Herefordshire Council

An excavation at Eardisley Castle, Herefordshire, 2011

Final report
for the
Eardisley History Group

May 2012

Herefordshire Archaeology Report 305

An excavation at Eardisley Castle, Herefordshire, 2011: final report

Prepared by: Nigel Baker BA PhD FSA MIFA
With contributions by Michael J Allen, Catherine Longford, Gerry McDonnell, Adrienne Powell and Stephanie Rátkai

CONTENTS

SUMMARY

In March 2011 a trench was excavated in the south-east corner of the surviving inner bailey of Eardisley Castle in order to establish its general character in its heyday and to act as a control on the results of recent geophysical surveys. The excavation found that medieval strata and structures survive immediately beneath the garden soil. The trench revealed part of a building of uncertain form in use over a very short period of time, c.1200. Its east wall bounded a sequence of floor surfaces consisting of alternating layers of clay and spreads of charcoal-rich soil. A deeply-founded clay-bonded masonry structure was inserted into this developing floor sequence; it may have been part of a substantial hearth base or chimney most of which lay outside the excavation. The floor deposits contained a large quantity of late 12th to early 13th-century cooking pot and a depression had been levelled up with imported iron slag. Analysis of the deposits revealed the presence of quantities of fish scales and animal bone, amongst which was a wide variety of game species and a butchered bone belonging to a white stork, a non-native species. The building is interpreted as part of the castle's service area, probably adjacent to the kitchens and a forge. A sondage showed that the building of c.1200 was built on the reverse slope of the bailey rampart, composed of turf and redeposited topsoil and containing two sherds of 12th-century cooking pot. There was no evidence for the domus defensabilis *of the Domesday survey.*

1. Introduction

This is the final report on an excavation at Eardisley Castle, Herefordshire (NGR SO 312491) undertaken in March 2011 by the Eardisley History Group and Herefordshire Archaeology with financial support from the Heritage Lottery Fund. The excavation was previously reported in 2011 in interim form, before the compilation of the botanical and faunal reports (Baker 2011: Herefordshire Archaeology Report 293). The excavation (site code EC 11) appears in the county Historic Environment Record as event EHE 1855; Eardisley Castle is a Scheduled Ancient Monument (HE 86).

2. The historical background

Eardisley Castle does not appear to be well enough documented to establish either the date of its foundation or (through account rolls, for example) its general architectural character through the medieval centuries. The earliest certain mention of Eardisley Castle in the historical record appears to be in the Pipe Rolls for 1182-5 (DoE Scheduling documentation SAM 86) and soon after, in a list of Herefordshire castles of 1209 (Robinson 1869, 52). It is however not unlikely that the site of the castle is also the site of the fortified house (*domus defensabilis*) listed by the Domesday Survey (f 184v) as part of the manor of Eardisley, held by one Robert from Roger de Lacy, almost certainly Robert de Baskerville (Copleston-Crow 1979, 19; with thanks to Roger Stirling-Brown). It is not absolutely certain from Domesday that the fortified house was part of the pre-Conquest manor, though this is the most probable implication. The close physical association of St Mary's Church and the castle on a slightly elevated east-west ridge strengthens the probability that the castle was developed from an earlier manorial complex that included the church.

