Archaeologia Cambrensis 156 (2007), 73–122

Excavations at Skenfrith Castle, Monmouthshire, 2003

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SUMMARY. An archaeological field evaluation and excavation was undertaken at Skenfrith Castle, Monmouthshire, in 2003, prior to and during the construction of a new river defence scheme and car park on land adjacent to the castle. Six trenches were excavated and a watching brief carried out, to establish whether archaeological remains survived within the development area. The excavation revealed evidence for several phases of occupation at the castle, and provided significant insights into the use of the river by the castle builders.

INTRODUCTION

Skenfrith Castle lies on the western bank of the river Monnow, 11 kilometres north-east of Abergavenny (Fig. 1). The site is owned by the National Trust, but is in the guardianship of Cadw, who commissioned and funded the excavations reported here. The land under investigation encompassed the castle and western portion of the moat, and a large area to the north of the castle, to the east of St Bridget's Church. The land, which slopes gently away to the south and south-east largely comprised soil dumped during excavations at the castle between 1954 and 1970.

The current excavation was undertaken in advance of the construction of new river defences on a stretch of river bank to the north of the castle which was under threat from rapidly accelerating erosion. Two of the trenches were positioned adjacent to the river bank, and a 40-metre long section of the bank was cleaned back to explore the nature of visible masonry, revealed as a result of erosion (Fig. 2, trenches 5 and 6 and riverside excavation). Four trenches were located on the presumed line of the moat, to explore its position and direction adjacent to the North Tower (Fig. 2, trenches 1–4). A geophysical survey undertaken (Terra Dat 2003) in this area prior to the start of excavations suggested that the moat stopped short of the river, curving around to meet the North Tower, findings which the excavation aimed to test. The watching brief was carried out to the south-west of the castle, on a narrow strip of land between the road and the castle walls (Fig. 2).

HISTORY OF THE CASTLE

The following historical summary draws heavily upon Paul Remfry's *Skenfrith Castle 1066–1449* (2000). There are no surviving references pertaining to the origins of Skenfrith Castle, although a defended structure was certainly present on the site when it came into the possession of King Henry II in 1160, together with the neighbouring Grosmont Castle and White Castle (Fig. 1), collectively known as the Three Castles or Trilateral. Jeremy Knight (2000) has suggested that an earth and timber motte and bailey may have been the first structure built at Skenfrith, postulated as the work of William Fitz Osbern, a Norman who controlled the Welsh Marches in the early twelfth century (Hull 1998). However,

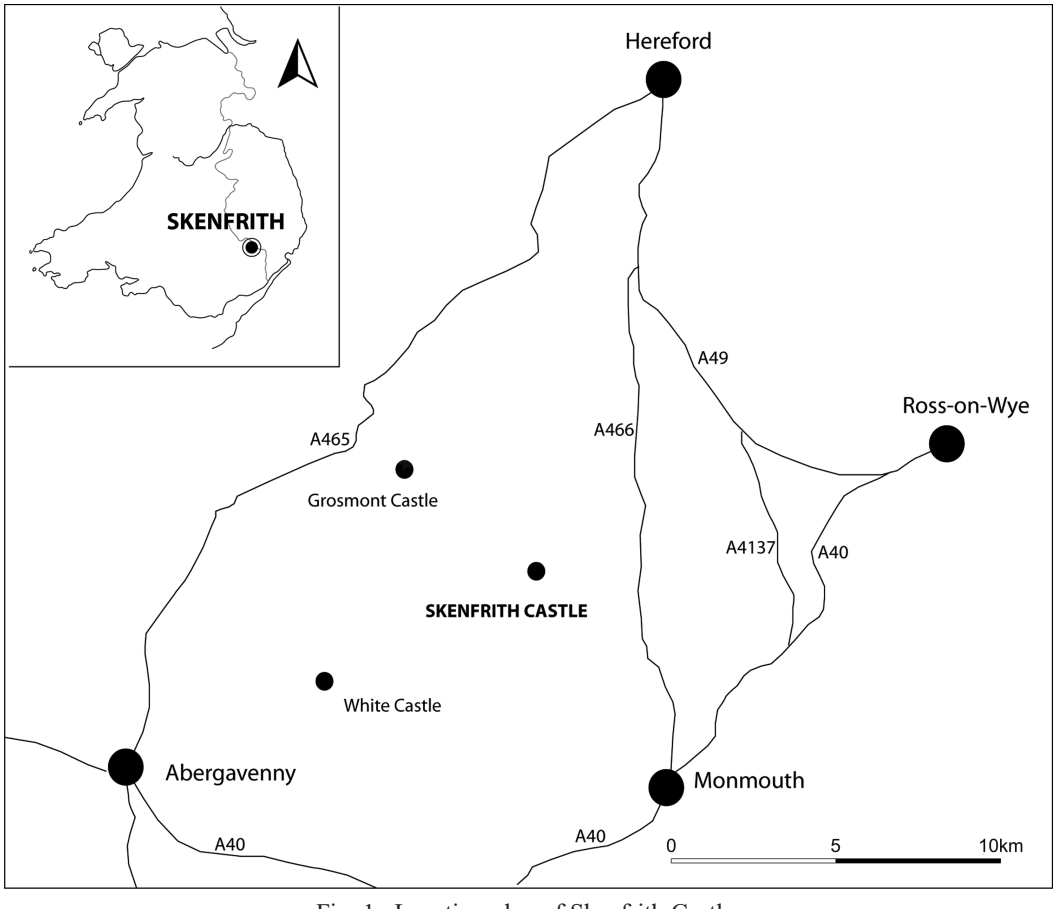


Fig. 1. Location plan of Skenfrith Castle.

excavations between the 1950s and 1970s failed to produce any evidence for a motte, demonstrating instead that the extant castle stands on a layer of redeposited river gravel several metres deep (see below).

In 1187 Ralph Grosmont, a royal engineer, was ordered by Henry II to rebuild the castle in stone, but a year later the building works were aborted. It is possible that the eastern wall and North Tower were constructed at this time, as their style contrasts notably with the rest of the castle. In 1193 a wooden palisade was built to fortify the remaining three sides of the castle, under the direction of Sheriff William Braose.

In 1219 Hubert de Burgh, earl of Kent, was granted rights to Skenfrith, White and Grosmont Castles by Henry III. He began a programme of building at Skenfrith, constructing the remaining three sides of the castle, and interior buildings. Documentary sources reveal that during the winter of 1219 severe flooding of the river Monnow destroyed much of the newly-built castle. Undeterred, Hubert filled the interior with river gravel, raising it about the flooding level, and started building again.

In 1239, the Three Castles were seized by Henry III, following Hubert's suspicious financial dealings, and placed in the hands of Richard Marshall the son of the king's first regent, William the Marshall. Later in the year of 1239, Hubert regained control of the castles only to lose them again following the discovery of a suspicious marriage.

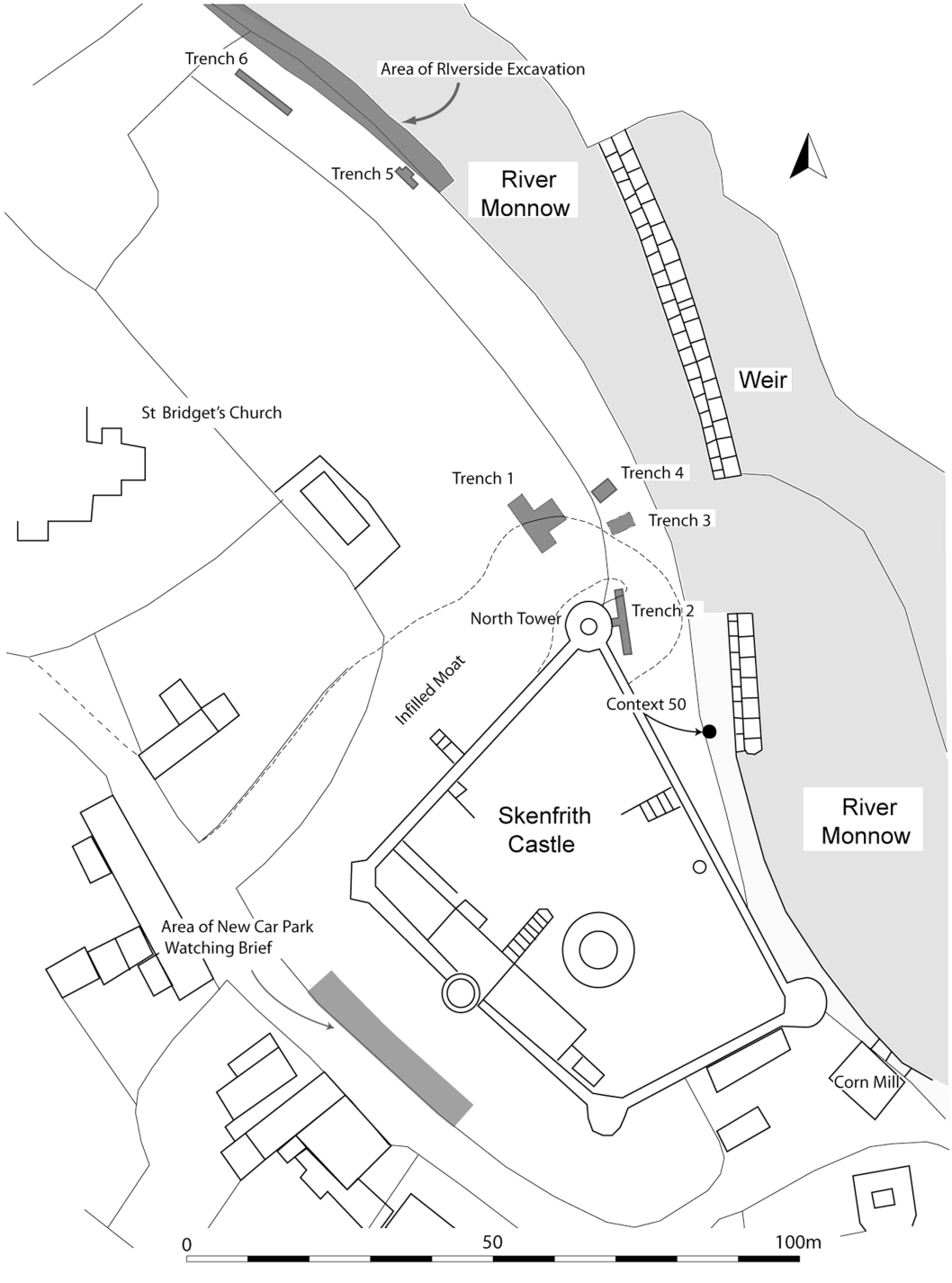


Fig. 2. Plan of Skenfrith Castle and location of archaeological work and midden deposit 50.

Following Hubert's fall from favour, Walerund Teutonicus, a German constable, was granted the lordship of the Three Castles. At Skenfrith, a new chapel and roof for the tower were built; evidence dating the construction of the chapel to the mid thirteenth century was uncovered during previous excavations at the castle (Thomas 1996). Between 1254 and 1267 a single, solid half-round tower was constructed on the west wall, possibly by the Lord Edward, later Edward I, son of Henry III. At this time the moat was dug which was approximately 14 metres wide and 2.5 metres deep, and fed a mill to the south.

Between 1404 and 1405, the Three Castles served as border defence following the Glyn Dŵr rebellion, when Owain Glyn Dŵr briefly tried to re-establish a native Welsh principality. This was the last time that the Three Castles were to see active service. Under Henry VI, repairs were implemented to the keep, water-gate and gate-tower at Skenfrith. By 1538 all three castles had been abandoned, as recorded by the antiquarian John Leland in his survey of 1536. A late sixteenth-century map[2] depicts the Three Castles as ruins, although Skenfrith appears to have retained a roof.

In 1825 the duchy of Lancaster sold the Three Castles to the duke of Beaufort. When the Beaufort estate sold them in 1902 it was the first time since 1138 that they had passed out of single ownership. White Castle came into state care in 1922, and Grosmont in the following year. Skenfrith passed through several hands before being given to the National Trust. All three castles are now maintained by Cadw.

THE 2003 EXCAVATIONS

Evidence from the excavations, watching brief and documentary sources has allowed the history of the site to be subdivided into the following phases.

PHASE 1 – TWELFTH CENTURY

Excavation of the river bank revealed a stone built wharf wall, running parallel with the line of the river (Figs 3–6). Further to the west two walls, also belonging to this phase, were located running at right-angles to the river (Fig. 3, walls 30 and 32; Figs 7–9). Between these two walls a series of compact clay deposits, probably beaten floors, were identified. The remains of a possible wooden slipway were also recorded between the northern end of the wharf and the southernmost wall. All of these features were sealed by a deposit of river gravel believed to have been purposefully deposited at the beginning of the thirteenth century (Phase 2; see Fig. 9).

The mortared stone-built wharf lay at the eastern end of the excavation area, directly beneath this layer of gravel. The wharf wall was 1.8m wide, 1.3m high and 24m in length, and had a set of three steps at the eastern end (Fig. 6). At the base of the steps a deposit of compact gravel and clay was revealed which appears to be contemporary with the wharf structure. The wharf wall had pitched stone foundations of the same build as walls 30 and 32.

Wall 32 comprised limestone blocks bonded in lime mortar, and was 1.5m wide, 2.9m high (25 courses of stone, Figs 3–4, 8) and protruded 3.3m from the river bank. The wall had a pitched stone foundation which could be traced out into, and formed part of, the masonry debris lying in the river bed to the east (Figs 3–4, 11–12). Wall 30 measured 1.3m wide, 1.3m high (9 courses of stone) and protruded 0.8m from the river bank (Figs 3–4, 9).

The series of compact clay deposits revealed between the walls could possibly represent floor layers in a building delineated by walls 30 and 32. The rubble debris and fallen walls located in the river appear

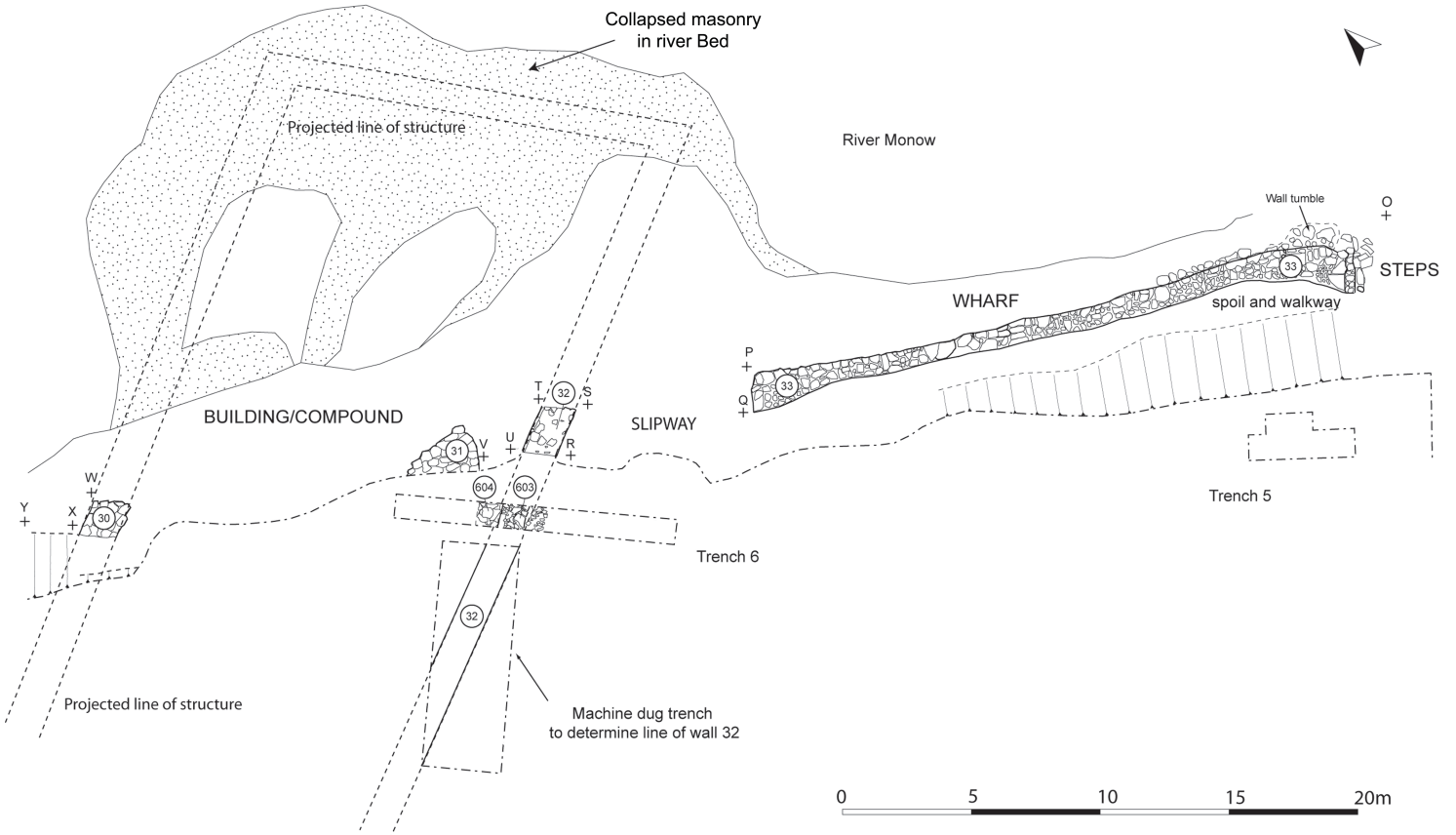


Fig. 3. Plan of archaeological structures on the river bank.

Fig. 4. View south-west across the river showing medieval structures along the river bank.

Fig. 5. View along wall 33, looking south-east.

to delineate the eastern end of the structure (Figs 3, 11–12). These putative floor deposits had all been cut by Phase 2 walling, but were otherwise continuous between walls 30 and 32.

Between the northern end of the wharf structure and wall 32 a deposit of alluvium was revealed. Within this deposit was a series of timbers, some set vertically and appearing to be posts, whilst others lay on an angle sloping gently towards the river. Constraints of time and safety considerations restricted investigation of these timbers, and it was not possible to fully record them. However, it seems possible that they represent the remains of a slipway between the wharf and wall 32 (Figs 3, 13–14).

