with 'pin-holes', 201.
- Pale blue/white glaze int. and ext. with 'pin-holes', 203.
- Pale blue/white glaze int. and ext. with 'pin-holes', 201.
- Pale blue int. glaze, pale blue ext. glaze with darker blue lines which had run, slight 'orange-peel' finish to ext. glaze, 201.
- Pale blue/white ext. glaze, pale blue int. glaze with darker blue pattern, 220mm diameter, 203, Several plates with similar 'chinese' design.
- Pale blue/white int. and ext. glaze with darker blue pattern, 220mm diameter, 201.

- White/blue int. and ext. glaze with polychrome decoration, 'pin-holes' in glaze, 201
- Chamber pot, blue/white glaze int, and ext. with 'pin-holes, 201.

(v) Stoneware

Stonewares were well represented and included pieces of Bellarmine (not diagnostic), ink-wells and bottles.

Illustrated sherd (Fig.13):

 Chamber pot, light grey core, salt glaze int. and ext., stamped with blue coloured rosettes, Westerwald product, 201.

(vi) Earthenwares

A wide range of earthenware were represented including dishes, bowls and pots. Many were glazed though a number of unglazed small bowls were noted. Most of the forms in this category date from the eighteenth-century. They are likely to have a relatively local origin since it would be unusual for such low value wares to travel far, but no certain eighteenth-century pottery production sites are known in the High Wycombe area. There is, however, production at Tylers Green and Winchmore Hill in the 19th century (Chaffey 1995). The provenance for the Pann Mill earthenwares remains unknown.

All illustrated sherds were in hard, red/orange fabric and come from context 201 (Figs 13 and 14).

- 25. Brown glaze int.
- 26. Light brown glaze int.
- 27. Light brown glaze int.
- Light brown glaze int, with yellow and green vertical slip trails.
- Clear ext. glaze, light brown int. glaze with yellow spiral, trailed decoration.
- 30. Light brown glaze int. with red/brown slip trail.
- 31. Light brown glaze int., traces light brown glaze ext.
- 32. Unglazed.
- 33. Green/brown glaze int.
- 34. Green/brown glaze int.

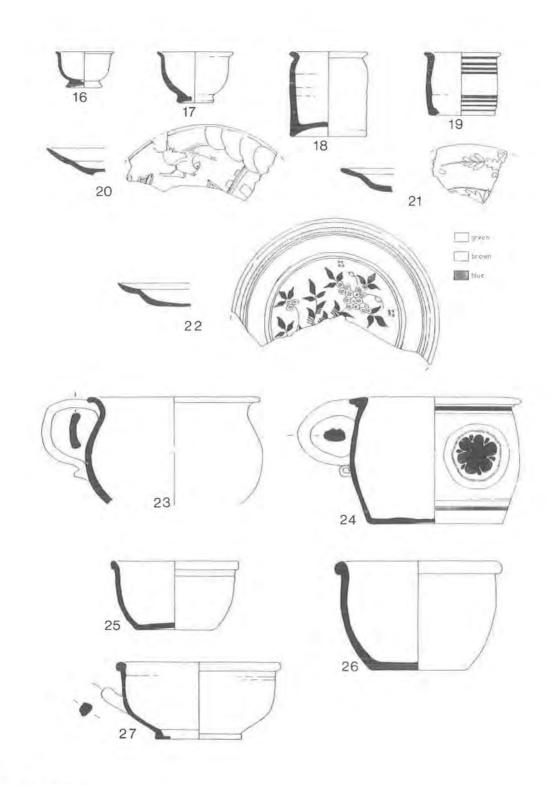


Fig. 13: Pottery (1:4)

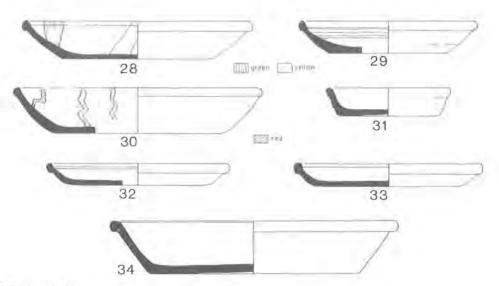


Fig. 14: Pottery (1:4)

Deposition of finds

A sample of finds from each of the major excavated layers and features has been placed in the Buckinghamshire County Museum collection. The following illustrated artefacts are with the County Museum : Metalwork, 1–3; Bottles, 5 & 6; Pottery; 1–6, 8–11, 14, 16–19, 21–23, 25, 27, 29, 30 & 34. The animal bones and associated catalogues and the clay pipes are deposited with the County Museum.