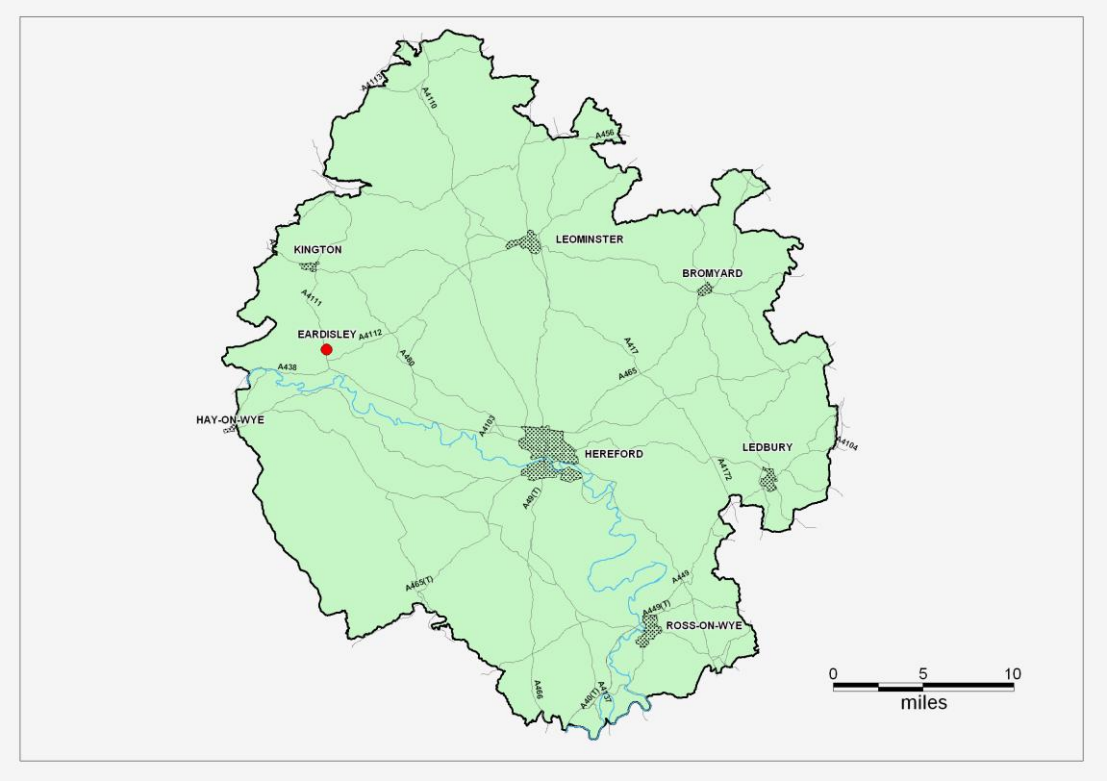

Fig.1 Location plan

Eardisley Castle featured in the Welsh rebellion under Llywelyn in 1262, first when, with Wigmore, it was plundered, and then the next year was used as a place of imprisonment for the Bishop of Hereford and Macy de Bezile, the Sheriff of Gloucester. At some point in the 13th century the castle passed into the hands of the Baskerville family: the manor was granted to Walter de Baskerville in 1251, though there is evidence of their connection with Eardisley going back to c.1194. In 1372 Richard de Baskerville was licenced by the Bishop of Hereford to hold divine service in an oratory in the castle (Watkins 1897; with thanks to Malcolm Mason). The family was still in possession of the castle in the 17th century and the last of the Baskervilles lived in poverty in the gatehouse until his death in 1684 (Robinson 1869, 54; Hyett Warner 1904, 262). The present farmhouse was built on the site c.1705 (pers comm. Malcolm Mason).

3. Eardisley Castle: an introductory description

Eardisley Castle is a motte-and-bailey earthwork castle lying on a slight east-west ridge on the south-west side of the modern and medieval settlement of Eardisley, which follows the main north-south Hereford to Kington road (Church Street). Parts of the bailey ditches having been infilled in the 20th century, the best representation of the site is the first edition Ordnance Survey map of 1887. This shows the bailey occupying an approximately square area of just over an acre with the motte occupying a projecting salient in the south-west corner. Geophysical survey in 2010 (see below) has shown that the motte was formerly separated from the bailey by a ditch.

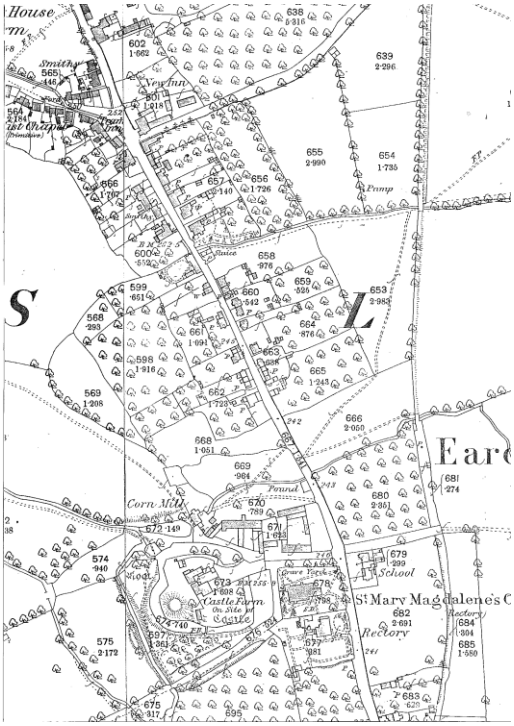

Fig. 2 Eardisley Castle and village as surveyed in 1885 (Ordnance Survey first edition 1:2500)

Apart from the motte, there are now no standing earthworks within the inner bailey ditch, the ground surface being flat: clearly, an inner bailey rampart has been removed at some point in the past. There is no sign of a surviving rampart on the Ordnance Survey 1:2500 map of 1887, nor on the tithe map of the 1840s – though this is less certainly definitive on this point. A sketch survives of the castle from the south-east, made in c.1840 by Elizabeth Mary Guise, showing a ruined masonry perimeter wall, most probably the remains of the medieval curtain wall (fig.18, with thanks to Malcolm Mason). This had clearly gone by 1887 and it is most probable that the surviving ramparts were levelled at the same time. There are now no traces of masonry visible around the perimeter, though several courses of a possible revetment wall were noted to the north of the motte in the 1970s or 80s (Stirling-Brown 2011).