A trench was positioned to explore the nature of wall 32 (Fig. 2, trench 6). Beneath the turf, a thick deposit of sandy brown topsoil was exposed. At a depth of 0.7m a mortared stone wall was uncovered,

Fig. 6. View along wall 33 showing steps at south end, looking north-east.

whose alignment corresponded with that of wall 32 (Figs 15–16). The wall was 1.1m in wide, with a small void to the north where a further rough stone wall was encountered which was also 1.1m in wide. This could not be seen in the river section. Abutting this wall a compact gravel deposit was revealed, which produced sherds of Roman pottery, animal bone and clay tile. Wall 32 and the structure in trench 6 appear to be sections of the same wall, part of which was investigated and found to survive to a height of over 2.9m.

The Phase 1 features are sealed by the Phase 2 gravel layer which appears to date to the early thirteenth century. Sherds of medieval pottery dating from the twelfth and thirteenth centuries were recovered from contexts that had been sealed by the gravel. The paucity of glazed wares in these contexts appears to be significant and favours a twelfth-century date (see pottery report below).

PHASE 2 – THIRTEENTH CENTURY

The layer of river gravel appears to be contemporary with a deposit of sterile gravel previously identified in the castle that dates to the winter flooding event of 1219 (Craster 1963). The gravel was up to 1.5m thick and, as noted above, sealed the Phase 1 walls and stone wharf. A decaying wall, measuring 2m wide, with 0.8m protruding from the river bank and surviving to a height of 1.6m (15 courses of stone) was found cut through the thick gravel. It was positioned close to wall 32, within the line of the Phase 1 building (Figs 3 wall 31).

In trench 1, the removal of the overburden revealed the northern edge of a stone-revetted moat (Figs 17–18). An extension to the trench to ascertain and identify the curve of the moat revealed that much of it had been destroyed during later landscaping works. Six courses of the moat revetment were exposed, and a small portion of the moat fill excavated. The fill of medium brown, silty sandy-clay contained a few fragments of stone possibly derived from the moat lining, interspersed with charcoal flecks. A sherd of thirteenth-century pottery and animal bone were also recovered from the upper fill. A layer of compact

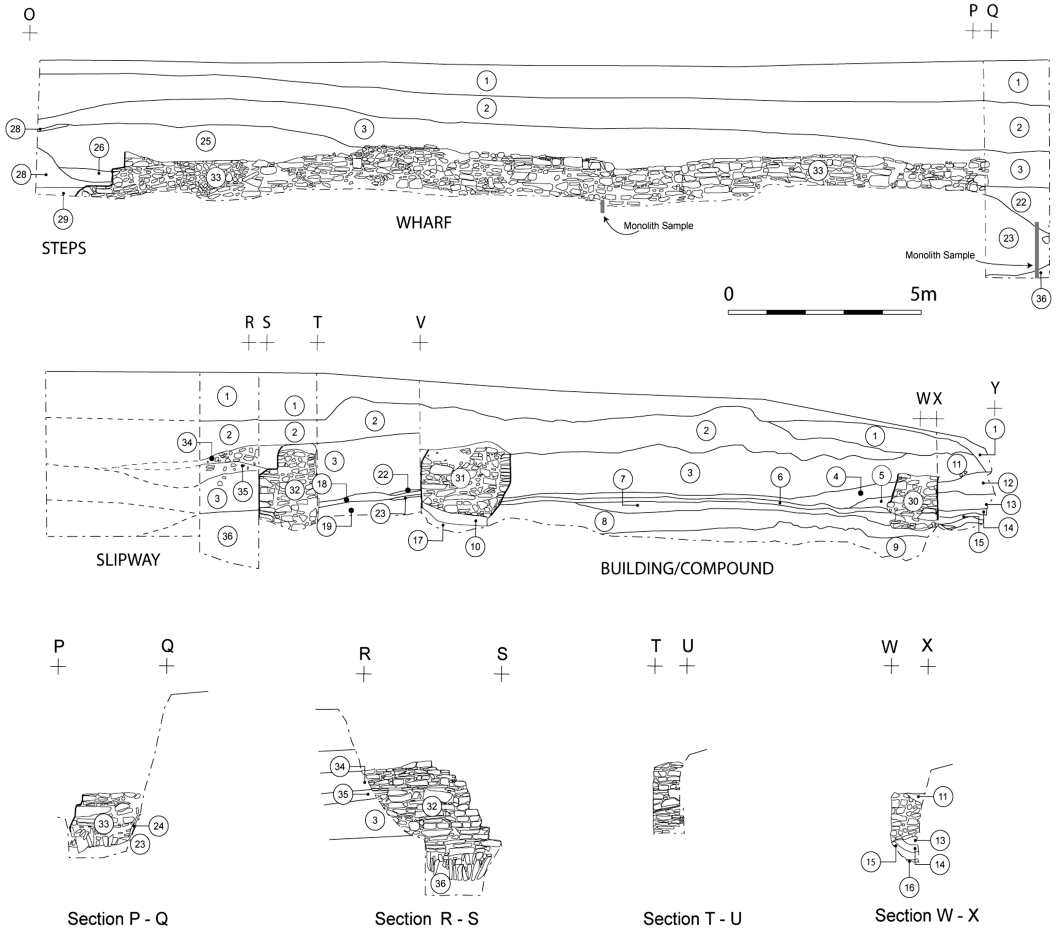


Fig. 7. Section through structures and deposits on the river bank.

rough gravel cobbling was revealed at the northern end of the trench; within this deposit two sherds of Roman pottery were found. This compact gravel layer extended southwards for approximately 2m and butted up against the inner edge of the stone revetment (Fig. 17).

Trench 2 cut a slot through the fill of the moat, with an extension towards the north castle tower to identify the relationship between the two. The fill was found to butt up against the north tower of the castle, and a sherd of thirteenth- or fourteenth-century pottery and animal bone were recovered (Figs 19–20). A cut was identified within the fill of the moat, filled by a deposit of brown silty clay containing fragments of stone roof slabs and rubble. A single sherd of medieval pot was also recovered. The cut and fill were sealed by a layer of stone rubble.

After the removal of the topsoil in trench 5, a deposit of brown sandy clay was revealed. At a depth of 1.1m within this deposit a layer of charcoal and stones were recorded. A compact gravel deposit was identified 0.1m below (see Figs 21–22).

In trench 6, the gravel deposit appears to correspond with the gravel deposit exposed during the river bank excavation, which seals the Phase 1 structures (Figs 15–16).

Fig. 8. Wall 32, looking north-west. Scales 2m.

Fig. 9. Phase 2 Wall 30 with Phase 3 gravel deposit to left, looking south-west. Scales 2m.

Fig. 10. River bank section showing Phase 2 wall 31 and gravel layer 3, sealing Phase 1 deposits, looking south-west. Scales 2m.

Fig. 11. Cleaning of river bank between walls 30 and 32, looking west.

Fig. 12. Cleaning of river bank showing church in background, looking south-west.

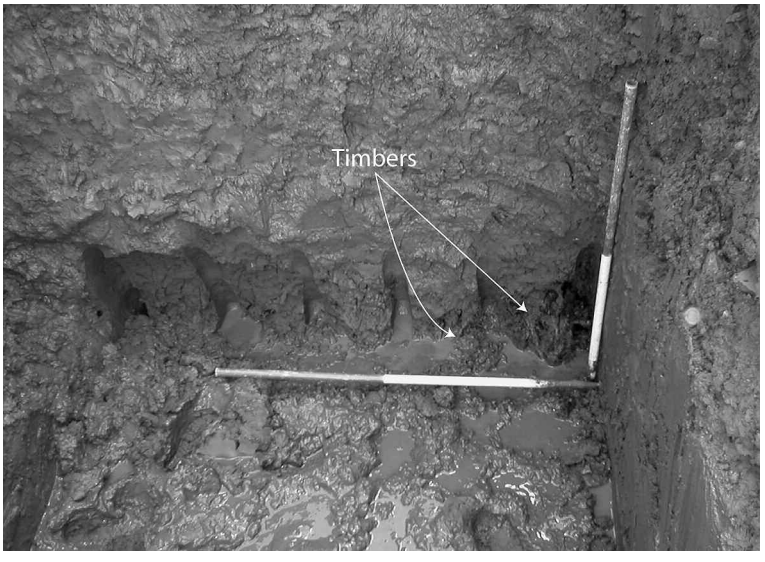


Fig. 13. Machine cut adjacent to wall 32, showing in situ timbers, looking south-west. Scales 1m.

Both documentary and artefactual evidence help to date the Phase 2 features. The written record of the deposition of a gravel layer in 1219 provides a *terminus post quem* for all subsequent activities. In addition, material recovered from contexts stratigraphically above the gravel in the area of the river bank excavation suggests a thirteenth or fourteenth century date. It is also recorded that between 1254 and 1267 the moat was dug around the castle (Remfry 2000). The pottery recovered from contexts in the base of this feature date its initial siltation to the thirteenth and fourteenth centuries.

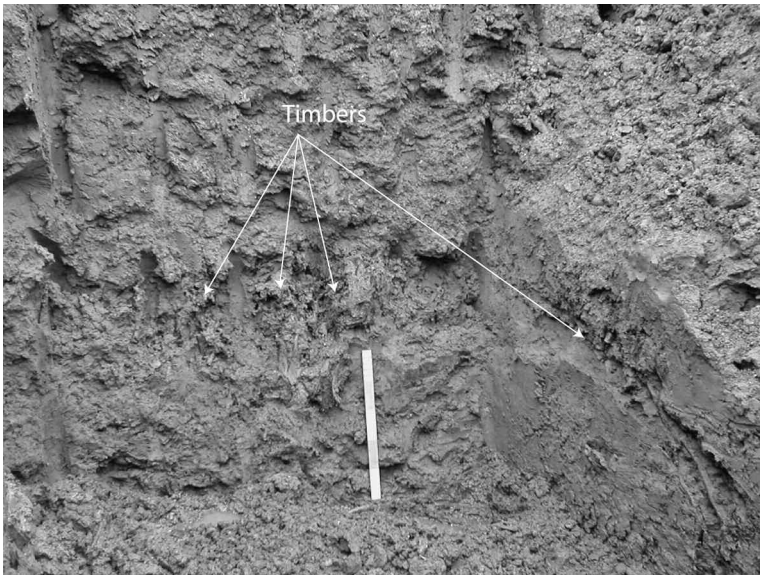


Fig. 14. Machine cut adjacent to wall 32, showing in situ timbers, looking south-west. Scale 0.5m.

PHASE 3 – POST-MEDIEVAL

A deposit of seventeenth-century waste, comprising large fragments of masonry and midden material was identified eroding out of the river bank immediately below the topsoil at the southern end of the weir (shown as context 50, Fig. 2). This deposit appears to have been dumped and spread out, rather than accumulating slowly over time. It is likely that this material came from inside the castle, and was deposited during the seventeenth century, possibly as an attempt to revet the bank to protect it from river erosion.

Further evidence of post-medieval activity at the castle was identified in trench 3, where a dump of stone was revealed (Figs 23–24), apparently deliberately deposited on the east-facing river bank. A single sherd of seventeenth-century pottery was recovered from within this deposit. A similar deposit was identified in trench 4 (see Figs 25–26).

The watching brief in the car park area (Fig. 2) recovered late-medieval pottery and coins from a deposit of mid orange-brown sandy clay. Within this deposit the foundations of a post-medieval structure were revealed, at the northern end of the site. The remains of a wall ran parallel with the road, and would appear to be the foundations of a building depicted on the nineteenth-century tithe map for Skenfrith parish and on the first and second edition Ordnance Survey maps.

The majority of the dating evidence for the Phase 3 features comes from the midden deposit found eroding out of the river bank to the east of the castle, which included a wealth of artefacts dating from the late medieval to the seventeenth century. These included window glass, seventeenth-century knives, a leather shoe, clay pipes and pottery. The upper fill of the moat also produced seventeenth-century pottery. Cartographic and excavation evidence from the area of the new car park revealed evidence of a late post-medieval building associated with pottery and coins.

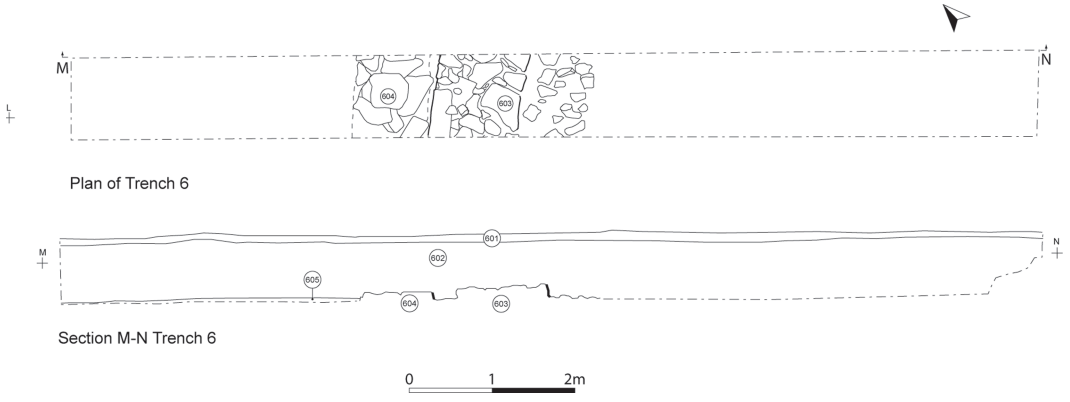


Fig. 15. Plan and section of evaluation trench 6.

Fig. 16. General view along trench 6, looking south-east. Scale 2m.

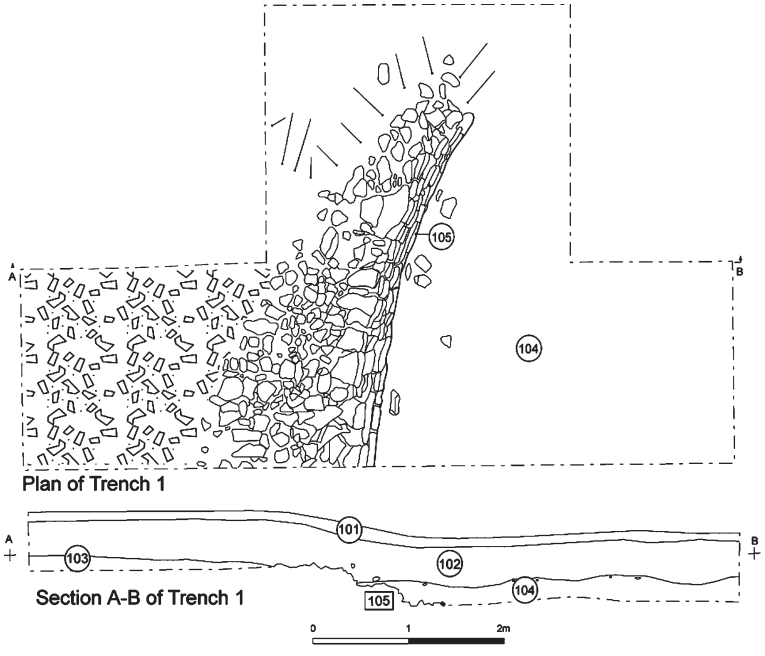
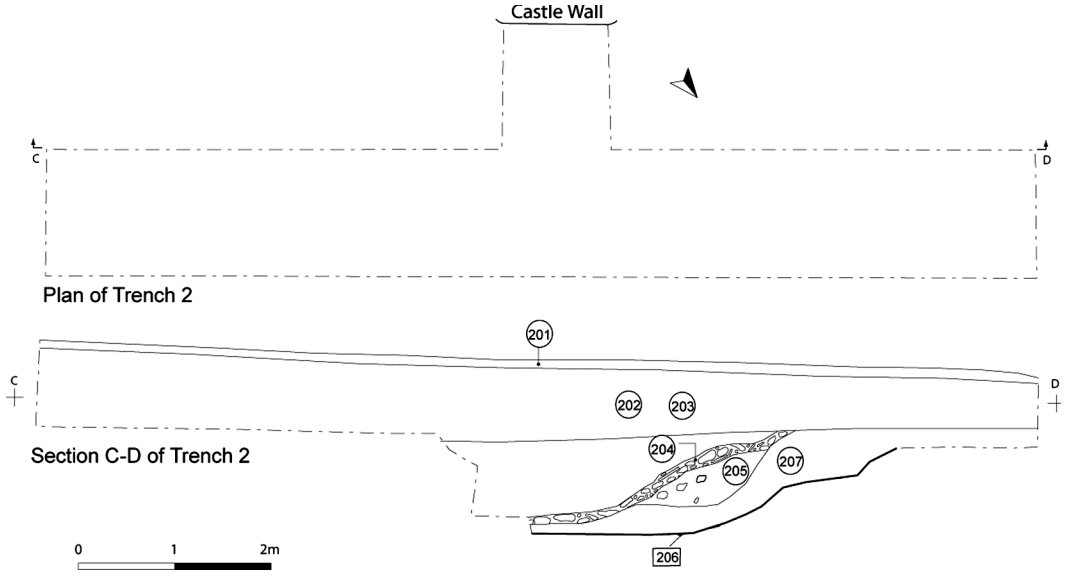


Fig. 17. Plan and section of evaluation trench 1.

Fig. 18. Detail of stonework (105) along side of moat, trench 1, looking north-east. Scale 2m.



Above: Fig. 19. Plan and section of evaluation trench 2.
Left: Fig. 20. Elevation of north tower at end of trench 2, looking west. Scales 1m.

PHASE 4 – MODERN

The removal of the turf in trench 2 exposed a thick deposit of topsoil containing large quantities of stone and mortar. A small section, towards the north tower, was excavated, and provided evidence to suggest that this deposit had accumulated after the Ministry of Works re-pointed the exterior of the castle in the 1970s.

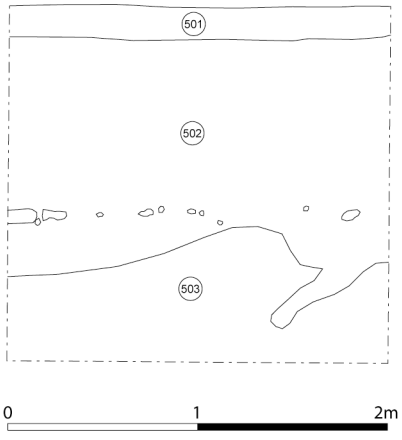
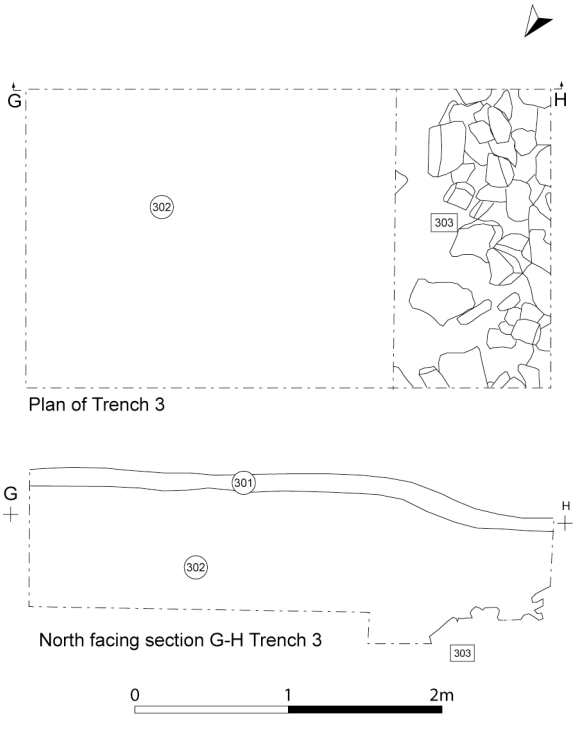


Fig. 21. West-facing section of evaluation trench 5.