Some material has been placed in the High Wycombe Local History and Chair Museum and a smaller collection with the High Wycombe Society for display on the site of Pann Mill. The following illustrated artefacts are with the Local Museum : Wood, 1–3; Bottles, 1–4, 7,8; Pottery, 7, 12, 13, 15, 20, 24, 26, 28, 31–33.

The bulk of the post-medieval ceramic is stored on the site in the care of the High Wycombe Society.

The extant wooden posts were recorded and left in situ with protection during back-filling of the excavated areas.

ACKNOWLEDGMENTS

We thank the High Wycombe District Council for permission to excavate and for donation of finds to the Buckinghamshire County Museum and the High Wycombe Local History and Chair Museum. We are grateful for help given by members of the Chess Valley Archaeological and Historical Society and the High Wycombe Society with excavation and post-excavation activities. John Steane wishes to thank Mark Maltby for his expertise, Wendy Edwards for her time and effort, Jenny Yates for her drawings of the bone and Robert Beaverstock for his ideas and realism.

REFERENCES

- Allen, D. 1986, Excavation in Bierton, 1979, Recs. Bucks., 28, 1– 120.
- Allen, D. and Dalwood, C. H. 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.

Armitage, P. L. 1984. The faunal remains, in Thompson, A., Grew, F. and Schofield, J. Excavations at Aldgate, 1974. Post-Medieval Archaeology 18, 1-148.

- Ayto, E. G. 1994. Clay tobacco pipes. Shire Publications Ltd., Princes Risborough.
- Brain, C. K. 1967. Hottentot food remains and their bearing on

the interpretation of fossil bone assemblages. Scientific papers of Namib Desert Research Institute 32, 1-11.

- Buckinghamshire County Museum Archaeological Group. 1978. A seventeenth century pottery at Potter Row, Great Missenden, Buckinghamshire. *Recs. Bucks*, 20 (4), 586– 596.
- Cauvain, P. and Cauvain, S. P. 1992. Post-medieval pottery kilns al Emmanuel Church, Chesham, Bucks. Recs. Bucks, 34, 61-77.
- Cauvain, P., Cauvain, S. P. and Green, M. 1989. Prehistoric, Romano-British and fourteenth century activity at Ashwells, Tylers Green, Bucks. Recs. Bucks, 31, 111-119.
- Chaffey, J. 1995. Nineteenth century pottery from Winchmore Hill. J. Chess Valley Archaeological and Historical Society, 7-10.
- Dobney, K., Jacques, D. and Irving, B. 1996. Of Butchers and Breeders. Lincoln Arch. Studies Number 5, City of Lincoln Archaeological Unit.
- von den Driesch, A. 1976. A guide to the measurement of animal bonesfrom archaeological sites. Peabody Museum Bulletin 1, Havard University.
- Farley, M. 1979. Pottery and Pottery kilns of the post-medieval period at Brill, Buckinghamshire. *Post Medieval Archaeol*ogy, 13, 127–152.
- Grant, A. 1982. The uses of tooth wear as a guide to the age of

domestic ungulates, in Wilson, B., Grigson, C. and Payne, S. (Eds), Ageing and sexing animal bones from archaeological sites. *Brit. Archaeol. Rep.* (Brit. Ser.) 109, Oxford.

- Harcourt, R. A. 1974. The dog in prehistoric and early historic Britain. J. Arch. Science, 1, 151–176.
- Hartley, B. R. 1959. A Romano-British villa at High Wycombe. *Recs. Bucks*, 16, Part 4, 227–257.
- High Wycombe Society. 1976. The Rye 'A priceless possession'.
- Hutchings, N. and Farley, M. E. 1989. A fifteenth to sixteenthcentury pottery industry at Tylers Green, Penn, Buckinghamshire. *Recs. Bucks*, 31, 105–110.
- Kingston, H. 1848. The History of High Wycombe.
- Maltby, M. 1979. Faunal studies on urban sites : The animal bones from Exeter, 1971–1975. Exeter Archaeological Reports 2, Sheffield.
- O'Connor, T. P. 1993. Birds and the scavenger niche. Archaeofauna 2, 155–162.
- Oswald, A. 1975. Clay pipes for the archaeologist. , Brit. Archaeol. Rep. (Brit. Ser.) 14.
- Teichert, M. 1975. Osteometric Untersuchugen zur Berechnung der Widernshohe bei Schafen, 51-69 in Classon, A. T. (Ed.), Archaeological studies, Elsevier, Amsterdam.
- VCH Victoria County History Buckinghamshire