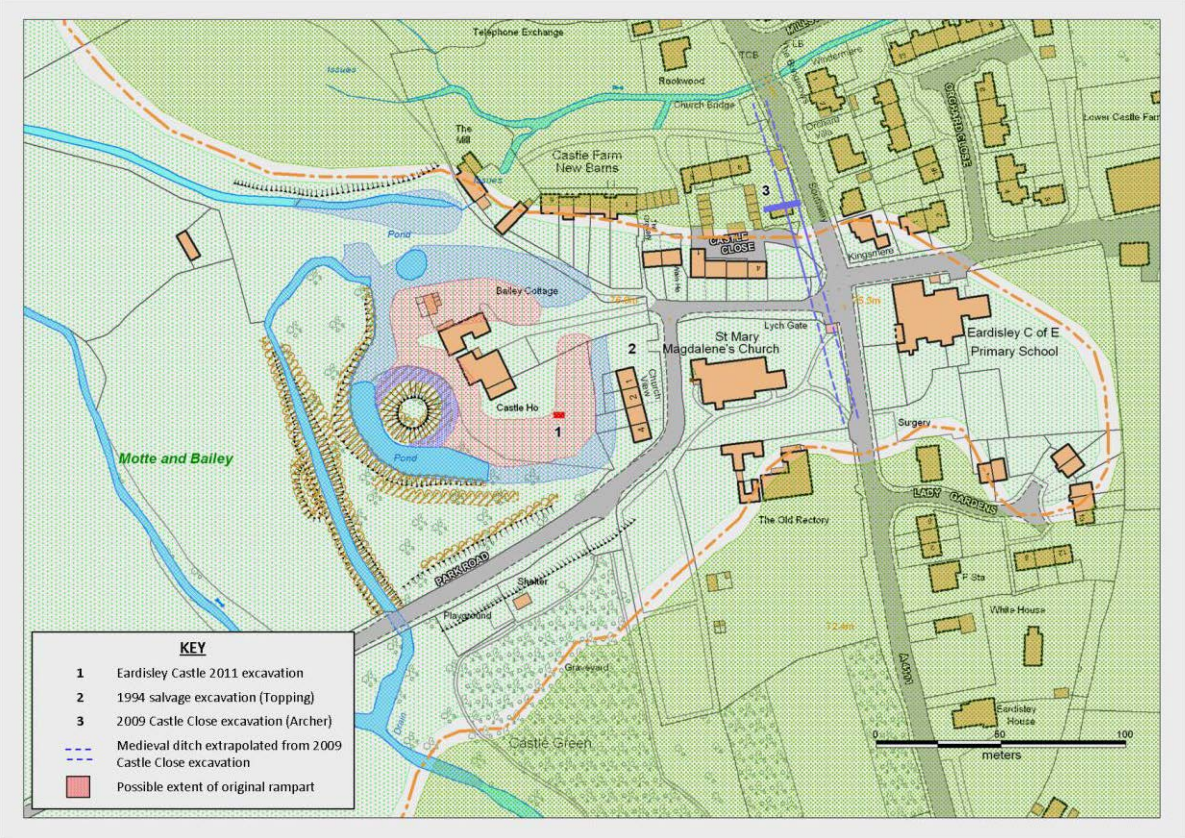

Fig.3. Eardisley Castle and its immediate setting: the east-west ridge, the castle and the church


Fig. 4 The motte, looking north-west along the bailey ditch

Two further ditches run north-west to south-east to the west of the motte and bailey; they are both at their deepest as they cut across the summit of the ridge, and both carry watercourses flowing from north to south. Neither is completely certainly part of the castle – they could be features relating to water-milling, a mill having stood immediately north of the inner bailey – though the likelihood is that either or both ditches represent re-used and deepened features of medieval origin. There is a substantial rampart or bank between the bailey ditch outside the motte and the eastern watercourse ditch, the bank at its highest where the ditch is deepest. The ground thus enclosed between the two ditches broadens to the north as the bailey ditch curves eastwards. At this point there is a rectilinear platform, fairly clearly a platform for a building, though whether of medieval or later date cannot be determined without excavation. At its north end, the eastern watercourse ditch now returns to the east to link in to and drain water from the bailey ditch. To the south, the ground between the eastern watercourse and the bailey ditch widens to form a triangle bounded by Park Road on the south, though this too is likely to follow the line of a former ditch (see below).