Fig. 22. West-facing section of trench 5. Scale 2m.



Left: Fig. 23. Plan and section of evaluation trench 3.
Right: Fig. 24. Stone deposit 303, trench 3, looking south-west. Scales 2m and 1m.

THE FINDS

A total of 912 finds were recovered during the excavation and watching brief (Table 1).

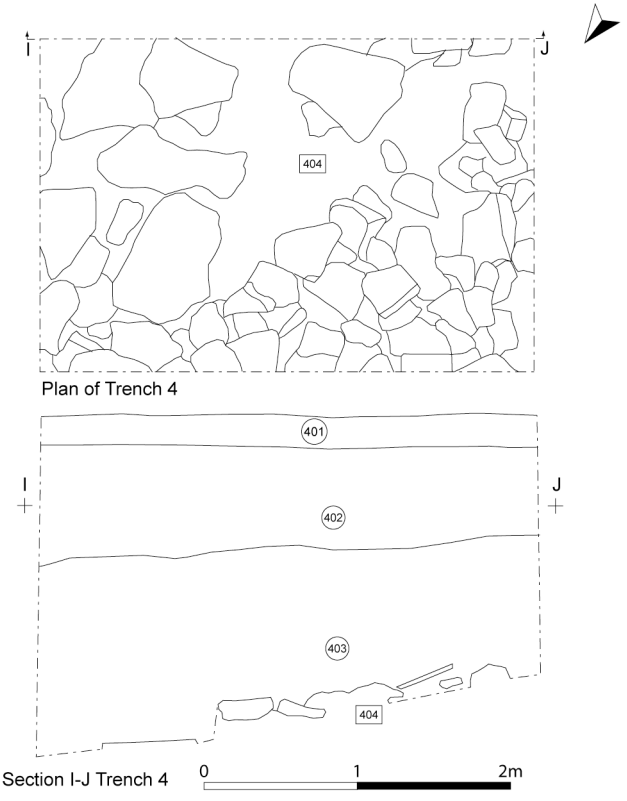
Table 1: Summary of Finds

Category	Quantity
Coins	6
Lead alloy	7
Iron	40
Seeds	4
Glass	172
Copper alloy	4
Wood/iron	1
Leather	11
Roman pottery	33
Roman tile	16
Medieval pottery	105
Medieval tile	2
Post-medieval pottery	95
Post-medieval tile	7
Animal bone	279
Shell	1
Clay tobacco pipes	72
Mortar	2
Daub	1
Slate	1
Clinker	2
Charcoal	4
Slag	30
Worked stone	17
Total	912

ROMAN POTTERY AND TILE

By Malcolm Lyne (pottery) and Phil Evans (tile)

The site yielded 33 sherds of Late Iron Age and Roman pottery, most of which (14 sherds) came from the subsoil layer at the base of the twelfth-century Phase 1 deposits. This material is of wide-ranging date and includes a pedestal base of possibly Late Iron Age to early Roman date, *c*. AD 70–120 greywares, Severn Valley Ware, and both second- and third-century black-burnished ware (BB1) cooking-pot fragments. There is nothing which can be attributed to the fourth century with any certainty. A total of sixteen fragments of Roman tile (14 tegula and 2 imbrex) were recovered from the same subsoil layer at the base of the Phase 1 structures and deposits. These fragments date from the first to third centuries AD, as indicated by the pottery. The Roman pottery and tile were found in securely dated twelfth-century



Left: Fig. 25. Plan and section of evaluation trench 4.
Right: Fig. 26. Stone deposit 404, trench 4, looking south-west. Scales 2m and 1m.

Table 2: Quantification of Roman pottery by context

Context	Fabric	Form	Date-range	No. of sherds	Weight (g)
2	F1	?Curle 15	c. AD 120–150/200	1	7
9	C1	Jar with stubby everted rim	c. AD 70–120		
		Necked jar	c. AD 70–120	5	83
		Jar	c. AD 70–150	1	16
	C2	Jar	c. AD 70–150	1	2
	C3	Closed	c. AD 50–350	1	4
	C4A	Obtuse-latticed cooking pot	c. AD 200–400		
	C5	Acute-latticed cooking pot	c. AD 90–200	5	23
		Pedestal base	Late Iron Age to AD 70	1	27
	C6		Late Iron Age to c. AD 250+	14	155
11	C4A	Open form	c. AD 70–350	1	5
103	C4B	Closed	c. AD 70–350	3	16

contexts and are therefore residual. However, some of the pot sherds are large and unweathered and the tile unabraded, indicating that their deposition was not the result of field-marling. It is more likely that they originate from a Roman occupation site in the close vicinity.

MEDIEVAL POTTERY

By Stephen Clarke

The medieval pottery from Skenfrith has been studied with reference to the pottery assemblages recovered from excavations in Monnow Street, Monmouth. The pottery types are classified using the system and codes devised for the pottery from excavations in the City of Hereford (Vince 1985) which has been modified for the Monmouth series. All sherds were examined under a binocular microscope at ×8 magnification in order to identify temper. Simple tests for calcareous inclusions, hardness, etc., were used, and Munsell colour charts were used to check and record the fabric colours. None of the material is illustrated.

Fabrics represented

Local wares

A2. This fabric is most easily identified in large sherds, especially rim sherds. It is restricted to cooking pottery and is only found in the earliest house floors of Monnow Street, Monmouth, or in a few other early borderland sites. This is one of the fabrics indicative of a Norman context. In Monmouth, coin and archaeomagnetic evidence suggests occupation dated to the late eleventh or the early twelfth centuries, making it one of the first fabrics to be produced west of the Severn after the fall of the Roman Empire. The rim sherd from context 10 is worn and abraded, suggesting that it is residual—but it is amongst the earliest medieval pottery yet found in Skenfrith.

A3. This is the main regional fabric of cooking pottery, which is tempered with local (mostly Devonian derived) sand. There are variations in the fabric but these can occur in the same kiln waste although it is fairly certain that more kilns remain to be discovered. The fabric appeared in the first half of the twelfth century and is then found until late medieval times. The earlier pots are all hand-made; they were often wheel-turned during and after the thirteenth century and by the early fourteenth century were often internally glazed.

A5. Local jugs, roof furniture, floor tiles, etc.

A5b. The earliest glazed ware found in Monmouth—earlier than the middle thirteenth century and more sandy than the usual A5 fabric.

Pottery from the Malvern area

B1. Cooking pots.

B4. Oxidised wares.

B5. Late oxidised wares.

The pottery assemblages

Pottery was examined from 20 contexts at Skenfrith, all of which probably date from the early twelfth to the fourteenth century (see summary in Table 3). Each of the assemblages were relatively small or consisted of single sherds from individual contexts, which makes it hard to suggest very close dating. However, we can be confident that the dates suggested, although wide, are reasonably accurate in the present state of our knowledge.

The majority of the sherds are of locally produced cooking pots—Monmouth Fabric A3—which has a wide date range from the first half of the twelfth century until the middle of the fourteenth century when these local sand-tempered earthenware cooking pots become rare in the archaeological record. Although the inclusions change little over several centuries, there are differences in style and methods of construction. Hand-made pottery, and the absence of glazed wares is often, though not always, an indication of an early or pre-thirteenth-century date, as is the absence of ceramic roof furniture. Close dating of medieval pottery is only feasible when studying large assemblages, for it is often as important to take account of fabrics not present in a group, as those that are. For instance, the total absence in the Skenfrith Castle groups of Monmouth A4 cooking pottery—which has a petrology which includes concretionary limestone similar to that in the sands of the river Monnow—is an indication that the groups are all earlier than *c*. 1300. The paucity of glazed wares is also very significant and in this case supports a twelfth-century date.

The A3 cooking pots from the excavations are therefore all earlier rather than later: more twelfth/thirteenth century than thirteenth/fourteenth century. They are usually hand-made, and not accompanied by many glazed wares. The single sand-tempered A2 rim from context 10 is probably residual, but is an important find in being one of the few really early (Norman) pots from northern Gwent, outside Monmouth.

Table 3: Quantification of medieval pottery by context

Context	Quantity	Date
34	1	?12th/13th-century
26	9	early 13th-century
20	1	13th-century
4	1	13th-century
5	3	13th-century – ?residual 12th century
6	3	12th/13th-century
7	20	12th/13th-century
8	13	12th/13th-century
10	8	12th-century – residual 11th/12th-century
11	4	early 13th-century
12	6	?13th-century
13	10	?13th-century
14	3	12th/13th-century
15	2	12th/13th-century
16	1	12th/13th-century
104	12	13th-century
203	2	13th/14th-century
205	2	13th/14th-century
207	2	13th/14th-century
41	2	13th/14th-century

The Malvernian pottery, like the Welsh Borderland wares, has a wide date range but with various differences from the early twelfth century through to the fifteenth century. Where discernible the differences support the dating suggested.

There are two informative groups: firstly, contexts 4, 5, 6, 7, and 8 (and if it fits here context 10). These seem to demonstrate a progression from the twelfth century (possibly early in the century) through to the thirteenth century.

The second interesting sequence comes from contexts 11 to 16. The latest of these, context 11, contains an example of a Monmouth A5b vessel. These pots (normally jugs) are the earliest glazed wares in a local fabric that has been found in Monmouth. A very large assemblage from an iron forge, dated to before the middle of the thirteenth century, was found with a total absence of Fabric A5 wares. This Skenfrith series, back to context 16, probably begins in the twelfth century.

The overall dating is summarized in Table 3, but there is little evidence to suggest that any contexts are later than the late thirteenth century. The small number of sherds in each context however, means that the suggested dating should be treated with caution.

METALWORKING DEBRIS

By T. E. Jones

This report is based on visual and magnetic inspection of the finds, involving consideration of: external and cross-section morphology, colour, density and magnetic response. This revealed the following to be present on site: intermediate slags (hearth lining and fuel ash slags); fired clay (mainly from below a temperature of 900ºC); hearth/furnace lining; smithing hearth bottoms; remnants of forging and welding; undiagnostic dense iron slag; tap slag; iron ore; hammer-scale (both scale and spheres). The identifications follow English Heritage guidelines (Bayley *et al.* 2001). The sandstone fragments within the samples may be part of the finishing process.

Context 4

Fragment of hearth bottom; 2 small pieces of bloom; 4 small pieces of tap slag.

Context 5

Assorted pieces of fire hardened clay showing a tubular structure *c*. 8mm internal diameter. Probably worm tunnels that were accidentally fired when a fire pit was used. Lack of vitrification indicates a temperature of firing too low to be diagnostic of any process.

Context 6

1 pieces of tap slag; numerous pieces of undiagnostic dense iron and intermediate slags that appear to have been deliberately crushed (includes 2 probable pieces of hammer-scale).

Context 8

Numerous tiny pieces of metallic iron picked up by magnet from dust in the bottom of finds bag, probably hammer-scale and welding droplets; 1 piece of ironstone, has been heated; 2 pieces of clay furnace lining; 1 block of cinder, fuel ash slag; 1 piece of tap slag; 2 pieces of natural; 1 piece of sandstone, may be part of a vessel; 1 piece of sandstone, used as an abrasive, traces of mortar suggest reuse in a wall; 1 piece of sandstone, possibly sharpening stone; slag rod, *c*. 80mm length, *c*. 28mm diameter tapering to *c*. 20mm diameter (formed in air hole of a furnace).

Context 9
Sandstone with tap slag, probable furnace lining.

Context 10
Tiny fragments of metallic iron in dust; 1 piece of mortar; 2 pieces of large hearth bottom (a recent break, originally 1 piece rectangular with rounded corners width *c*. 100mm, length unknown but over 150mm; the angle of curvature of the base is very close to the angles of curvature for sandstones in context 8); 1 piece of sandstone fits onto large hearth bottom.

1 piece of sandstone with slag; 3 pieces of sandstone.

Context 34
1 piece of tap slag.

Context 41
1 piece of metallic iron, spongy morphology suggests it is a broken piece of bloom.

Discussion of the metalworking debris
The presence of hearth bottoms in contexts 4 and 10 makes it clear that smithing was being carried out. Something more than domestic smithing is suggested by the large size of the hearth in context 10 (Salter 2001). From the shape of sandstone fragments in contexts 8 and 10, these hearths were stone-built and not always clay-lined. In Britain this is more typical of the Roman midlands (Schruefer-Kolb 2003), although there are medieval Scandinavian parallels (Stenvik 2003).

The presence of smelting is demonstrated by the following: slag rod from context 8 formed in the air inlet of a furnace; roasted ironstone from context 8, suggesting preparation of ores for smelting; and tap slag from contexts 4, 6, 8, 9 and 34. Salter (2001) also suggests that the large hearth blooms in the medieval period are associated with the conversion of bloom to bar and are usually close to the bloomery site. The sandstone and slag from context 9 suggest a stone furnace as in medieval Scandinavia. However, it is not conclusive since similar slag may have been produced in an abnormally hot part of the smith's forge, for example near the bellows which were stone-lined.

Sandstone in context 8 may have been used for sharpening smithing tools, as suggested in medieval Norwich (Schofield and Vince 2003), or for finishing the iron produced: either would account for the signs of abrasion. The angles of curvature might also suggest that they were shaped for use as hearth bottom lining, in this case unused, but the presence of mortar on one piece shows reuse in a wall and the stones may therefore be residual rather than associated with medieval metalworking. The absence of evidence for non-ferrous metalworking leads me to ignore the usual reason for sandstone working on medieval industrial sites, the manufacture of moulds and crucibles (Bayley 1990), as an explanation.

This leaves the question of the proximity of the original working site to the find site. The presence of relatively fragile pieces of hearth/furnace lining clay suggests that deposition occurred quickly and close to the site. This is supported by the possible presence of small amounts of hammer-scale. However, the overall quantity of finds is too low on its own to support the presence of a bloomery and an industrial smithing operation. Therefore, two possibilities become likely, either the excavation has just caught the edge of the site or the debris has been reused. Both these hypotheses, which are not mutually exclusive, can be supported. In favour of the former is the site's location in a river bank, its nature constraining the layout of the workings. The latter hypothesis, however, is strongly supported by the crushed slags from context 6, suggesting they were being ground up either to recover the metal content or for use as an abrasive to finish the tools as is still the case among traditional smiths in East Africa (Brown 1995).

LEATHER SHOE (FIG. 27)

By KevinTrott

The small collection of leather, which was preserved in the waterlogged deposits adjacent to the river Monnow, comprised a near complete seventeenth-century latchet-fastening shoe. Welted shoe components of seventeenth-century style were found in a context dating from the mid sixteenth to mid

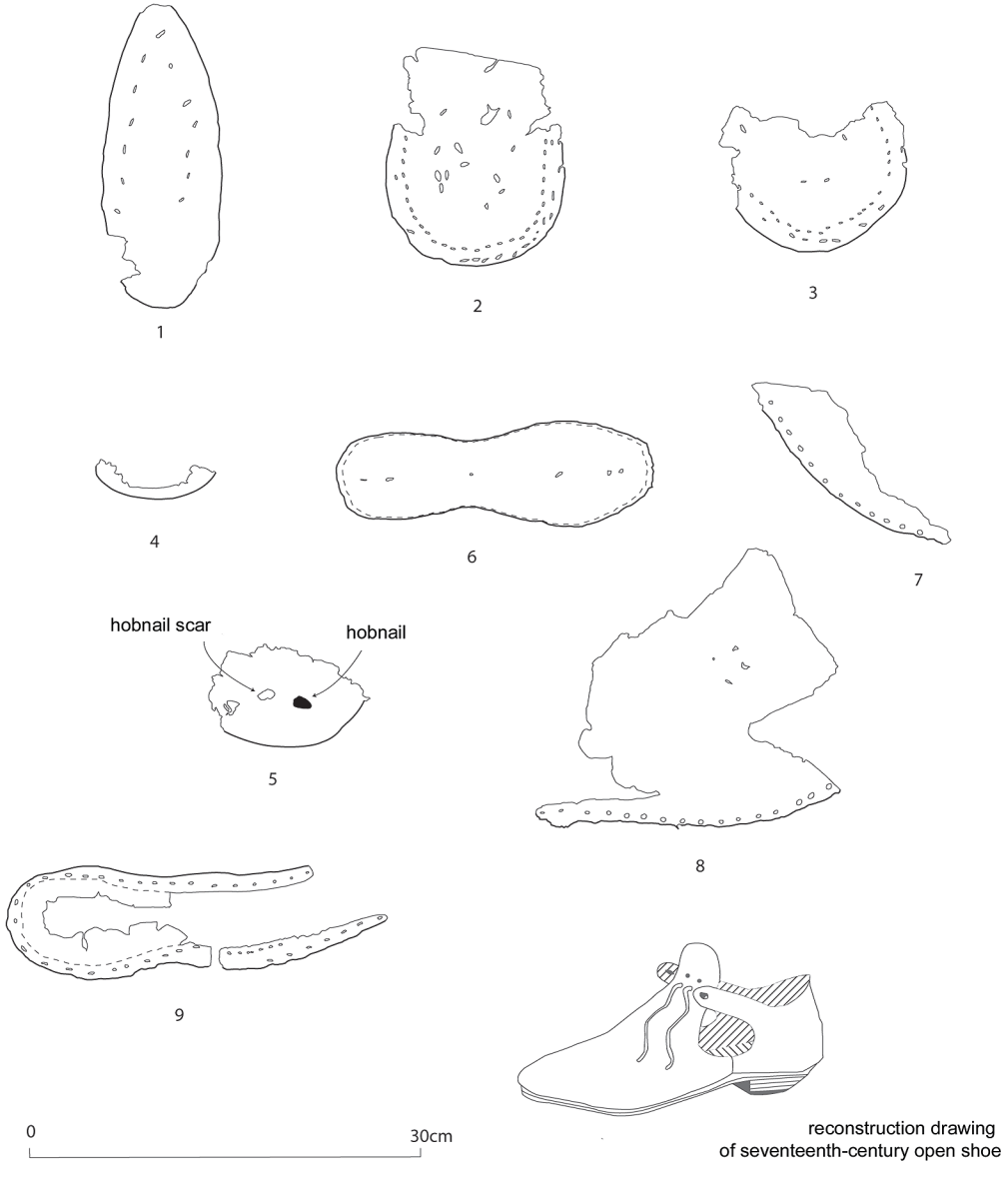


Fig. 27. Fragments of leather shoe.

eighteenth century (Phase 3). The shoe was sufficiently complete for its style and method of manufacture to be understood in some detail. The components of the shoe included parts of the middle, heel, insole, welt, and vamp. The thick sole was straight, neither distinctly for the left or right foot, and often worn flesh side to the ground. The foot lay on an insole, grain side upward to the foot with a tread, waist and seat of relatively uniform width and usually a square-shaped toe. The upper and bottom units were joined by two separate seams to a welt around the perimeter using Type 1A (insole joined to upper with an edge/flesh seam) or 1B (as 1A but with bracing) construction. Occasionally one or more middle strips were incorporated into the seam to lie between the sole and the insole as additional packing. A separate stacked leather heel or a heel of alder wood with a leather cover was present at the seat. When a wooden heel was used the sole extended down the heel breast and a separate top piece was added. The insole recovered from the Skenfrith Castle site was certainly from an insole construction of Type 1A with a leather stacked heel, this example has a slightly forked, square toe, a shape popular throughout the seventeenth century. The seventeenth-century shoe upper comprised a vamp and separate two-piece quarters with either grain side outward or flesh side outward, as buff or suede leather. The vamp was often supported internally by a toe puff incorporated into the lasting margin and held by whipped stitching. The vamp extended high up the instep into the rounded tongue. The tongue was pierced by a single or double pair of lace holes, the extra set being used to hold a decorative rose. The two-piece symmetrical quarters had a butted edge/flesh seam at the centre back and extended into latchets at the top of the butted front seams to lie over the tongue and fasten with laces over the instep.