The western watercourse ditch is now fed by a ditch approaching from the north-west, but a LiDAR survey suggests that it, and a slight bank within it, formerly curved north-east (approximately on the line of a later field boundary) to link-in to the watercourse feeding the former mill north of the castle (pers. comm. Malcolm Mason). The long pasture between the two watercourses has been characterised as a possible outer bailey (e.g. Shoesmith 1996, 92-3) though this attribution assumes that both features had a medieval defensive origin. There are no earthworks or other surface features to indicate that the pasture was occupied in the Middle Ages, though it seems highly unlikely that there were no outer defences west of the inner bailey when there are indications of two ditches to the east (see below).

Park Road, the lane running along the south side of the bailey, may also follow the line of a former ditch, cut into the natural gradient down to the south. A watching-brief on ground immediately east of the inner bailey noted the presence of a large cut, seen only in section, on the west side of Park Road where it heads north between the church and the castle (Topping 1994). The nature of the cut could not be determined in the circumstances of the site investigation, but may have been the inner edge of a substantial ditch following the line of Park Road around the castle site.

More secure evidence was found in 2009 for a ditch following the west side of the main road, Church Street, separating both the church and the castle from the road. The ditch was 5-6 metres wide, broad and shallow, and had 13th-15th-century pottery in its primary fill: it could have been dug and kept clean from almost any date prior to that (Archer 2009; SMR event 49286).

The 2010 geophysical survey results for the motte are ambiguous. The resistivity survey reported an annular feature (catalogue no.28) on the top of the motte: possibly the base of a round tower, with walls potentially 3m thick enclosing an area 7.5m in diameter, but not, it seems, deeply founded. Although it has been pointed out (Stirling-Brown 2011) that a circular stone tower on the motte would have numerous local parallels, need not be deeply founded if built on an old, well-settled

mound, and could well have been placed off-centre, only excavation will resolve whether the geophysical anomalies do indeed represent the remains of a tower.

4. The 2011 excavation

The background and aims of the excavation

In July 2010 Herefordshire Archaeology was asked by the Eardisley History Group to design, secure the consents for and supervise an excavation at the castle. Following discussions with English Heritage, an excavation strategy was formulated that had two broad aims. First, apart from the parish church of St Mary and, in all probability, the plan-form of the present village, the castle is the most important and tangible link with Eardisley's origins and its medieval past. Yet, before 2011, no controlled excavation had taken place there and many of its most basic characteristics remained unknown – when it was founded; whether, for example, its earthwork defences were ever (or to what degree) supplemented in masonry; its general architectural character; the density to which its component areas were built up or occupied; and when and how it went into decline. The primary aim of the Eardisley History Group was therefore to establish these most basic characteristics.

The second broad aim related to the understanding of the castle as an archaeological site, and to its long-term management. The geophysical surveys commissioned by the Eardisley History Group prior to the excavation revealed dense

Fig.5 Castle House, the former inner bailey and the motte: contextual view from the church tower, looking west. The excavation is just visible bottom centre-left

archaeological remains right across the surveyed inner bailey and the motte. However, it was often far from clear what these remains actually represented. The primary technical-archaeological aim of the excavation was therefore to provide a control on the geophysical survey results by examining a small sample within the survey area, to compare the actual excavated sequence with the geophysics data and, by these means, to provide a better understanding of the character of the buried archaeology across the site as a whole.

It was felt that the best way of achieving these two broad aims was to excavate just within the perimeter of the inner bailey at a point where geophysical survey showed that substantial, probably masonry, remains lay below the surface, so that the character of the defences (and the presence or not of a masonry phase) could be established, together with that of any buildings that might have been built immediately within a curtain wall or rampart. Specifically, a site was selected towards the south-east corner of the bailey to investigate a strong, discrete signal produced by ground-penetrating radar (anomaly 34, Roseveare 2010), just within a blank strip on the edge of the GPR survey area that was taken – wrongly as it turned out – to represent featureless silts within the filled-in moat.