The style of the shoe upper from Skenfrith Castle was an open-sided shoe, this open-sided or 'draw-bridge' shoe had low side seams with a pronounced recess at the top of the seam below the high tongue and narrow latchets. The vamp had a square-shaped, pleated toe, which slightly overhung the sole, a style that was popular until the 1670s. The open-sided shoe from Skenfrith Castle is from practical footwear dating between *c.* 1620s–1660s, the style being less exaggerated than large open-sided shoes worn at the beginning of the century. The open-sided shoe is comparable in both style and construction with the assemblages from the excavations at Abbey Wharf in Reading (Mould 1997, 108–42). Similar shoes have also been found at the seventeenth-century bastion in Newcastle-upon-Tyne (Vaughan 1981, 208–17) and at the East Gate, Gloucester (Goudge 1983, fig. 105, nos 23, 33, 34).

IRON OBJECTS (FIGS 28–31)

By Chris Smith

A total of 40 iron objects were recovered from the excavations. This report aims to discuss the most diagnostic objects. The iron assemblage was in need of conservation and was sent to York Archaeological Trust for stabilisation and assessment. The report below discusses the illustrated objects.

1. Knife, consisting of a heavy iron blade and tang with moderate corrosion along most of its length (170mm). The handle for the knife (90mm) is in two refitting fragments. It is an oval cut cross section cut from tangentially faced heartwood of common box (*Buxus sempervirens*). An axial hole has been cut to receive the tang of the knife. Charring is present on the surface of the wood within the axial hole indicating heating of the tang before assembly. A groove around the circumference of the handle at the blade end seems to indicate a missing ferrule. (SF 5, context 50, dump deposit, Phase 3).
2. Knife blade. Fragment (70mm) from what appears to be a heavy knife. The blade is honed to a cutting edge on one side only. (SF11, context 50, dump deposit, Phase 3).
3. Knife with a scale tang featuring remarkably well preserved osseous scales with inlaid copper alloy

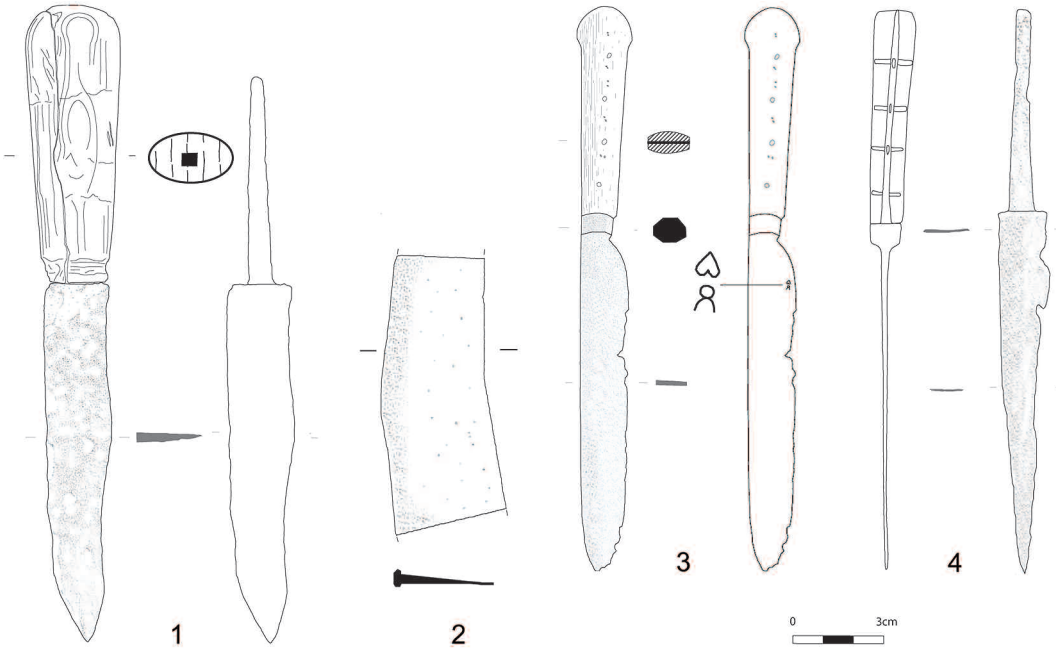


Fig. 28. Knives.

dots. The handle scales, possibly made of antler, are approximately 60mm in length. The blade, in a good state of preservation with some deterioration along its cutting edge, is approximately 120mm long. From the X-ray it is possible to make out 4 functional rivets holding the handle scales in place and 5 inlaid decorative copper alloy dots. An inscribed cutler's mark visible on the blade seems to consist of a small outlined heart motif above a possible 'R'. The small heart motif is popular amongst cutlers' marks of the late sixteenth to early seventeenth centuries (Unwin 1999) with similar examples being a heart above a cross or a letter. Unwin (1999) tells us that cutlers' marks can be done in 'solid' or in 'outline' form although solid designs were more commonly used in the fourteenth to sixteenth centuries. It seems likely therefore that this knife dates to the early seventeenth century. (SF 12, context 50, dump deposit, Phase 3).

4. Knife with a whittle tang in a moderate state of preservation. The handle for the knife is missing. The blade (100mm) features a sharply-angled cutting edge and a possible repair or weld mark. No cutler's mark is visible on the blade of this knife. (SF 13, context 50, dump deposit, Phase 3).
5. Knife with a whittle tang. The knife handle is of a turned osseous design featuring several grooves and rises. The handle (60mm) is in a remarkably good state of preservation although a fragment does appear to have broken off at some point. The blade (100mm) is pockmarked by pitting with deterioration around the cutting edge and the point. A cutler's mark of a 'Z' or an 'N' is visible on the knife blade. Cutlers' marks such as this are increasingly hard to identify and date as they probably represent the cutler's initial. Typological dating of the cutler's mark, combined with the style of knife handle, suggests a seventeenth-century date. (SF 14, context 50, dump deposit, Phase 3).
6. Knife with a whittle tang, the handle surviving in a good state of preservation. The handle (50mm) is of a turned osseous variety featuring inscribed decoration, grooves and rises. The handle also has a fitted osseous end plug or cap also with inscribed decoration. The inscribed decorative grooves on the

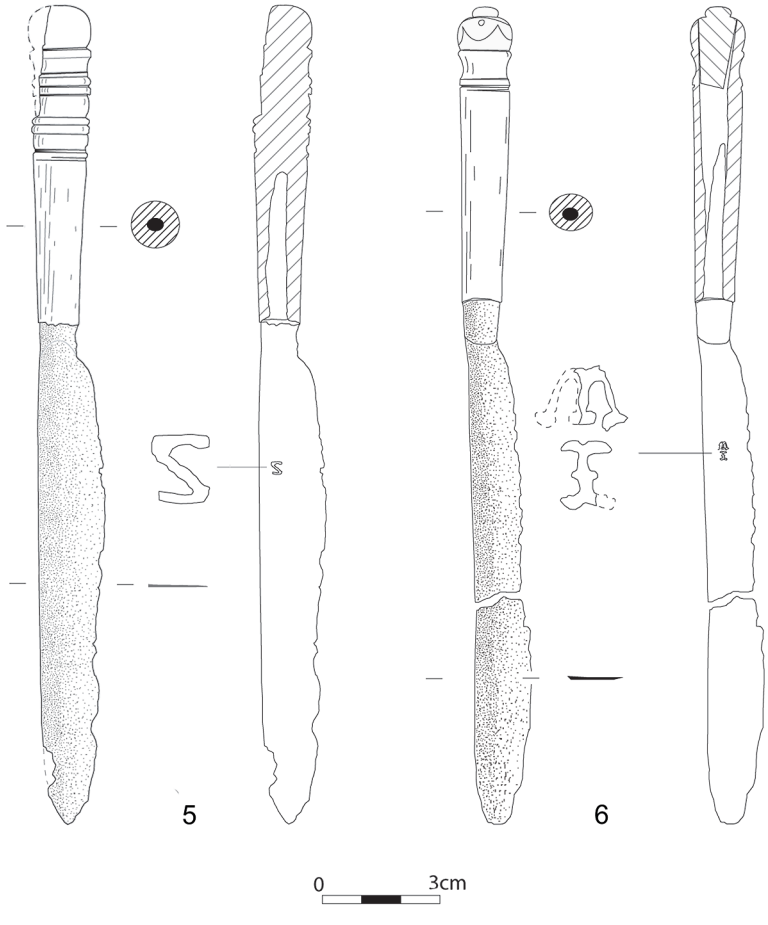


Fig. 29. Knives.

knife handle have also been inlaid with a white metal, possibly silver or lead alloy, which still partly survives. The knife blade (100mm) is in a fragile condition with heavy deterioration along the cutting edge. A cutler's mark is visible on the blade and is comprised of an 'I' above a 'W'. Cutlers' marks consisting of two letters begin to be used after 1631 (Unwin 1999). Stylistically the 'I' is very similar to that of the early eighteenth-century cutler Joseph Goodinson. SF15 seems, therefore, to date from the mid seventeenth to early eighteenth centuries. (SF 15, context 50, dump deposit, Phase 3).

7. Knife with a whittle tang, but missing its handle. The blade (130mm) features a long octagonal shoulder plate and is in a good state of preservation with only minor deterioration along the cutting edge. A punched 'H' on the upper part of the blade serves as the cutler's mark. As with SF14 single letter cutlers' marks are very hard to date and identify. Stylistically, however, this mark is very similar to that of the early seventeenth-century cutler Edward Oakes (Unwin 1999). (SF 16, context 50, dump deposit, Phase 3).
8. Knife of folding 'penknife' design, and in a poor state of preservation. Most of the blade is missing with heavy deterioration present on the remainder. The handle/case of the knife appears to be hollow and to have been constructed in three parts. Mineralized organic remains preserved on the

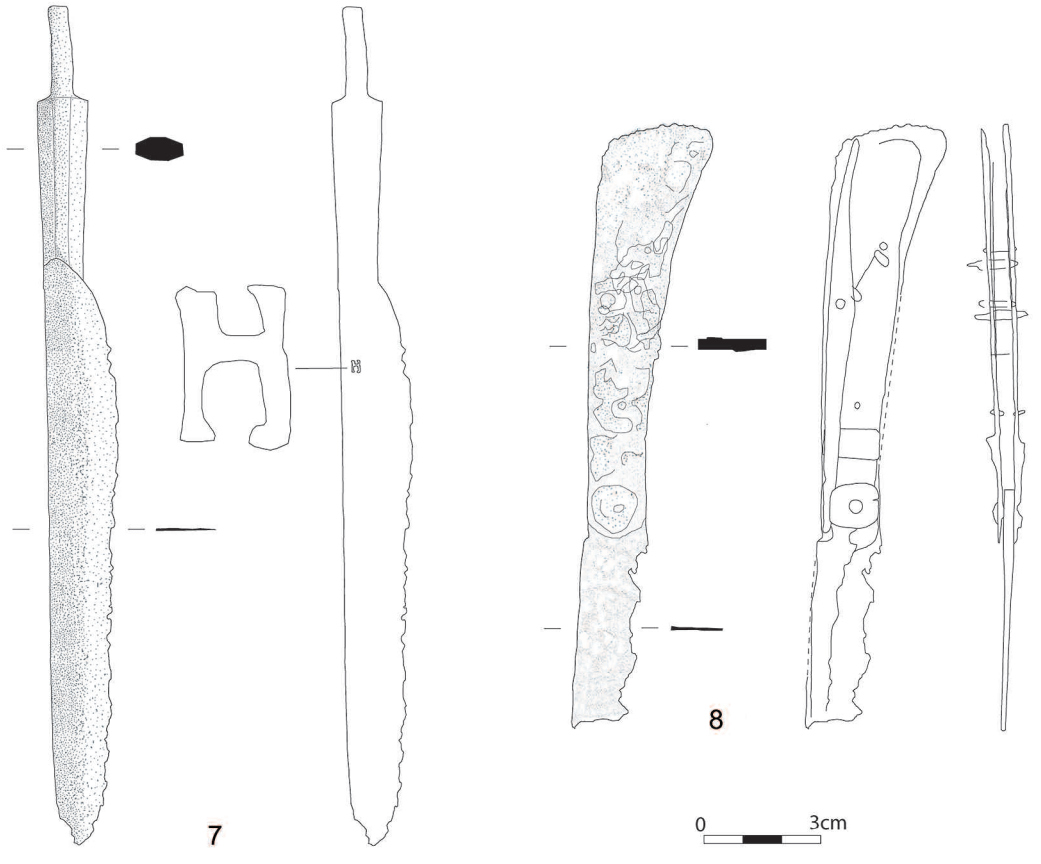


Fig. 30. Knives.

handle/case suggest its scales (now missing) were made of animal horn. The blade of the knife would have folded away into the handle/case by pivoting on a perforation and axle bar. (SF 17, context 50, dump deposit, Phase 3).

9. Small copper alloy buckle (20mm). It has a straight strap bar and features a D-shaped frame. Simple D-shape buckles vary enormously in size and span most of the period 1250–1650 (Whitehead 1996). Typologically however, a date of around 1300–1400 can probably be assigned to this buckle (Whitehead 1996). (SF 7, context 50, dump deposit, Phase 3).
10. A rim fragment from a copper alloy vessel, broken along three edges. The vessel appears to have been quite shallow and approximately 220mm in diameter. (SF 8, context 50, dump deposit, Phase 3).
11. Tanged punch (40mm). The punch has a 90° bend giving the tool two functioning ends of varying size. (SF 10A, context 50, dump deposit, Phase 3).
12. Possible handle or part of a key (50mm). A break appears to have occurred along the objects shaft. Corrosion is evident around the loop of the object. (SF 10B, context 50, dump deposit, Phase 3).
13. Small lock plate or bolt. The thin iron projection from the side of the object would appear to serve as a spring mechanism. (SF 10C, context 50, dump deposit, Phase 3).
14. Copper alloy pin (not illustrated), 25mm in length which, when under ×20 magnification, appears to

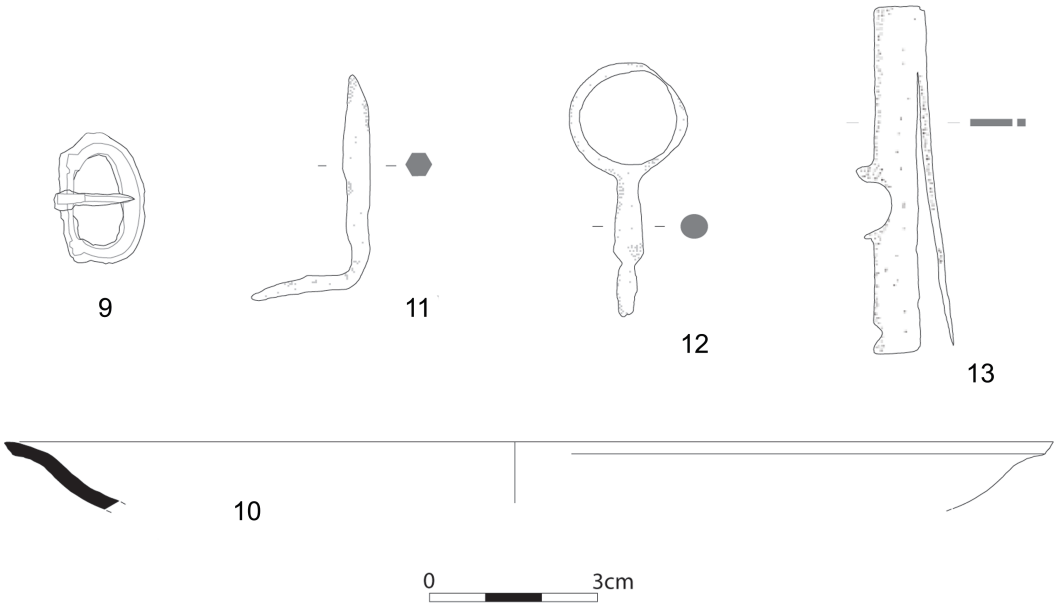


Fig. 31. Metal finds.

be of a spirally wound wire head design with a tapering shank. The pin has the appearance of being made of gold; this may be due to a thin gold-coloured sulphide layer or an exposed core after damage to an outer crust. (SF 6, context 50, dump deposit, Phase 3).