Methodology

Following the grant of Scheduled Monument Consent a 6-metre by 3-metre trench was excavated over a three-week period in March 2011. Excavation and backfilling was by hand throughout, and the excavation was undertaken within a polytunnel, in false expectation of bad weather. The excavation was supervised by the writer, together with David Williams BA MIFA, and staffed by volunteers from the Eardisley History Group. Topsoil, varying in depth between c.20cms and 30cms was removed rapidly and the underlying surfaces cleaned. Undisturbed natural subsoil was not definitively contacted anywhere within the area, though a sondage at the eastern end penetrated much of the depth of the perimeter rampart, though was halted for safety reasons at 1.65m below present ground level. Occupation on top of the rampart was sampled by excavation as far as time constraints allowed. Soil samples were taken from occupation surfaces and from the rampart material for botanical/environmental evidence, and further samples from occupation surfaces for metallurgical evidence, slag being present in some such contexts.

The excavation: results

Removal of the turf (context 001) and topsoil (002) revealed patches of pink clayey material, eventually resolved into the top of intact medieval strata cut by a number of topsoil-filled features. The artefactual content of the topsoil was suggestive of gardening activity to the present day, though the quantity of unabraded medieval cooking-pot sherds at the base of the topsoil suggested a sharp transition to 12th-13th-century deposits. Garden paths detected by geophysical survey within the cultivation soil were scarcely apparent on excavation, though were seen in fragmentary form as, for example, lenses of charcoal (003) and gravel (004). Additionally a single large stone protruded from the cultivation soil in the south section.

Fig. 6 The 2011 excavation. Probable cess pit 013 foreground; rubble around post-settings 036 and 037 centre, masonry footing 040 to rear. Looking west

Further cleaning distinguished a number of discrete cut features. Shallow gullies and flat-bottomed slot-like features (008, 014, 029, 038) filled with topsoil were interpreted as traces of cultivation trenches and cuts extending down from the base of the topsoil into the underlying medieval deposits. Towards the western end of the area, excavation of a roughly square cut feature with rounded corners (007), also filled with a topsoil-like deposit, revealed a number of substantial flat stones in a matrix of buff plastic clay. At first interpreted as a cut feature with a stone floor, further investigation suggested it to be the base of a robber trench salvaging masonry from a substantial clay-bonded stone footing (040, see below).

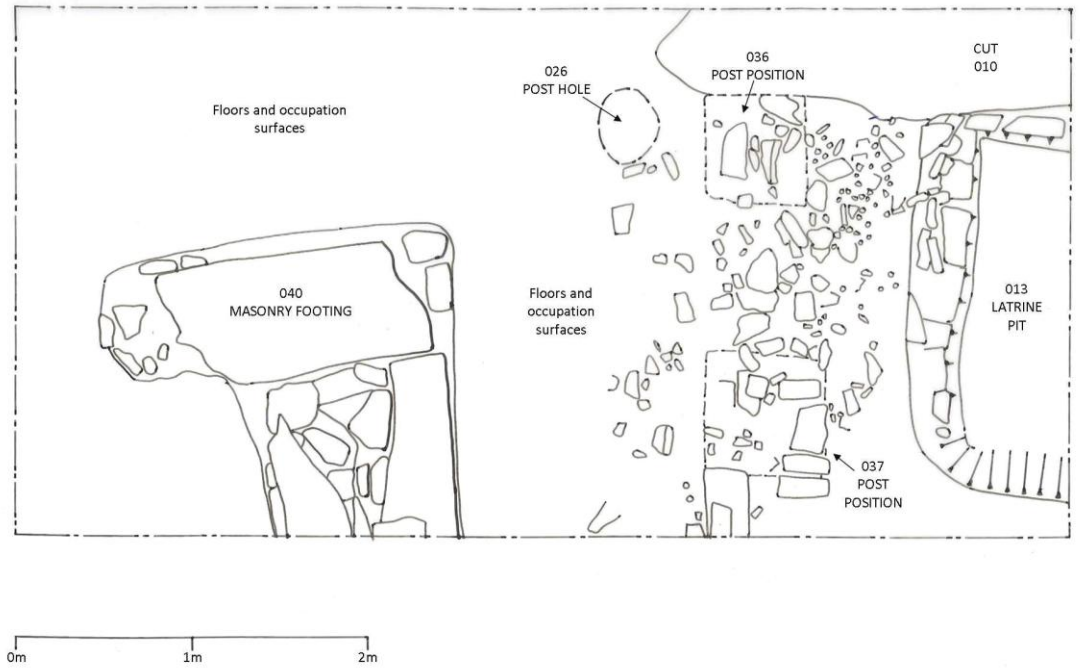

Fig.7 Excavation plan, penultimate stage, before definition of wall of wall 062. North to top