WORKED STONE

By Chris Smith

A total of seventeen pieces of worked stone were recovered from the excavations. These were largely residual and found in a later seventeenth-century context. Only one piece was found in the moat fill adjacent to the castle (1, see below). The pieces form a wide date range associated with the medieval castle. The entire assemblage is made up of old red sandstone. All but three of the pieces recovered bear evidence of tool marks. The assemblage comprises eleven faced blocks, four fragments of roof tiles, one chamfered base and one round cornered window edging. The fact that this amount of dressed stone was found in the same location with no apparent relation to any structure may indicate that this material was dumped to revet the bank to protect it from erosion, as discussed above.

1. Round cornered window edging (not illustrated). A dressed block of Old Red Sandstone measuring 0.2m × 0.25m × 0.19m. (Trench 3, context 303, Period 3).
2. A round cornered edging piece (not illustrated) likely to have been from an external window surround. This particular example is damaged along the two rear edges and is relatively weathered in appearance. Examples of window surrounds such as this can be seen *in situ* at Skenfrith Castle (Phase 3) and at other locations such as Lancaster Castle (Meakin 1988) and Goodrich Castle (Renn 1993).

3. The single chamfered piece (not illustrated) is likely to have come from the base of an external wall and was also recovered as a residual object from a later seventeenth-century context. The piece has a 45° sloping chamfered edge along one side with other edges showing evidence of damage. Weathering seems limited in this particular piece, as undamaged edges remain intact.
4. Eleven facing blocks (not illustrated) all apparently residual material recovered from the same late seventeenth-century context. The blocks are of a uniform size and shape (0.2m × 0.2m × 0.4m) and all bear tool marks. Included in the facing blocks are two triangular profiled possible corner blocks. Facing blocks such as these are not closely datable but are likely to have been associated with the medieval castle. The amount of damage from weathering on these facing blocks is limited, perhaps suggesting they faced an internal wall.

WINDOW GLASS (FIG. 32)

By Chris Smith

A total of 172 fragments of window and vessel glass were recovered from the excavations (Phase 3). This report aims to discuss the diagnostic window glass fragments. The vessel glass from the site was all of recent date. The window glass assemblage was in need of conservation and was sent to York Archaeological Trust for stabilisation and assessment. The catalogue below discusses the illustrated diagnostic fragments. Also amongst the assemblage were several sherds of multi-layered ruby glass (not illustrated). The production of a ruby-coloured glass presented problems in that it transmitted so little

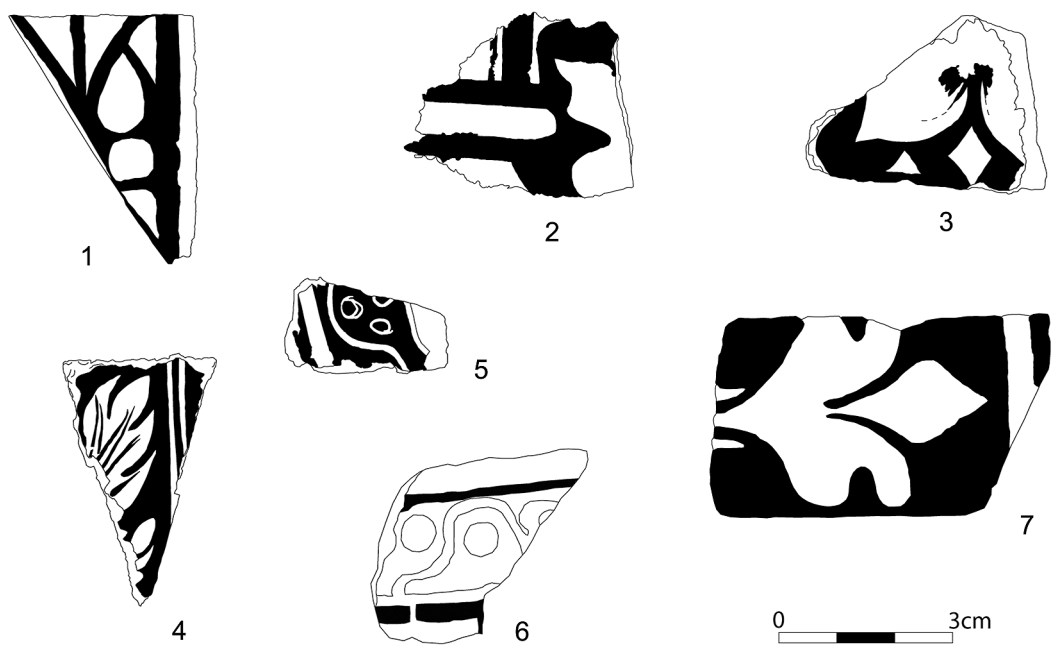


Fig. 32. Decorated window glass.

natural light: 'The imaginative solution to this problem was to manufacture multi layered glasses consisting of very many narrow layers of red and white glass' (Newton and Davison 1989).

1. Triangular piece of painted window glass. The decoration on the piece can be seen in reflected light to have traces of blue-green colouring. Under transmitted light conditions yellow decoration and a grey-buff deteriorated background are more clearly visible. A pitted pale green transparent core has been exposed at one corner of the fragment along with one edge being grozed. The pattern on this fragment may represent a stickwork or reserve-patterning border (Graves 2000). Parallels can be drawn with fragments from the late fourteenth/early fifteenth century assemblage from St Andrews Priory, York (Graves 2000). However, the vaulted design on the fragment may also be representative of a window or traceried architectural construction. (SF 18J).
2. Rough sherd of painted glass with traces of red oxide paint on a thick buff-coloured deteriorated layer. A pitted pale green transparent core is exposed around the edges. The patterning on this sherd may be suggestive of a leaf tip, a commonly recurring theme in painted glass. Similarities can be seen between this pattern and those from the Haverholme Priory, Lincolnshire (Graves 2000). (SF19J).
3. Sherd of painted glass with surviving charcoal-grey paint on a deteriorated pale amber layer above a pitted pale green transparent core. Within the profile it is possible to observe the layer formation of the fragment thus hinting at manufacturing techniques. One edge of the sherd is grozed, giving credence to its use as a border piece. It is possible to make out what may be a leaf outline spreading towards the grozed edge although the charcoal grey paint is highly corroded in this area. A diamond and a half diamond flank the possible leaf design edge. (SF 20J).
4. Sherd of painted glass which features charcoal grey painted 'vegetal scenery' (Graves 2000) on a pale amber deteriorated background layer. The fragment has an exposed pitted pale green transparent core and the edges and underside have lost their original surfaces. Vegetal scenes such as this are common throughout the medieval period and later. There are good parallels to be drawn between this sherd and those found at Sempringham Priory, Lincolnshire from a mid fourteenth- to early fifteenth-century context and from St Andrews Priory, York, of a similar date (Graves 2000). (SF 21J).
5. Painted glass sherd featuring charcoal-grey and possibly white painted decoration on a deteriorated pale amber layer. The sherd has a pitted pale green transparent core exposed and one edge has been grozed for joining. The design features a blank linear (possibly a border) and a subcircular design enclosing three other small circles. It is possible that this may represent a small piece of a stickwork border similar to those found at St Andrews Priory, York (Graves 2000). (SF 22J).
6. Painted glass sherd that was recovered in a highly deteriorated state of preservation. After conservation the painted decoration was exposed. The decoration consists of two charcoal-grey borders flanking a red oxide stickwork pattern. This particular piece of encircled stickwork edging pattern has parallels with many other medieval glass assemblages dating from the fourteenth or fifteenth centuries (Newton and Davidson 1989). (SF 23J).
7. Opaque painted glass sherd. In transmitted light an amber hue is visible. It shows traces of a grey or black background painted on what was originally green glass. The background is painted in such a way that a blank foreground was left in the shape of a fleur-de-lys. This is a medieval design common on many heraldic stained glass scenes as at York Minster (Graves 2000). (SF 24J).

ANIMAL BONE
By Paul Westron

The animal bones were all from a seventeenth-century context. The assemblage is relatively small, consisting of 107 fragments, of which 38 (35%) were identified to species (Table 4). Due to its size and nature only limited conclusions can be drawn from the assemblage. There are eight species represented within this assemblage. Six mammal and two bird species are represented—cattle (Bos), sheep/goat (Ovis/Capra), pig (Sus), horse (Equus), dog (canine), Mallard and domestic fowl. The general condition of the bone is good or very good with several examples having ivoried surface. There was limited damage to the bone by any natural taphonomic processes with no examples of gnawing. There were no pathological bone changes identified. There is an unusually high representation of horse bones within the assemblage, with all the other species being typical of the period. There are several examples of burnt bone, with pieces discoloured throughout suggesting exposure to intense heat. This is more severe than would be expected from cooking alone, and may have occurred accidentally or through deliberate acts of burning. There are two examples of butchery. The first is a chop to a cow size tibia fragment, probably related to butchery or splitting for marrow. The second is a chop to the skull and horn core, which may be related to industrial activity or extraction of the brain. The majority of this assemblage is not unusual and is what would be expected for a post-medieval site. The relatively high number of disarticulated horse remains may relate to the castle context. They may have been butchered and the meat feed to the hounds in the castle.

Table 4: Animal species representation

Species	No. of identified specimens	No. of identified specimens %	Minimum no. of individuals
Cow	10	26	1
Sheep/goat	8	21	2
Pig	1	3	1
Horse	15	39	3
Dog	1	3	1
Mallard	2	5	1
Domestic fowl	1	3	1
Cow size	42	–	–
Sheep size	14	–	–
Unidentified	13	–	–

THE ENVIRONMENT AND ECONOMY AT SKENFRITH CASTLE
By Astrid E. Caseldine and Catherine J. Griffiths

The discovery of a stone wharf, slipway and stone building during the excavation of the river bank to the north of Skenfrith Castle, provided an opportunity to take samples which might give some indication of the surrounding environment, the agricultural economy, the diet of the people and the possible use made of other plant resources which were available at the time the structures were in use. The archaeological evidence suggests the deposits investigated are mid to late twelfth century in date.

Table 5: Pollen evidence from Skenfrith Castle

Monolith	1	1	1	1	1	1	1	2
Depth	96 cm	80 cm	64 cm	48 cm	32 cm	16 cm	0 cm	20 cm
Total (%)	Total (%)	Total (%)	Total (%)	Total (%)	Total (%)	Total (%)	Total (%)	
Trees								
Betula	–	1 (4.3)	2 (1.2)	58 (19)	2 (3.2)	4 (1.3)	5 (2.3)	–
Pinus	–	–	–	–	–	1 (0.3)	1 (0.5)	–
Ulmus	–	–	2 (1.2)	2 (0.7)	–	7 (2.3)	2 (0.9)	–
Quercus	–	–	5 (3)	4 (1.3)	2 (3.2)	4 (1.3)	12 (5.4)	–
Tilia	1 (2)	–	1 (0.6)	4 (1.3)	–	–	1 (0.5)	–
Alnus	3 (6)	2 (8.7)	33 (19.8)	71 (23.3)	12 (19.4)	105 (35)	60 (27)	5 (15.2)
Fraxinus	–	–	1 (0.6)	–	–	6 (2)	4 (1.8)	–
Total trees	4 (8)	3 (13)	44 (26.3)	139 (45.6)	16 (25.8)	127 (42.3)	85 (38.3)	5 (15.2)
Shrubs								
Corylus avellana type	3 (6)	3 (13)	15 (9)	27 (8.9)	1 (1.6)	25 (8.3)	18 (8.1)	1 (3)
Salix	–	–	2 (1.2)	2 (0.7)	–	4 (1.3)	3 (1.4)	–
Hedera	–	–	1 (0.6)	–	–	–	–	–
Ilex	–	–	–	–	–	–	–	–
Ligustrum	–	–	1 (0.6)	1 (0.3)	–	–	–	–
Sorbus	–	–	1 (0.6)	1 (0.3)	–	1 (0.3)	–	–
Rubus	–	–	–	–	–	–	1 (0.5)	–
Sambucus	–	–	1 (0.6)	1 (0.3)	–	1 (0.3)	1 (0.5)	–
Calluna	–	–	–	–	–	–	1 (0.5)	–
Total shrubs	3 (6)	3 (13)	21 (12.6)	32 (10.5)	1 (1.6)	33 (11)	24 (10.8)	1 (3)
Herbs								
Poaceae	3 (6)	4 (17.4)	51 (30.5)	82 (26.9)	19 (30.6)	82 (27.3)	70 (31.5)	10 (30.3)
Cerealia type	–	–	9 5.4)	3 (1)	2 (3.2)	3 (1)	1 (0.5)	–
Cyperaceae	4 (8)	2 (8.7)	2 (1.2)	2 (0.7)	1 (1.6)	3 (1)	1 (0.5)	5 (15.2)
Anthemis type	–	–	–	6 (2)	1 (1.6)	–	1 (0.5)	–
Aster type	–	–	2 (1.2)	–	–	–	2 (0.9)	–
Artemisia type	–	–	2 (1.2)	2 (0.7)	–	3 (1)	–	–
Centaurea cyanus	–	–	–	1 (0.3)	–	–	–	–
C. nigra	–	–	–	3 (1)	–	1 (0.3)	2 (0.9)	–
Cirsium type	–	–	–	1 (0.3)	–	1 (0.3)	–	–
Lactuceae	32 (64)	6 (26.1)	14 (8.4)	20 (6.6)	13 (21)	8 (2.6)	7 (3.2)	10 (30.3)
Caryophyllaceae	1 (2)	–	3 (1.8)	1 (0.3)	–	1 (0.3)	2 (0.9)	1 (3)
Chenopodiaceae	–	1 4.3)	2 1.2)	1 0.3)	1 1.6)	–	–	–
Brassicaceae	1 (2)	2 (8.7)	1 (0.6)	1 (0.3)	2 (3.2)	2 (0.6)	4 (1.8)	1 (3)
Filipendula	–	–	1 (.6)	2 (0.7)	1 (1.6)	7 (2.3)	1 (0.5)	–
Lamiaceae	–	–	–	1 (0.3)	–	–	–	–
Lotus type	–	–	–	–	–	–	1 (0.5)	–
Trifolium	–	–	–	–	–	–	–	–
Vicia	–	–	–	–	–	1 0.3)	–	–
Hypericum perforatum	–	–	–	–	–	1 (0.3)	1 (0.5)	–
Linum bienne type	–	–	1 (0.6)	–	–	–	–	–
Chelidonium	–	–	1 (0.6)	–	–	–	–	–
Plantago lanceolata	–	1 (4.3)	5 (3)	2 (0.7)	–	15 (5)	9 (4.1)	–
Persicaria maculosa type	–	–	1 (0.6)	–	–	–	–	–
Anagallis	–	–	–	–	–	–	1 (0.5)	–
Potentilla type	–	–	–	1 (0.3)	1 (1.6)	–	–	–
Ranunculaceae	–	–	–	1 (0.3)	–	2 (0.6)	1 (0.5)	–
Rubiaceae	–	–	–	–	1 1.6)	3 1	1 (0.5)	–
Rumex acetosella	–	–	2 (1.2)	1 (0.3)	1 (1.6)	2 (0.6)	1 (0.5)	–
Rumex	–	–	–	1 (0.3)	–	3 (1)	2 (0.9)	–
Scilla type	–	–	–	–	1 (1.6)	–	–	–
Veronica	–	–	–	–	–	1 (0.3)	–	–
Apiaceae	–	–	2 (1.2)	2 (0.7)	–	–	4 (1.8)	–
Urtica	–	1 (4.3)	1 (0.6)	–	–	1 (0.3)	–	–
Indet.	2 (4)	–	–	–	–	–	1 (0.5)	–
Total Herbs	43 (86)	17 (73.9)	102 (61.1)	134 (43.9)	45 (72.6)	140 (46.6)	113 (50.9)	27 (81.8)
Total Land Pollen	50 (100)	23 (100)	167 (100)	305 (100)	62 (100)	300 (100)	222 (100)	33 (100)

Table 5: *continued*

Monolith	1	1	1	1	1	1	1	2
Depth	96 cm	80 cm	64 cm	48 cm	32 cm	16 cm	0 cm	20 cm
Total (%)	Total (%)	Total (%)	Total (%)	Total (%)	Total (%)	Total (%)	Total (%)	
Aquatics								
Callitriche	–	–	1 (0.6)	–	–	–	–	–
Potamogeton	1 (2)	–	–	–	–	–	–	1 (2.9)
Typha angustifolium	–	–	2 (1.2)	–	–	–	–	–
Total Aquatics	1 (2)	–	3 (1.8)	–	–	–	–	1 (2.9)
Spores								
Blechnum	–	–	2 (0.8	–	–	–	–	–
Osmunda	–	–	1 (0.4	–	–	–	–	–
Polypodium	–	–	–	–	–	1 (0.3)	–	–
Pteridium aquilinum	62 (51.2)	38 (53.5)	48 (20)	58 (15.6)	19 (21.1)	60 (16.3)	63 (21.1)	63 (58.9)
Adiantum	–	–	1 (0.4)	–	–	–	–	–
Asplenium type	–	–	5 (2.1)	–	–	–	–	–
Dryopteris cristata	–	–	1 (0.8)	–	–	–	–	–
Dryopteris felix- mas type	–	–	2 (0.8)	–	–	1 (0.3)	–	–
Woodsia type	–	–	1 (0.4)	–	–	–	–	–
Pteropsida monolete indet.	9 (7.4)	10 (14.1)	12 (5)	3 (0.8)	7 (7.8)	5 (1.4)	11 (3.7)	11 (10.2)
Sphagnum	–	–	–	6 (1.6)	2 (2.2)	–	3 (1)	–
Total Spores	71 (58.6)	48 (67.6)	73 (30.4)	67 (18)	28 (31.1)	69 (18.7)	77 (25.8)	74 (69.1)
Other remains								
Trichuris (whipworm)	–	–	1	–	–	1	1	–

Two pollen monoliths were taken. Monolith 1 was from the slipway deposits and monolith 2 was through the basal deposit of the wharf (33) and into the underlying material. Nineteen bulk samples were taken. Sample 3 was from a layer of redeposited river gravel thought to date to the beginning of the thirteenth century. Five samples (4, 5, 6, 7, 8) were from clay deposits considered to be possible floor levels of a building indicated by walls 30 and 32. These deposits occurred between walls 30 and 31, the latter a wall which cut the floor deposits of the building. Three samples (18, 20, 21) were from deposits between walls 31 and 32. One sample (9) was from a layer below the building and one sample (10) was from below wall 31. A series of samples (12, 13, 14, 15) were also taken from deposits west of the building, i.e. abutting wall 30. Two samples (22, 24) were from deposits associated with the slipway and two samples (26, 29) were from deposits associated with the steps at the eastern end of the wharf.