At the eastern end of the trench an area of stone rubble (012) bounded the west side of an area of dark soil (011). Removal of the latter showed that it, and the rubble, were fills within a partly stone-lined square or rectangular cut or pit (013) extending eastwards beyond the excavated area. The lining walls (030), carefully built of sandstone rubble in a clay matrix with packing stones behind, survived on two sides. The wall on the third (south) side had been removed; in its place was a tip of orange-brown clayey soil (031). The base of the pit was flat and compacted. On it lay traces of green silt, and this was interpreted as a surviving remnant of cess left in the bottom of a stone-lined latrine pit. However, only three sides of the feature were seen so its overall dimensions are unknown, and the presence of a latrine pit within the bailey might be thought superfluous given that latrines could easily discharge into the moat, just a few feet away. Pottery from the fill (context 010) was of early 13th-century date, though the pit itself could have been substantially later, cut from a level that has been lost to post-medieval truncation. The backfill of the pit (011, 012) also contained the remains of two cats (faunal remains, below).

Removal of the lining walls allowed the earlier stratigraphy penetrated by the pit to be seen in section; the pit cut was subsequently extended to form a deep sondage at the eastern end of the larger excavated area.

The medieval building

Apart from the eastern c. one-third of the area, the excavation was dominated by a sequence of what appeared to the excavators to be alternating floor and occupation deposits, the former generally of re-deposited red-brown or orange clays containing varying quantities of gravel, often laid c. 5cms thick (005, 009, 044. 033, 028, 056, 063, 065, 066, 067, 068). The ‘occupation deposits’ that developed, or were laid, on these surfaces were generally of dark grey or black clayey soil with large quantities

of charcoal (019, 045, 039, 046, 064, 069, 053). These deposits were much thinner than the floors on which they lay and many, after excavation, could not be detected in the sections. Both the floor surfaces and the charcoal-rich deposits exhibited a range of variation. Amongst the successive clay floors there was a single thin skim of mortar floor surface (043). Towards the bottom of the sampled sequence, exposed where a pit (050) in the north-west corner had cut down from a higher level, were a possible clay-bonded cobble surface (066) and a possible clay-bonded flagged surface (068) composed of sandstone slabs each up to c.30cms square. However, only a very limited exposure of these surfaces was possible, little of their character could be determined and their extent is unknown. Amongst the charcoal-rich horizons two (054 and 055) stand out by reason of their high iron-slag content. Both were very compact and 055 incorporated patches of concreted slag (see slag report, below); the lack of hammer scale from both deposits suggests that they derived from imported material used to level up an uneven floor rather than representing the product of iron-working *in situ*.

The succession of red/orange clay and black charcoal-rich layers continued below the level to which most of the site was excavated, the lowest such deposit (067, a compact orange clay surface) being exposed in a limited area in the north-west corner at a depth of 0.72m - 0.76m below ground level. There was no indication of the depth to which this sequence continued.

The successive floor and dark deposits were confined to the area west of a zone of sandstone rubble (with stones up to c.25cms) in a matrix of mottled buff-yellow clay with soil (018). Within this material two square patches were visible in outline (036 and 037) which were at first thought to be post-holes but, on excavation, appeared more likely to have been a pair of post positions where timbers had stood on a firm base while material had accumulated around them.

Fig.8 Rubble wall 062, looking south. A probable construction break is apparent level with the top of the 1m scale

The rubble zone was resolved into a clay-bonded rubble wall (062), running north-south, terminated on the north side of the excavation by a clay-filled cut (010) of unknown function. The wall 062 had a clearly defined eastern exterior face though its west, interior, side had been largely destroyed. Enough survived however to show that the wall had been 0.7m wide at its south end, reducing to 0.54m where truncated at its north end. A discontinuity in the east face suggested that the wall was built in two sections, each of which carried one of the square post positions, that on the south part of the wall (037) being 0.68m square, that to the north (036), 0.56 x 0.62m. The floor/occupation sequence described above overlapped the yellow plastic clay bonding material of the wall on its west side, suggesting that floors were continuing to be laid and occupation material was accumulating while the internal face of the wall was in a ruined or damaged state.

The masonry footing

Within the area of the successive floor surfaces, excavation of the probable robber-trench 007 cut down from the topsoil had revealed a substantial L-shaped masonry wall footing. This (040) was composed of massive blocks and slabs of sandstone rubble, the largest measuring 1.6m x 0.67m and at least 0.2m deep, set in a matrix of yellow plastic clay of the same kind seen in the construction of the rubble wall to the east.