METHODS

Selected samples were taken from the monoliths for pollen analysis. Seven samples were examined from monolith 1 and one sample was examined from monolith 2. The samples were prepared following standard procedures including hydrofluoric acid to remove minerogenic material and acetolysis to remove cellulose (Moore *et al.* 1991). The samples were identified using a Leitz microscope. Magnifications used were ×400and ×1000. Pollen identification keys (e.g. Moore *et al.* 1991) and modern reference material were used to identify the pollen. The pollen sum was 300 total land pollen but where the pollen concentration was low, the number of pollen grains counted was based on a count of 500 *Lycopodium* spores, an exotic which had been added to the samples in order to allow pollen concentrations to be calculated. The results are given in Table 5. Nomenclature is modified from Moore *et al*. (1991) and based on Bennett (1994) and Bennett *et al.* (1994).

Table 6: Plant macrofossils from Skenfrith Castle

Sample no.	3	4	5	6	7	8	9	10	12	13	14	15	18	20	21	22	24	26	29	Habitat preference
Sample size – litres	7.25	5.25	6.75	6.25	5.25	8.25	8.25	6.25	5.75	5.25	4.25	1	1	0.75	1.05	1	0.95	1	4.25	
Taxa																				
CHARRED																				
Cereals																				
"Hordeum sp. – straight (Barley), grain"	–	–	–	–	1	–	–	–	1	2	–	–	–	–	–	–	–	–	–	A
"Hordeum sp. – twisted, grain "	–	–	1	–	3	–	–	–	2	1	–	1	–	–	1	–	–	–	–	
"Hordeum sp. – indet., grain"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Hordeum sp. – rachis	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	
cf. *Hordeum sp.* – grain	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	A
Avena strigosa Schreber (Bristle oat) – pedicels	–	–	–	–	–	–	–	–	–	–	1	4	–	–	–	–	–	–	–	A
Avena strigosa / A. sativa – floret bases	–	–	–	1	20	–	–	–	–	3	4	3	–	–	–	–	–	–	–	A
Avena sativa L. – grain + (Oat) floret	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	A
Avena sativa L. – pedicels	–	–	–	–	–	–	–	–	–	–	13	9	–	–	–	–	–	–	–	A
Avena spp. – grain + floret	–	–	–	–	–	–	–	–	–	–	–	3	–	–	–	–	–	–	–	A
Avena spp. – grain	12	5	32	14	27	13	9	25	23	57	47	39	2	3	22	1	–	1	2	A
cf. *Avena spp.* – grain	–	–	–	1	1	–	–	–	–	–	–	2	–	–	–	–	–	–	–	A
Avena /Bromus – grain	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	A
Avena/Poaceae – grain	–	–	–	–	6	–	–	–	–	1	–	–	–	–	–	–	–	–	–	A
Secale cereale L. – grain (Rye)	–	–	–	–	–	–	–	–	–	–	2	6	–	–	1	–	–	–	–	A
Secale cereale L. – rachis	–	–	–	–	–	–	–	–	1	–	13	28	–	–	–	–	1	–	–	A
Hordeum/Secale – rachis	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	A
Triticum/Secale – grain	–	–	–	–	3	–	–	–	–	–	2	1	–	–	–	–	–	–	–	A
Triticum spelta L. – grain	–	–	–	–	–	–	–	–	–	–	5	–	–	–	–	–	–	–	–	A
Triticum aestivum L. – grain (Bread wheat)	11	2	20	22	114	1	8	24	14	79	85	83	–	1	3	–	–	1	–	A
Triticum aestivum L. – sprouted grain	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	
Triticum aestivum L. – rachis	5	–	–	–	18	–	–	2		8	61	82	–	–	–	2	1	–	–	
T. cf. *aestivum* – grain	–	1	1	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	–	A
Triticum sp. – grain	–	–	–	–	15	–	–	–	–	–	–	–	1	1	3	–	–	1	–	A
Triticum sp. – glume base	–	–	–	–	–	–	–	–	–	–	1	2	–	–	–	–	–	–	–	
Triticum sp. – rachis	–	–	1	2	1	–	–	–	1	2	–	–		1	2	3	–	–	–	
cf. *Triticum* sp. – grain	1	–	–	–	2	–	–	–	–	–	1	–	–	–	–	–	–	–	–	A
Cerealia indet. – grain	–	–	–	11	3	2	4	2	8	18	100	15	2	–	–	–	–	–	–	A
Cerealia indet. – rachis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1	–	
Straw nodes	–	–	–	–	–	–	–	–	–	–	10	6	–	–	–	–	–	–	–	A
Straw frags	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	A
Other plants																				
Ranunculus repens type (Creeping buttercup)	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	Gw, B, M, C
Corylus avellana L. (Hazelnut) – frags	1	2	2	4	1	–	–	4	5	7	3		2	–	–	–	–	–	–	W
Atriplex spp. (Oraches)	–	–	–	–	1	–	–	6	–	–	–	1	–	–	–	–	–	–	–	A, D, C, B
Stellaria sp. (Stitchworts)	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	W, B, A, M, G
Agrostemma githago L. (Corncockle)	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	A, D
Persicsaria spp. (Knotweeds)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	G, B, D, A, w

Sample no. Sample size – litres	3 7.25	4 5.25	5 6.75	6 6.25	7 5.25	8 8.25	9 8.25	10 6.25	12 5.75	13 5.25	14 4.25	15 1	18 1	20 0.75	21 1.05	22 1	24 0.95	26 1	29 4.25	Habitat preference
Rumex acetosella L. (Sheep's sorrel)	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	A, G, H
Rumex spp. (Docks)	–	–	1	–	–	–	–	–	4	–	1	–	–	–	–	–	–	–	–	G, A, B, W, w
Viola sp. (Violets)	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	W, G, H, M
Raphanus raphanistrum L. (Wild radish) – capsule frags	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	A, D
Calluna vulgaris (L.) Hull (Heather) – leaf frags	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	H, M ,W
Erica tetralix L. (Cross-leaved heath) – leaf frags	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	M, Hw
Rubus fruticosus L. agg. (Brambles)	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	W, G
Rosacaea fruit frag.	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
*Vicia hirsut*a (L.) Gray (Hairy tare)	1	–	2	–	1	–	–	–	–	–	4	5	–	–	–	1	–	–	–	D, G
Vicia tetrasperma (L.) Schreber (Smooth tare)	–	–	–	–	–	1	–	2	–	–	2	–	–	–	–	–	–	–	–	G
V. faba L. (Broad bean)	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	A
V. faba L. (Broad bean) – frags	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	A
Vicia sp. (Vetches)	5	–	1	3	1	–	–	1	–	2	11	3	–	1	2	–	–	–	–	G, W, D, H, A
Vicia/Lathyrus (Vetches/Peas)	–	–	3	–	2	–	–	–	–	2	4	2	–	–	–	–	–	–	–	G,W, D, H, A, M
cf.*Linum usitatissium* L. (Flax)	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	A
Plantago lanceolata L. (Ribwort plantain)	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	G
Galium aparine L. (Cleavers)	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	A, D
Lapsana communis L. (Nippleworts)	–	–	–	–	–	–	–	1	2	1	1	–	–	–	–	1	–	–	–	W, D
Leontodon saxatilis Lam. (Lesser hawkbit)	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	G
Anthemis cotula L. (Stinking chamomile)	–	–	–	–	5	1	–	5	–	37	4	–	–	1	2	1	–	–	–	A, D
Chrysanthemum segetum L. (Corn marigold)	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	A, D
Poaceae (grasses)	–	1	–	1	–	–	–	–	–	1	1	3	–	–	–	–	–	–	–	G, H, M, W, w, R
Leaf buds	–	–	–	–	–	–	–	–	–	–	1									W
Pteridium aquilinum (L.) Kuhn (Bracken) – leaf frags	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	W, H, M
Leaf bud	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	
Charred fibrous material	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Charred material indet.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	3	
WATERLOGGED																				
Ranunculus repens type (Creeping buttercup)	–	2	–	–	–	–	–	–	–	–	7	3	5	1	16	7	–	4	3	Gw, B, M, C
R. sceleratus L. (Celery-leaved buttercup)	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–		–	–	–	Aq, B, M
R. Subgenus Batrachium (Crowfoots)	–	–	–	–	–	–	–	–	–	–	–	2	1	–	1	1	–	1	–	Aq
Papaver rhoeas L (Common poppy)	–	–	–	–	–	–	–	–	–	–	–	2	2	–	–	–	–	–	–	A, D, R
P. dubium L. (Long-headed poppy)	–	–	–	–	–	–	–	–	–	–	2	–	3	3	5	1	–	2	–	A, D, R
P. argemone L. (Prickly poppy)	–	–	–	–	–	–	–	–	–	–	4	7	4	1	–	1	–	–	–	A, D
Ficus carica L. (Fig)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	A
Urtica dioica L. (Common nettle)	–	–	1	–	–	–	–	1	–	26	228*	302	18	85	152*	93	16	272*	36	W, M, A, N
Urtica dioica L. Semi-charred	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	W, M, A, N
U.urens L. (Small nettle)	–	–	–	–	–	–	–	–	–	–	22	20	1	7	8	1	–	–	–	A, D
Betula spp. (Birch)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	W, H
*Alnus glutinos*a (L.) Gaertner (Alder)	–	4	–	–	–	–	–	–	–	–	–	1	2	1	3	38	–	1	2	Ww, M

Table 6: *Continued*

Sample no.	3	4	5	6	7	8	9	10	12	13	14	15	18	20	21	22	24	26	29	Habitat preference
Sample size – litres	7.25	5.25	6.75	6.25	5.25	8.25	8.25	6.25	5.75	5.25	4.25	1	1	0.75	1.05	1	0.95	1	4.25	
A. glutinosa (L.) Gaertner cone	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	Ww, M
A. glutinosa (L.) Gaertner cone-scale	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	2	–	–	–	Ww, M
Corylus avellana L. (Hazelnut) – frags	–	–	–	–	–	3	–	–	–	–	8	2	5	1	6	1	–	2	1	W
Chenopodium album L. (Fat-hen)	–	–	–	–	–	1	–	2	–	–	36	2	11	5	6	16	3	7	2	A, D
cf. *Chenopodium* sp. (Goosefoots)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–		–	–	–	A, D, C
Atriplex spp. (Oraches)	1	–	–	–	–	4	1	9	–	–	210	138	64	37	322	45	1	34	–	A, D, C
Chenopodiaceae indet.	–	–	–	–	–	–	–	–	–	–	11	–	–	–	–	–	–	–	–	A, D, C
Moehringia trinervia (L.) Clairv. (Three-nerved sandwort)	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1	–	W
Stellaria nemorum L. (Wood stitchwort)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	–	–	Ww, B
Stellaria media (L.) Villars (Common chickweed)	–	1	1	–	–	–	–	–	–	–	32	40	16	13	53	5	–	46	1	A, D, R, C
Stellaria neglecta Weihe (Greater chickweed)	–	–	–	–	–	–	–	–	–	–	–	–	–	4	10	–	–	21	–	W, B
Stellaria palustris Retz (Marsh stitchwort)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	M
Stellaria graminea L. (Lesser stitchwort)	–	–	–	–	–	–	–	–	–	–	–	–	–	4	–	–	–	1	–	G, W
Stellaria sp. (Stitchworts)	–	–	–	–	–	–	–	–	–	–	–	1	5	–	–	3	–	10	–	W, B, A, M, G, C, D, R
Cerastium spp. (Mouse-ears)	–	–	–	–	–	–	–	–	–	–	–	–	–	3	2	–	–	1	–	G, A, C, D
Scleranthus annuus L. (Annual knawel)	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	A, D
Spergula arvensis L. (Corn spurrey)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	A, R
Agrostemma githago L. (Corncockle)	–	–	–	–	–	–	–	–	–	–	–	1	–	1	1	–	–	–	–	A, D
Agrostemma githago L. – frags	–	–	–	–	–	–	–	–	–	–	2	64	6	5	34	4	1	50	1	A, D
Silene latifolia Poiret (White campion)	–	–	–	–	–	–	–	–	–	–	1	–	–	9	–	2	–	2	–	A, D, R
Persicaria maculosa Gray (Redshank)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2	3	–	1	–	A, D
P. lapathifolia (L.) Gray (Pale persicaria)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	D, A, w
P. hydropiper (L.) Spach (Water-pepper)	–	–	–	–	–	–	–	–	–	–	5	3	21	5	63	1	–	2	–	Aq
P. laxiflora (Wihe) Opiz (Tasteless water-pepper)	–	–	–	–	–	–	–	–	–	–	–	1	1	1	10	–	–	–	–	Aq
Persicaria spp. (Knotweeds)	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	–	–	G, B, D, A, w
Polygonum aviculare L. (Knotgrass)	–	–	–	–	–	–	–	–	–	–	3	21	26	6	35	13	–	5	–	R, D, C
Rumex acetosella L. (Sheep's sorrel)	–	–	–	–	–	–	–	–	–	–	–	3	5	10	5	–	–	2	1	A, G, H
Rumex spp. (Docks)	–	6	4	–	–	–	–	–	–	–	51	46	20	16	24	63	5	20	5	G, D, A, M, B
Rumex spp. with perianth	–	–	–	–	–	–	–	–	–	–	–	2	4	2	13	30	–	5	–	G, D, A, M, B
Rumex spp. – perianth	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	17	–	2	–	G, D, A, M, B
Polygonaceae – perianth	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1		–	–	–	
Polygonaceae sp.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	
Viola arvensis Murray (Field pansy)	–	–	–	–	–	–	–	–	–	–	1	–	1	–	1	1	–	–	1	A, D
Viola spp. (Violets)	–	–	–	–	–	–	–	–	–	–	–	2	4	–	1	–	–	1	–	W, G, H, M
Brassica sp./*Sinapis arvensis* (Cabbages/charlock)	–	–	–	–	–	–	–	–	–	–	–	–	2	5	1	4	–	3	–	D, A
Raphanus raphanistrum L. (Wild radish) – capsule	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	D, A
Raphanus raphanistrum L. – capsule frags	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	D, A
Anagallis arvensis L. (Scarlet pimpernel)	–	–	–	–	–	–	–	–	–	–	4	–	3	2	2	1	–	1	–	A, D
Filipendula ulmaria (L.) Maxim. (Meadowsweet)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	3	–	–	–	M, Ww, Gw, B

Sample no.	3	4	5	6	7	8	9	10	12	13	14	15	18	20	21	22	24	26	29	Habitat preference
Sample size – litres	7.25	5.25	6.75	6.25	5.25	8.25	8.25	6.25	5.75	5.25	4.25	1	1	0.75	1.05	1	0.95	1	4.25	
Rubus fruticosus L. agg. (Brambles)	1	–	–	–	–	5	–	2	–	20	28	35	9	6	19	5	1	3	5	G, W, H
Rubus fruticosus L. agg. – frags	–	–	–	–	–	–	–	2	–	15	31	6	6	6	15	4	3	16	1	G, W, H
Rubus spp. Thorns	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	1	–	–	–	G, W, H
Potentilla erecta (L.) Raeusch (Tormentil)	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	G, H, M, R
Potentilla spp. (Cinquefoils)	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	1	–	1	–	G, H, M, R
Fragaria vesca L. (Wild strawberry)	–	–	–	–	–	–	–	–	–	–	2	–	–	–	2	2	–	–	–	W, G, D
cf. *Fragaria vesca* L.	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	W, G, D
Aphanes arvensis L. (Parsley-piert)	–	–	–	–	–	–	–	–	–	–	–	2	4	3	–	–	–	–	–	A, G
A. inexspectata Lippert (Slender parsley-piert)	–	–	–	–	–	–	–	–	–	–	–	1	1	3	1	–	–	–	–	A, G
Prunus domestica L. (Wild plum)	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	W
Prunus spinosa L. (Blackthorn) – frags	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	–	W
cf. *Prunus spinosa* type (Blackthorn) – thorn	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	W
Prunus sp. (Cherry) – frags	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	W
Malus sylvestris (L.) Miller (Crab apple)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	W
Crataegus monogyna Jacq. (Hawthorn)	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	W
C. laevigata (Poiret) DC. (Midland hawthorn)	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	W
Rosaceae – fruit	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	W
Rosaceae – thorn	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	W
Epilobium hirsutum L. (Great willowherb)	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	3	–	B, M
Euphorbia exigua L. (Dwarf spurge)	–	–	–	–	–	–	–	–	–	–	–	2	1	–	1	–	–	1	–	A
Linum usitatissimum L. (Flax)	–	–	–	–	–	–	–	–	–	–	–	1	–	–	13	–	–	–	–	A
L. usitatissimum L. – capsule frags	–	–	–	–	–	–	–	–	–	–	–	–	–	1	11	1	–	–	–	A
L. catharticum L. (Fairy flax)	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	G, M
Chaerophyllum aureum L. (Golden chervil)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	A, G
Aethusa cynapium L. (Fool's parsley)	–	–	–	–	–	–	–	–	–	–	4	3	3	1	–	–	–	2	–	A, D
Anethum graveolens L. (Dill)	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	A
Conium maculatum L. (Hemlock)	–	–	–	–	–	–	–	–	–	–	1	2	2	–	8	6	2	6	–	D, R
Apium sp. (Marshworts)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	M, C, B
Torilis nodosa (L.) Gaertner (Knotted hedge-parsley)	–	–	–	–	–	–	–	–	–	–	–	3	5	1	7	–	3	–	–	A
Daucus carota L. (Carrots)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	G, D
Hyoscyamus niger L. (Henbane)	–	–	–	–	–	–	–	–	–	2	118	57	2	2	4	13	4	2	9	D
Solanum nigrum L. (Black nightshade)	–	–	–	–	–	–	–	–	–	–	5	2	–	–	2	1	–	–	–	A, D
Verbena officinalis L. (Vervain)	–	–	–	–	–	–	–	–	–	—	–	–	–	–	1	–	–	–	–	G, D
Ballota nigra L. (Black horehound)	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	R, D,W
Stachys sylvatica L. (Hedge woundwort)	–	1	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	W, D, G
Lamium purpureum L. (Red dead-nettle)	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1	–	A, D
Lamium cf. purpureum L.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	A, D
Lamium amplexicaule L. (Henbit dead-nettle)	–	–	–	–	–	–	–	–	–	–	6	1	–	–	–	–	–		–	A, D
Galeopsis segetum Necker (Downy hemp-nettle)	–	–	–	–	–	–	–	–	–	–	–	–	1	–	3	–	–		–	A, D
G. tetrahit L. (Common hemp-nettle)	–	–	–	–	–	–	–	–	–	–	–	2	1	–	1	–	–	1	–	A, D, W, w
Ajuga chamaedrys L. (Wall Germander)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10	–	–	–	G
Prunella vulgaris L. (Selfheal)	–	–	–	–	–	–	–	–	–	–	–	3	–	4	6	2	–	1	–	G, D, W