Fig.9 Masonry footing 040, looking south

The depth of the footing was not established by the excavation, though the ground-penetrating radar results suggested that it was very deeply founded. This feature was built within the area of successive re-laid and occupied floors, while these were in use. A clear foundation cut (074, 075) was visible in the black charcoal-rich 'occupation' material (039) to the east, whereas the succeeding clay floor surface (033) to the west lapped up against and partly over the slabs. The masonry footing appeared to represent the end of a wall 1.06m wide running south out of the excavated area, with a terminal extending about 2m wide (fig.9, above). Within the limited area of excavation no definitive interpretation of this footing was possible, though the solidity of its construction left no doubt that it was intended to support a considerable load, probably a structure of some height, just possibly a tower, more likely a chimney stack. This is discussed further below.

The pottery (Rátkai, below) suggests that the building was in use over a very short period of time in the late 12th to early 13th century.

The rampart sequence

At the eastern end of the excavated area a sondage was dug to investigate the earlier deposits underlying the structures described above, without disturbing their densely-layered stratigraphy, by extending the emptied cut for the probable cess-pit 013. The sondage revealed what was interpreted as a turf rampart, its back overlain or cut by a series of deposits of uncertain function. The uppermost of these, 034 and 035, were both of red-brown clayey soil containing extensive rounded gravel and appeared to be re-deposited natural material. These were not excavated (having been cut away within the area of the sondage by later pit 013) and it was uncertain whether they occupied a sloping cut in the back of the earlier rampart material (015),

or were dumps onto the back of the rampart. Similar material (048) below these deposits was sampled in a very limited area but, again, was of uncertain function, though composed of redeposited broken-up natural sandstone.

Fig.10 East end sondage: section through turf rampart

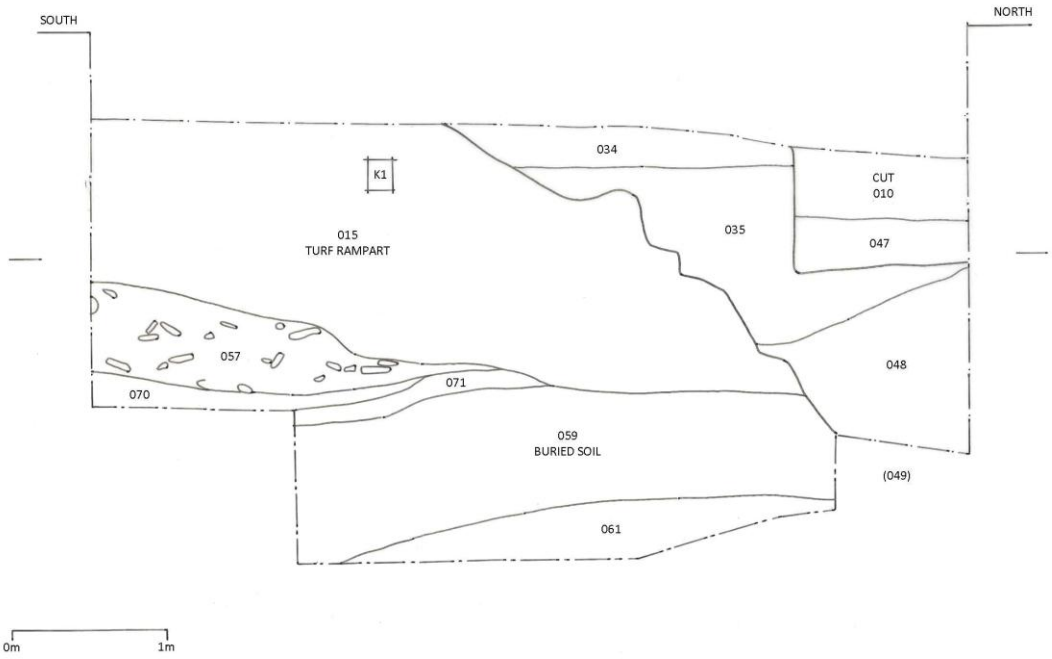

Fig. 11 Rampart section, east end sondage

The main bulk of the rampart was composed of mottles and stripes of khaki-coloured silt contrasting with orange, more plastic, silty clay with some charcoal flecking. This material (015), which survived to a depth of 0.8m, is interpreted as degraded turf

and/or topsoil mixed with re-deposited natural clay subsoil (see Geoarchaeology report, below). In the extreme south-east corner of the excavated area this deposit rose to within 0.25m of the present ground surface and was exposed immediately on removal of the topsoil (002), suggesting strongly that the rampart formerly stood to a greater height but had been planed-off to a common level and the site cultivated. Below the turf deposit 015 was a tip of much harder clay with sandstone rubble (057); below that was a series of smaller tips of clays and silts (072, 073, 070, 071) over a much thicker and more homogenous mass of grey-brown/khaki silt (059) interpreted as a re-deposited topsoil. This contained no artefacts other than a single flint scraper. Its interpretation is uncertain, but it too may have been part of the rampart, bringing the total surviving depth to about 1.4m. Below, explored in a very limited area at the base of the sondage, was a very stiff red-brown sterile clayey silt (061) containing pieces and flecks of green sandstone and very occasional small flecks of charcoal. Tested to a depth of only 20cms, this material appeared to be of re-deposited or weathered natural origin. Undisturbed natural deposits were not contacted within the 1.65m depth of the sondage.