Table 6: *Continued*

Sample no.	3	4	5	6	7	8	9	10	12	13	14	15	18	20	21	22	24	26	29	Habitat preference
Sample size – litres	7.25	5.25	6.75	6.25	5.25	8.25	8.25	6.25	5.75	5.25	4.25	1	1	0.75	1.05	1	0.95	1	4.25	
Clinopodium vulgare L. (Wild basil)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	W, G
Lycopus europaeus L. (Gypsywort)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	–	–	M, Gw, B
Mentha arvensis L./ M. *aquatica* L. (Corn/Water mint)	–	–	–	–	–	–	–	–	–	–	3	–	2	–	6	–	1	–	2	A, Gw, W, M
Plantago major L. (Greater plantain)	–	–	–	–	–	–	–	–	–	–	–	2	7	1	3	4	1	1	–	A, G, D
Verbascum thapsus L. (Great mullein)	–	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	D, G
Odontites vernus (Bellardi) Dumort. (Red bartsia)	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	G, A, D, R
Galium aparine L. (Cleavers)	–	1	–	–	–	–	–	–	–	–	–	–	–			–	–	–	–	A, W, D
Galium sp. (Bedstraws)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	G, A
Sambucus nigra L. (Elder)	–	–	–	–	1	1	–	4	–	–	3	–	3	4	1	2	1	6	1	W, D
Carduus spp. L. (Thistles)	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	37	–	–	–	G, D, B, W
Cirsium spp. (Thistles)	–	–	–	–	–	–	–	–	–	–	2	4	–	1	–	28	–	–	1	G, R, D, A, Gw, W, M
Centaurea spp. (Knapweeds)	–	–	–	–	–	–	–	–	–	–	–	7	1	–	2		–	–	–	G, D, A
Lapsana communis L. (Nippleworts)	–	–	–	–	–	–	–	–	–	–	11	37	7	44	21	10	–	7	–	W, D
Leontodon spp. (Hawkbits)	–	–	–	–	–	–	–	–	–	–	–	2	–	18	3	1	–	–	–	G
Leontodon spp. – frags	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	
Picris echioides L. (Bristly oxtongue)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	D
P. hieracioides L. (Hawkweed oxtongue)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	G, D
Picris spp. (Oxtongues)	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	–	G, D
Sonchus palustris L. (Marsh sow–thistle)	–	–	–	–	–	–	–	–	–	–	–	6	–	–	–	–	–	–	–	M, B
S. arvensis L. (Perennial sow–thistle)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	89	–	–	–	–	A, D, R, B, C
S. oleraceus L. (Smooth sow–thistle)	–	–	–	–	–	–	–	–	–	–	2	10	4	6	56	–	–	1	–	A, D, R
S.asper (L.) Hill (Prickly sow–thistle)	–	–	–	–	–	–	–	–	–	–	2	1	1	8	–	1	–	1	–	A, D, R
Sonchus spp. (Sow–thistles)	–	–	–	–	–	–	–	–	–	–	–	6	3	–	15	1	–	–	–	A, D, R, M, B
Hieracium sp. (Hawkweeds)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	G, W, D
Bellis perennis L. (Daisy)	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	G
Anthemis cotula L. (Stinking chamomile)	–	–	–	–	–	–	–	–	–	–	4	43	38	77	98	37	2	7	2	A, D
Chrysanthemum segetum L. (Corn marigold)	–	–	–	–	–	–	–	–	–	–	–	6	8	2	29	–	–		–	A, D
Leucanthemum vulgare Lam. (Oxeye daisy)	–	–	–	–	–	–	–	–	–	–	4	–	1	1	2	–	–	3	–	G
Tripleurospermum inodorum (L.) Schultz–Bip. (Scentless mayweed)	–	–	–	–	–	–	–	–	–	–	–	–	5	1	2	4	–	1	–	D, A
Eupatorium cannabinum L. (Hemp agrimony)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	B, G, w
Juncus spp. (Rushes)	–	–	–	–	1*	1*	–	–	–	10*	5*	10*	5*	1*	30*	10*	5*		2*	M, H, Gw, Aq
Luzula spp. (Wood-rushes)	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	B, G, H, W
Eleocharis palustris (L.) Roemer & Schultes (Common spike-rush)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	M, B
Carex spp. – biconvex (Sedge)	–	–	–	–	–	–	–	–	–	–	–	3	5	2	6	1	–		–	B, M, W, Gw
Carex spp. – trigonous	–	–	–	–	–	–	–	–	–	–	16	8	11	3	7	6	–	2	3	B, M, W, Gw
Cyperaceae	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	B, M, W, Gw
Avena sp. – grain + floret (Oats) semi-charred	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	A

Sample no.	3	4	5	6	7	8	9	10	12	13	14	15	18	20	21	22	24	26	29	Habitat preference
Sample size – litres	7.25	5.25	6.75	6.25	5.25	8.25	8.25	6.25	5.75	5.25	4.25	1	1	0.75	1.05	1	0.95	1	4.25	
Avena sp. – grain semi-charred	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	A
Avena spp. – grain	–	–	–	–	–	–	–	–	–	–	1	–	1	1	–	–	–	–	–	A
Avena spp.– floret base	–	–	–	–	–	–	–	–	–	–	–	1	1	1	–	1	–	–	–	A
Avena /Poaceae – floret base	–	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	–	–	–	A
Secale cereale L. – rachis (Rye)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	A
Triticum aestivum L. (Bread wheat) – rachis semi–charred	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	A
Triticum aestivum L. (Bread wheat) – rachis	–	–	–	–	–	–	–	–	–	–	–	2	1	17	–	1		2		A
Triticum sp. – rachis (Wheat)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	A
Secale cereale L. – rachis (Rye)	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1	–	A
Cerealia indet. – grain	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	A
Large Poaceae/*Avena*	–	–	–	–	–	–	–	–	–	–	–	–	–	1		–	–	–	–	G, A
Large Poaceae/Cereal	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	G, A
Large Poaceae (grasses)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	G, H, M, W, R
Poaceae	–	–	–	–	–	–	–	–	–	–	6	19	23*	67*	14*	5	1	30*	–	G, H, M, W, R
Poaceae <1.5mm semi-charred	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	G, H, M, W, R
Poaceae with floret	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1		G, H, M, W, R
Poaceae – stem node	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	G, H, M, W, R
Conifer – needles	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	1	–	–	–	W
Leaf buds	–	–	–	–	–	–	–	–	–	–	–	2	1	1	–	3	–	2	–	W
Leaf buds	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	W
Bud scales	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	W
Leaf frags	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	2	–	–	–	W
Thorns	–	–	–	–	–	–	–	–	–	–	–	–	–	1	14	1	–	–	–	W
Flowerhead	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	1	–	–	
Calyx	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	
Pteridium aquilinum (L.) Kuhn (Bracken) – leaf frags	–	–	–	–	–	–	–	–	–	–	–	–	18	–	–	1	–	–	–	W, H, M
Moss frags	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	2	–	–	
Cenococcum geophilum Fr. Fungal sclerotia	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	
Indets.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	1	1	3	–	
OTHER REMAINS																				
Small mammal bone	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Small mammal bone – rodent	1	–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Amphibian bone	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	
Fish bone	–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	

Habitat preferences; A = arable, cultivated; Aq = aquatic; B = bank side, pond margins; C = coastal; D = disturbed ground, wasteland; H = heaths; M = marshes, fens, bogs; N = nitrogen

R = road sides; W = woods, hedgerows, scrub; w = wet. * includes 250 micron material.

Nineteen bulk samples were received for plant macrofossil analysis. Hydrogen peroxide was added to the samples to aid disaggregation of the sediment. The samples were processed using a simple wash-over technique. The flots were collected in a stack of sieves and then the residues were washed through the same set of sieves. The finest mesh used was 250 microns. Samples which basically comprised only charred material were dried, whilst those that contained waterlogged plant remains were kept wet. The samples were sorted and identified using a Wild M5 stereo microscope. The samples were sorted down to 500 microns. The 250 micron fractions were only scanned rapidly. Identification was by comparison with modern type material and by reference to standard identification works (e.g. Jacomet 1987; Schoch *et al.* 1988). The results are presented in Table 6. Nomenclature follows Stace (1991).

RESULTS

Pollen

Pollen was scarce in the lowest two samples (80cm, 96cm) and the sample from 32cm in monolith 1 and the sample (20cm) from monolith 2. Comparatively large amounts of Lactuceae (dandelion type) pollen, a pollen type relatively resistant to decay, occurred in these samples which suggested that differential pollen preservation had possibly occurred. Abundant *Pteridium* (bracken) spores also indicated this. The interpretation of the pollen from these levels is therefore limited. However, the range of taxa represented is similar to that found in other levels from monolith 1 in which pollen was more plentiful.

Alnus (alder) pollen was the dominant tree pollen in all the samples, although it occurred only in small amounts in the lower levels from monolith 1 and in the level from monolith 2. *Betula* (birch) was quite well represented in one level (48cm), but otherwise was also present only in small amounts, along with *Quercus* (oak), *Ulmus* (elm), *Pinus* (pine) and *Fraxinus* (ash). *Corylus* (hazel) was the most abundant of the shrubs recorded. The herbaceous taxa included Poaceae (grass) pollen, cereal type pollen, *Linum bienne* type (flax) pollen and a range of weed taxa often associated with agricultural activity or disturbed ground, such as paths. These included *Centaurea cyanus* (cornflower), *C. nigra* (common knapweed), Chenopodiaceae (goosefoots), *Plantago lanceolata* (ribwort plantain), *Rumex* spp. (docks,) *Artemisia* (mugwort) and *Anthemis* type (chamomiles, yarrows). *Pteridium* (bracken) spores were frequent in all the samples and were possibly indicative of abandoned ground. Aquatic taxa were rare.

Plant macrofossils

Both charred and waterlogged remains were recovered from the samples. Charred plant remains dominated the samples (4–10) from the clay deposits between, or below, walls 30 and 31, apart from sample 4 which contained few remains, but slightly more waterlogged. The predominance of charred remains in these deposits suggests that they must have been dry at the time the plant remains were incorporated because they were at a similar depth to deposits which also produced waterlogged material. The charred evidence therefore provides some possible support for the suggestion that some of the clay layers might have been floors in the building indicated by walls 30–32. A few rodent, amphibian and fish bones were also recorded in these samples. The rodent were vole type and may be intrusive.

Cereal grains dominated the assemblages from contexts 4–10 but most of them contained relatively low levels of material, apart from the assemblage from context 7 which comprised substantially more. Bread wheat (*Triticum aestivum*) and oat (*Avena* sp.) occurred in approximately equal amounts in all the samples, apart from sample 8 in which oat was more frequent and sample 7 which was mainly wheat. Chaff was scarce, but slightly more frequent in sample 7. The presence of rachis material confirmed the wheat was bread wheat, whilst floret bases of bristle oat /common oat (*Avena strigosa/A. sativa)* type

indicated the oat was cultivated rather than wild. Hulled barley (*Hordeum* sp.) was represented, and the inclusion of twisted as well as straight grains indicated six-row barley, although the presence of two-row barley cannot be ruled out. The samples contained only a few weed seeds and other remains, such as hazelnut fragments. The low incidence of weed seeds and chaff and predominance of grain suggests that the grain may have been from fully processed grain which became mixed with a little crop processing waste either prior to or when burnt. However, grain is more likely to survive charring than chaff (Boardman and Jones 1990) and therefore the chaff may be under-represented. It is possible that sample 7 was primarily a wheat crop and the oat and barley were contaminants. Alternatively, all the samples could represent the remains from both wheat and oat crops. None of the samples was from a feature such as a hearth and the charred remains probably represent general background waste derived from one or more events, perhaps associated with the metalworking activity indicated in the excavated layers. The layers that produced metalworking debris contained only moderate or low amounts of charred material. This is not inconsistent with the evidence that suggests that either the excavation had just caught the edge of the metalworking site or that the metal was being reused. Interestingly, the sample (7) containing the greatest amount of charred material did not produce evidence of metalworking, which could perhaps indicate a change of activity in this part of the site for a brief period.

In contrast to the samples from between walls 30 and 31, the samples (18, 20, 21) from deposits between walls 31 and 32 were dominated by large quantities of waterlogged remains, indicating deposition in wet or at least very damp conditions. They also contained a much greater range of taxa. The small quantity of charred material in sample 21 could represent reworking of 'floor' deposits or a contemporary deposit of charred material. The preservation of waterlogged plant remains in these deposits might indicate that the construction of wall 31 was a response to changing local environmental conditions and/or the construction of the slipway. Weed seeds were most frequent in the waterlogged assemblages and included species such as common nettle (*Urtica dioica*), oraches (*Atriplex* spp.), corncockle (*Agrostemma githago*), water-pepper (*Persicaria hydropiper*), docks (*Rumex* spp.), nippleworts (*Lapsana communis*), perennial sow-thistle (*Sonchus arvensis*), smooth sow-thistle (*S. oleraceus*) and stinking chamomile (*Anthemis cotula*). Small amounts of waterlogged cereal, especially wheat rachis in sample 20, also occurred. Oat and rye were present as well. It seems likely that some of these remains may represent crop processing waste, although they could derive from nearby fields. Other remains included seeds and capsule fragments of flax, hazelnuts and bracken. Charred remains were particularly scarce in samples 18 and 20. The charred assemblage from sample 21 was too small to draw any firm conclusions about its origin, but the low incidence of chaff and weed seeds might indicate that it was waste, primarily from a crop of oat that had been processed and then accidentally or deliberately burnt.

A series of samples (12, 13, 14, 15) from west of the building, i.e. abutting wall 30, contained either charred and little or no waterlogged remains (12, 13), or charred and substantial quantities of waterlogged material (14, 15). This suggests that the lower samples (14,15) were formed under wet conditions. The decrease in waterlogged remains up the profile points to increasingly dry conditions for the deposition of the later deposits (12,13) and/or drier post-depositional conditions. Wheat and oat dominated the charred assemblages but rye (*Secale cereale*) and barley were present in small amounts. Significant amounts of chaff, bread wheat rachis and oat pedicels, occurred in samples 14 and 15. The oat pedicels indicated both common oat and bristle oat. Straw nodes were also found in these samples. Broad bean (*Vicia faba*) and a possible seed of flax (*Linum usitatissimum*) were present. Weed seeds were quite frequent in samples 13 and 14, notably tares (*Vicia* spp.) and stinking chamomile (*Anthemis cotula*). It is probable that these samples represent a mixture of processed grain and crop processing waste, the latter probably the waste by-products from fine-sieving, or partially cleaned crops which were deliberately used as tinder and fuel.

Heather (*Calluna vulgaris*) and cross-leaved heath (*Erica tetralix*) leaves might also indicate fuel, perhaps the use of peat. Likewise hazelnut fragments in these and other samples could derive either from accidental collection along with wood for fuel, or waste from collection for food. The range of waterlogged taxa recorded was similar to that encountered in the previous samples, though seeds of henbane (*Hyoscyamus niger*) were particularly frequent in samples 14 and 15. Occasional waterlogged remains of oat and wheat, including semi-charred, were present and again, along with weeds of cultivation, might represent crop-processing waste. A charred bone of an amphibian was recorded in sample 12.

Samples from the slipway (22, 24) and wharf (26, 29) produced assemblages consisting almost entirely of waterlogged remains, reflecting a wet depositional environment, as might be expected. The assemblages were mainly weed seeds and similar to those already discussed, although alder (*Alnus glutinosa*) remains were more frequent in sample 22, fig (*Ficus carica*) was recorded in sample 26 and a plum (*Prunus domestica* ssp. *domestica*) stone was found separately in the slipway deposits.

The final sample (3) was from the redeposited gravel which overlay the other deposits and comprised only a small amount of charred material, which may be indicative of a drier depositional environment, i.e. above the water table, and/or the relationship to the water table post deposition. The remains were mainly bread wheat and oat but a possible flax seed was also found**.**

DISCUSSION OF THE ENVIRONMENT AND ECONOMY

The environment

The waterlogged plant macrofossil assemblages and the pollen record provide the strongest environmental evidence at Skenfrith. In order for plant remains to be preserved in the charred state the plant remains must have come into contact with fire and this can limit the range of material recovered. Hence at Skenfrith the charred assemblages are dominated by cereal remains and provide relatively little information about the environment compared with the waterlogged assemblages which contain a much greater range of weed taxa. This is further supplemented by the pollen record. Pollen tends to give a more regional picture than seeds because it is generally transported over a greater distance, although representation can be more complicated in an alluvial situation (cf. Caseldine and Barrow 1997). In addition at Skenfrith, because of the close proximity of human habitation, the pollen and waterlogged plant remains probably consist of a mixture of 'naturally' deposited material and material accidentally or deliberately deposited as a result of human activity. Many of the remains indicative of cultivation, therefore, could derive either from nearby agricultural activity or waste from crop processing, as discussed above.

The pollen and plant macrofossil evidence from Skenfrith suggests a largely open agricultural landscape, though the pollen record in particular does indicate the presence of woodland in the wider region, notably alder woodland. This is likely to have been growing in wetter areas near the river as could the willow. Other woodland taxa represented include oak, elm, ash, pine, birch, hazel, elder (Sambucus nigra), hawthorn (Crataegus spp.), apple (*Malus sylvestris*), privet (*Ligustrum vulgar*e), blackberry (*Rubus fruticosus*), blackthorn (*Prunus spinosa*), holly (*Ilex aquifolium*) and ivy (*Hedera helix*). Many of these could have been growing in local hedgerows as well as in areas of woodland or scrub.

Apart from the cereal evidence, discussed in more detail below, many of the seeds and pollen types are of weed species frequently associated with cereal cultivation, albeit many can also be indicators of rough or waste ground. Doubtless some of the remains may derive from disturbed ground in the area of the wharf, whilst others may reflect local cultivation or crop-processing waste. Species typical of cornfields include corncockle, cornflower, stinking chamomile, corn marigold (*Chrysanthemum segetum*), corn

spurrey (*Spergula arvensis*), parsley pierts (*Aphanes* spp.), fool's parsley (*Aethusa cynapium*) and poppies (*Rhoeas* spp.). Corncockle, stinking chamomile, parsley piert and nipplewort (*Lapsana communis*) are considered to be indicative of autumn-sown crops, while corn marigold, and corn spurrey are more often found associated with spring-sown crops but a number of weed species will grow in both spring and winter sown crops. The weed seeds also give some indication of the soils being cultivated. Stinking chamomile is characteristic of heavy base-rich soils and corn marigold is associated with sandy soils. Poppies and parsley piert also tend to occur on light soils. Many of the taxa are found where there is nitrogen enrichment, either as a result of manuring of the arable fields or where there is nutrient-enriched disturbed ground such as near dung heaps. These include members of the Chenopodiaceae family (orache, fat-hen) and other species such as common chickweed (*Stellaria media*), nettles (*Urtica* spp.) and black nightshade (*Solanum nigrum*). Similarly elder and henbane commonly occur on rough or waste ground where there is animal manure.

As well as arable and disturbed ground habitats, there is some evidence for grassland communities. Grasslands may be managed for pasture or for hay. Many species occur under both types of management but plants are much more likely to set seed in hay meadows than in grazed pasture. Species that are closely associated with hay meadows, apart from grasses themselves, that are represented at Skenfrith include ox-eye daisy (*Leucanthemum vulgare)* and knapweeds (*Centaurea* spp.), whilst other species such as creeping buttercup (*Ranunculus repens)*, ribwort plantain, fairy flax (*Linum catharticum*), hawkbits (*Leontodon* spp.) and selfheal (*Prunella vulgaris*) are commonly found in them. Documentary evidence from the region provides details of the cost of mowing meadows, 3s 6d for 10½ acres, and for hiring a shed to put the hay in, 20d, in the lordship of Abergavenny in 1256–57 (Roderick and Rees 1950), while the cost of making a stack of hay at White Castle was 16d (Roderick and Rees 1954).

Daisy (*Bellis perennis*) is typical of closely grazed pasture as are other low-growing species like greater plantain (*Plantago major*). These species and others, such as knotgrass (*Polygonum aviculare*) and docks, are also resistant to trampling and may have occurred on paths around the wharf area. Not surprisingly, given the riverside location, there is also evidence for wet or damp ground, namely water-peppers (*Persicaria hydropiper*, *P. laxiflora*), gypsywort (*Lycopus europaeus*), hemlock (*Conium maculatum*), water-crowfoots (*Ranunculus* Subgenus *Batrachium*), sedges (*Carex* spp.) and rushes (*Juncus* spp.), all taxa indicative of such habitats. Other possible vegetation habitats in the area are indicated by frequent *Pteridium* spores which could indicate colonisation of abandoned land by bracken, whilst heather and cross-leaved heath leaves suggest bog or moorland somewhere in the region, although the low incidence of these taxa in the pollen record suggests that these plant communities were not growing in the immediate area.

Crops and food plants

Although the pollen record suggests some cereal cultivation in the area, the plant macrofossil remains, especially the charred assemblages, provide the most detailed record of the types of cereal being grown. Cereal grains are less likely to survive in a waterlogged state as they are more likely to be destroyed before being preserved, i.e. any waste material lying around is likely to be consumed by small mammals or birds. There is, however, a small amount of waterlogged cereal evidence, mainly chaff.

The most important cereal crops appear to be bread wheat and oat, with rye and barley playing a minor role. Spelt wheat (*Triticum spelta*) is also present but could either be a contaminant or residual. In most of the smaller assemblages wheat and oat occur in similar quantities but wheat dominates the richer assemblages. These results are in general agreement with documentary evidence, though slightly later in date, 1256–57, from the lordships of Abergavenny, Grosmont and White Castle which suggest a well-developed agricultural organisation with wheat and oat as the main crops (Roderick and Rees 1950, 1954).

However, from the documentary evidence, rye appears to have been a relatively significant crop, at least by 1256. The results from Skenfrith are also interesting in relation to those from other medieval sites in Wales of a similar, or slightly later, date such as Laugharne Castle (Caseldine and Griffiths 2001), Dryslwyn Castle (Huntley and Daniells 2002), Loughor Castle (Carruthers 1993), Wiston (Caseldine 1995), New Radnor (Caseldine and Barrow 1998), Rhuddlan (Holden *et al.* 1994) and Cefn Graeanog (Hillman 1982), where oat tends to dominate although wheat is sometimes present in significant amounts. The importance of oat on these sites is in line with documentary evidence which suggests that oats was the commonest crop in Wales, where it was well suited to the uplands and acid soils (Davies 1991). It was used both as fodder for animals and food for human consumption. As at several other sites in Wales where the evidence, namely oat chaff, survives, both common oat and bristle oat appear to have been grown in the Skenfrith area. However, the possible greater importance of wheat at Skenfrith, and in the region generally, perhaps indicates greater similarities with agriculture in England than some parts of Wales. The documentary evidence for Herefordshire, though later in date, suggests that on the poor soils in the west of the county oats were largely grown, whilst elsewhere wheat was an important crop and grown in rotation with oats and peas (Jack 1988). Peas and beans tend to be less well represented in the charred plant record but there is some evidence for beans at Skenfrith and they are recorded in the documentary evidence for the area (Roderick and Rees 1950; 1954). The cereal grain at Skenfrith could have been used for bread, ale, pottage and livestock feed, whilst cereal straw could have been used for livestock feed, bedding or thatching. Peas, beans and vetches would also have provided food for humans and livestock.

Apart from the main cereal crops, there is also evidence for minor crops such as flax. This is recorded both in the plant macrofossil and pollen records. Seeds from flax could have been baked in bread or used for linseed oil, whilst fibres from the stems could have been used for linen or rope. In the past the date of harvesting determined the use of the fibre. Green stems gave a fine textile, yellow stems a stronger cloth and well-ripened stems were suitable for ropes and mats (Gale and Cutler 2000). Flax was frequently cultivated and processed by individual households (Baines 1985), hence it was often grown in gardens and orchards, rather than as a field crop (Greig 1988). In order to separate the bast fibres from the surrounding tissues it was necessary to rett the flax. This could be done by laying bundles of stems in thin layers on grass, dew-retting, or by water-retting which involved placing bundles in pools, special pits or flowing streams. It is possible that either method was employed at Skenfrith. One disadvantage of water retting was that the process was smelly and resulted in polluted streams (Gale and Cutler 2000). Evidence for flax growing is widespread from England but limited from Wales, although there is some further evidence for it in this part of Wales from early thirteenth-century deposits in Monmouth (Caseldine and Hannon 2001). Flax macrofossils have also been identified at Tŷ-mawr, Castle Caereinion (Caseldine and Griffiths 2001) and Chester (Greig 1988), while there is documentary evidence from Flintshire, Cheshire and Hereford (Jack 1988). A scutch-mill is known at Hereford in the early thirteenth century.

As well as evidence for cereals and pulses, there is some evidence for other possible foodstuffs including vegetables, herbs and fruit, though much of it is tentative. Seeds of *Brassica* could represent the cultivated brassicas, such as cabbages, or simply their weedy relatives. Equally a single seed of carrot (*Daucus carot*a) could represent either a wild or cultivated plant. Although scarce, there is also some evidence for herbs, notably dill (*Anethum graveolens*). Other herbs, such as basil (*Clinopodium vulgare*) and mint (*Mentha* spp.), could have been growing wild rather than cultivated. The presence of fruit remains in the deposits could indicate either cultivation or collection from the wild by the inhabitants of Skenfrith, or alternatively 'natural' deposition by agents such as birds or the wind. The strawberry (*Fragaria vesca*) seeds would have come from wild plants, although it is possible they may have been brought into cultivation (Greig 1988). Similarly, hawthorn, which is not cultivated now, was cultivated

during the medieval period (Harvey 1981). Stone fruit are represented by blackthorn and plum and apple is also recorded. The latter could have been wild or cultivated. Plum and apple would have been grown in orchards at this time. Apples could have been grown either for fruit or cider and the accounts for the lordship of Monmouth in 1256–57 refer to 60 gallons of cider being sold (Roderick and Rees 1957). Bramble, elder and hazelnuts might also have been collected for food. The presence of fig suggests that almost certainly some of the fruit remains represent foodstuffs. The fig was probably an import. Figs are generally common in sewage as are fruitstones and pips which survive because of their hard coat. Further confirmation that sewage was present in the deposits, and that therefore some of the remains could represent the remains of plants that had been consumed, is provided by the presence of whipworm (*Trichuris*) parasite eggs in the slipway deposits which indicate that sewage was entering the river.

Poisonous and medicinal plants

Several of the plants represented at Skenfrith are poisonous. Corncockle, a common arable weed, is toxic and it is quite likely that not all the seeds would have been removed during processing. Cooking may not have destroyed the poisons; hence it is possible that illness could have been caused by consumption of bread containing the seeds. Other plants such as hemlock and henbane, as well as being poisonous, have medicinal properties. Black horehound (*Ballota nigra*) and vervain (*Verbena officinalis*) also have medicinal properties. The physicians of Myddfai, a small village in mid-Wales, began writing down their prescriptions in the early thirteenth century and they apparently used vervain as a general 'cure-all' (Henderson 1994). The occurrence of vervain in Wales today is limited. Interestingly, vervain is still found at Skenfrith Castle and it has been argued that its presence there may be as a relict from former cultivation rather than as the result of the limited availability of an appropriate habitat (Conolly 1994). The presence of vervain in the macrofossil record, along with other plants with medicinal properties, adds some support for this view.

Many of the other plants recorded at Skenfrith might have been used for medicinal purposes. Digestive problems might have been treated with wild carrot or herbs such as dill, the mints and mugwort, whilst ointments made to treat wounds might have included nettle, plantains or scarlet pimpernel (Henderson 1994).

Other plant materials

Other plant remains in the records also indicate resources that would have been available to the people at Skenfrith. Bracken remains could reflect its use for bedding and litter. Sedges and rushes might have been used for flooring or roofing. Heather and cross-leaved heath could derive from peat used as fuel or heather plants used for thatching, bedding or even brooms. Grass could have been used for hay or turves used for roofing and fuel.

Conclusions

In conclusion the plant remains from Skenfrith have provided evidence for the nature of the surrounding environment and landscape, the crops that were being grown and the other plant resources that may have been collected and used, adding significantly to the archaeobotanical record for early medieval Wales.

DISCUSSION

The excavations at Skenfrith provided an opportunity to investigate the castle in the context of its surroundings, and recover evidence for activities that occurred around the perimeter walls. The discovery

of a stone wharf and putative wooden slipway, unique in the Welsh context, provides evidence to suggest that the river was utilised for the transport of goods and materials to the castle, despite the shallow depth of the river at this point, and the distance from the sea. The discovery of an area enclosed by substantial stone walls containing evidence for metalworking demonstrates the occurrence of specialist activities, while the environmental evidence sheds light on the plants used and perhaps eaten by the inhabitants of the castle and its surrounding buildings. Despite the fairly limited nature of the excavation, the findings it has produced have enabled significant steps forward in our understanding of the castle, its history and the lives of the people who inhabited it.

The earliest evidence came from the subsoil associated with Phase 1 building levels. This comprised Roman pottery and tile, and included material from several different periods. The unabraded state of the material indicates that it did not derive from field marling, suggesting perhaps that there was a settlement close by. A Roman fort and settlement was located at Abergavenny, dating from the earliest phases of Roman occupation, around AD 50, and continuing until the mid-fourth century AD (Blockley *et al*. 1993). The presence of further settlement sites in the landscape around Abergavenny cannot be discounted. At Abergavenny, pottery comparable to the coarse wares found at Skenfrith was recovered, pottery that is typical in the south Wales context (Webster 1993). The pottery and tile recovered at Skenfrith is clearly residual, and may have been incorporated into the medieval layers through the importation of soils or gravels.

The earliest evidence for the occupation of the castle revealed in these excavations dates to the twelfth century, during the reign of Henry III, when the castle was in the hands of Hubert de Burgh, earl of Kent and regent to the young monarch. The well-preserved stone wharf, substantial stone structure (defined by walls 30 and 32) and putative wooden slipway discovered during the riverside excavations, perhaps the most surprising and significant finds, appear to date to this period. Stratigraphically, these structures underlie a thick deposit of gravel, thought to be associated with the raising of the ground level following severe flooding in 1219 (Remfry 2000), and can therefore be associated with the initial phases of redesign and refortification at the castle. Indeed, the most likely date for the construction of the wharf and associated structures is between 1186 and 1193 when Henry Longchamp and William Braose spent £65 9s and 4d on work to fortify and improve the castle (Remfry 2000, 8). Perhaps the wharf was constructed to allow building materials to be delivered, while the structure defined by walls 30 and 32 provided safe storage space and a workshop area. Within this enclosed space, a series of compacted clay floors were revealed. Given the width of the structure (15m) it is unlikely that it represents a roofed building; it is more likely to have been a compound, perhaps containing buildings.

During the medieval period the river probably lay further to the east than at present, to the east of the collapsed walls presently within the river channel, and swept round to run next to the wharf. This would have created a sheltered area where boats could have pulled in to unload and load materials from the compound, and where boats could have been launched from the slipway between the wharf and the compound. These riverside features are unique in a castle context, providing the first evidence for the large-scale use of river transport by the builders and occupants of such buildings. However, similar structures dating to approximately the same period are known elsewhere in Britain and in Southern Ireland. Excavations in Drogheda, Ireland have produced evidence for a stone quay wall and timber revetment dated to around AD 1200, which are presumed to form the quay along the riverside precinct of the church. Vertically-set timbers were also located that appear to represent an earlier wharf and jetty with a related slipway (Conway 2000). During the 1990s a stone slipway and associated buildings were uncovered on the banks of the river Avon at Dundas Wharf, Redcliffe in Bristol (Jones 1986). These structures dated to the thirteenth century, and developed during a period of land reclamation through the construction of successive wharves.

The shallowness of the river Monnow at this point would have necessitated the use of flat-bottomed boats and barges to transport materials to and from Skenfrith Castle. It has been postulated by Crumlin-Pedersen (1978) that four types of indigenous planked boats were in use in north-western Europe from the beginning of the medieval period: Nordic or Viking longships, cogs, hulks and punts or barges. It is largely believed that there was widespread use of punt or barge type on rivers and estuaries, and it may be possible to envisage this type of boat tying up at the quay at Skenfrith.

The sealing of all the Phase 1 features by river gravels allows a clear distinction to be made between the twelfth- and thirteenth-century evidence. There is no indication to suggest that the wharf or associated buildings were replaced following the flood event, suggesting that the builders of the later phases of the castle found another means of transporting materials to the site. However, the identification of wall 31, close to the earlier wall 32, perhaps demonstrates the continued use of the compound area.

Documentary evidence reveals that the moat around the castle was dug between 1254 and 1267 (Remfry 2000). Excavations to reveal its line and structure seem to provide tentative confirmation of this: pottery found in the infill dates to the thirteenth and fourteenth centuries, indicating that it started to silt up shortly after its construction. The silting up of the moat may have formed part of the general decline of the castle, which fell out of use by the mid sixteenth century.

The 1536 record of Skenfrith as a ruin does not, however, mark the end of the occupation of the castle. Indeed, it would appear that the structure, or at least its surroundings, continued in use into the seventeenth century. Evidence for the post-medieval use of the castle came predominantly from the midden dump, context 50, which was found eroding out of the river bank to the east of the castle, and from trenches 3 and 4. The material recovered from the midden included metalwork, stonework, decorated glass and a leather shoe, and appears to represent an episode or period of deposition dating to the seventeenth century. It is unclear whether the material is contemporary, related to a single depositional event, or whether it accumulated over a prolonged period. Nevertheless, much of the material appears to have resulted from a destruction event, with masonry and glass perhaps originating in the castle removed and subsequently dumped outside its walls. Perhaps this represents an attempt to reinforce the river defences to prevent erosion, using masonry to build up the bank. Further evidence for possible river defences, or the landscaping of the river bank, came from trenches 3 and 4. Here, dumps of stone were identified on the east-facing slopes of the river bank, overlain by relatively deep deposits of soil, perhaps representing earthen banks. A single sherd of seventeenth-century pottery appears to provide a tentative date for the deposition of the rubble material. It is possible that a programme of work designed to reinforce the river banks was undertaken in the seventeenth century, and that raised banks, akin to levées, were constructed along the line of the river Monnow to prevent flooding. Landscaping works seem to have been undertaken in the vicinity of the North Tower at an undetermined date, as evidenced by the destruction of the stone moat revetment in trench 1, which may date to the same period.

Environmental samples taken during the excavation have provided detailed information about the nature of the landscape surrounding the castle during the thirteenth century, and the plants used by people living and working at Skenfrith. The castle was evidently surrounded by an open, agricultural landscape, with occasional pockets of woodland, perhaps along the river. The occurrences of specific weed taxa indicate a fairly mixed economy, with weeds indicative of cornfields, hay meadows and grazed pasture all identified.

The plant macrofossil evidence points to the cultivation of wheat and, to a lesser extent, oats at Skenfrith. This is corroborated by documentary evidence which outlines the scheme of agriculture at the castle in the thirteenth century (Roderick and Rees 1950; 1954). Peas and beans are also represented in the plant macrofossil remains, together with flax, vegetables, herbs and fruit. Tentative evidence of the

use of medicinal plants was also found, with the identification of vervain, a herb used in the Middle Ages as a 'cure-all' (Henderson 1994).

The pollen and plant macrofossil evidence has provided significant information about the nature of the landscape surrounding the castle, as well as the cereals and other plants exploited by its inhabitants. The evidence provides us with a tentative glimpse at the lives of the people of Skenfrith, the agricultural activities they would have been involved in, the foodstuffs they would have eaten and then medicines they may have taken. This evidence, together with the findings from the excavations has provided significant detail about the life of the castle in the twelfth and thirteenth centuries, and added dramatically to the story of the extended life of Skenfrith castle.

Acknowledgements

The excavations were undertaken by Cambrian Archaeological Projects Ltd on behalf of Cadw and the National Trust. Funding was provided by Cadw. Kevin Trott directed the on site trial trenching and archaeological excavation under the overall guidance of Kevin Blockley. Phil Evans prepared a preliminary report of the results and Dr Amelia Pannett has undertaken the task of finalising the report for publication. Thanks go to Dr Sian Rees of Cadw and Dr Emma Plunkett-Dillon of the National Trust for their invaluable help during the excavation and for commenting on a draft of this report. Stephen Clarke would like to acknowledge his gratitude to Alan Vince for his study on the medieval pottery from Hereford, and also to Dr Paul Courtney, Jeremy Knight, John Lewis and Ron Shoesmith. Astrid E. Caseldine and Catherine J. Griffiths would like to thank Dr Ros Coard for looking at the bones found with the samples taken for the study of plant remains.

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NOTES

1. The excavations and initial publication report by Phil Evans and Kevin Trott. The final publication report was prepared by Amelia Pannett.
2. The National Archives: Public Record Office, MPC 36.

Published with the help of grant aid from Cadw