Three cooking-pot sherds from the rampart turf material (015) are of 12th-century date: this is the only dating evidence from the rampart sequence but is consistent with the late 12th to 13th-century date of the building on top and (as far as it goes) with the documentary evidence for the appearance of the castle by the 1180s (see historical summary, above).

Fig. 12 The final stage of excavation: east end sondage in foreground; wall 062 centre with black horizon 039/046 behind, masonry footing 040 to rear

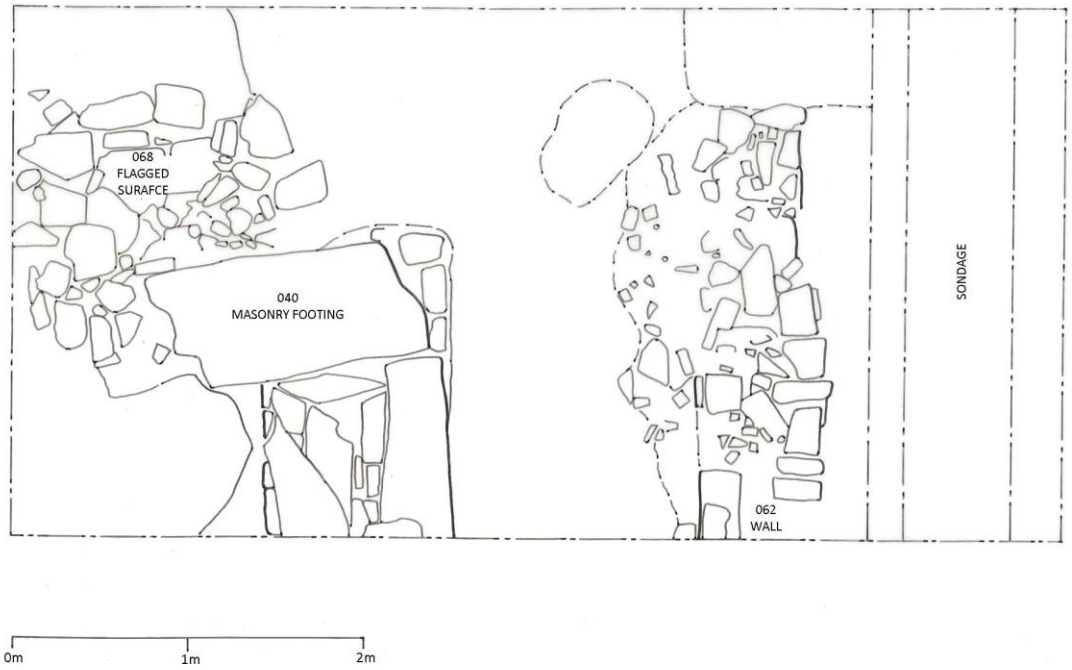

Fig.13 Excavation plan, final stage. North to top.

5. The pottery

By Stephanie Rátkai

Introduction

A comparatively modest assemblage was found during excavation, which was made up for the most part of cooking pot sherds. Most of the pottery was found to the west of wall 062 and to the east of masonry footing 040 within a series of clay layers and charcoal rich deposits. The following report has endeavoured to use the pottery information to help answer some of the aims of the excavation, set out in the interim report (Baker 2011, 4). Most pertinent to the pottery was to establish the date of the earliest occupation, and to date, characterise and interpret layers associated with the building and the masonry footing.

Methodology

All the pottery from beneath the topsoil and turf (contexts 002 and 001) was examined under x 20 magnification and fully recorded. Pottery from 001 and 002 was scanned for fabric types and vessel forms.

The pottery data are stored on an Excel spreadsheet. Pottery quantification is by sherd count and weight, rim count and percentage rim (*eves*). The fabric codes used in this report are taken from Vince (1985). Fabrics which could not be paralleled

there have been compared to those found at Wigmore Castle in north Herefordshire (Rátkai forthcoming a). Any fabric which has not been paralleled is described in the report.

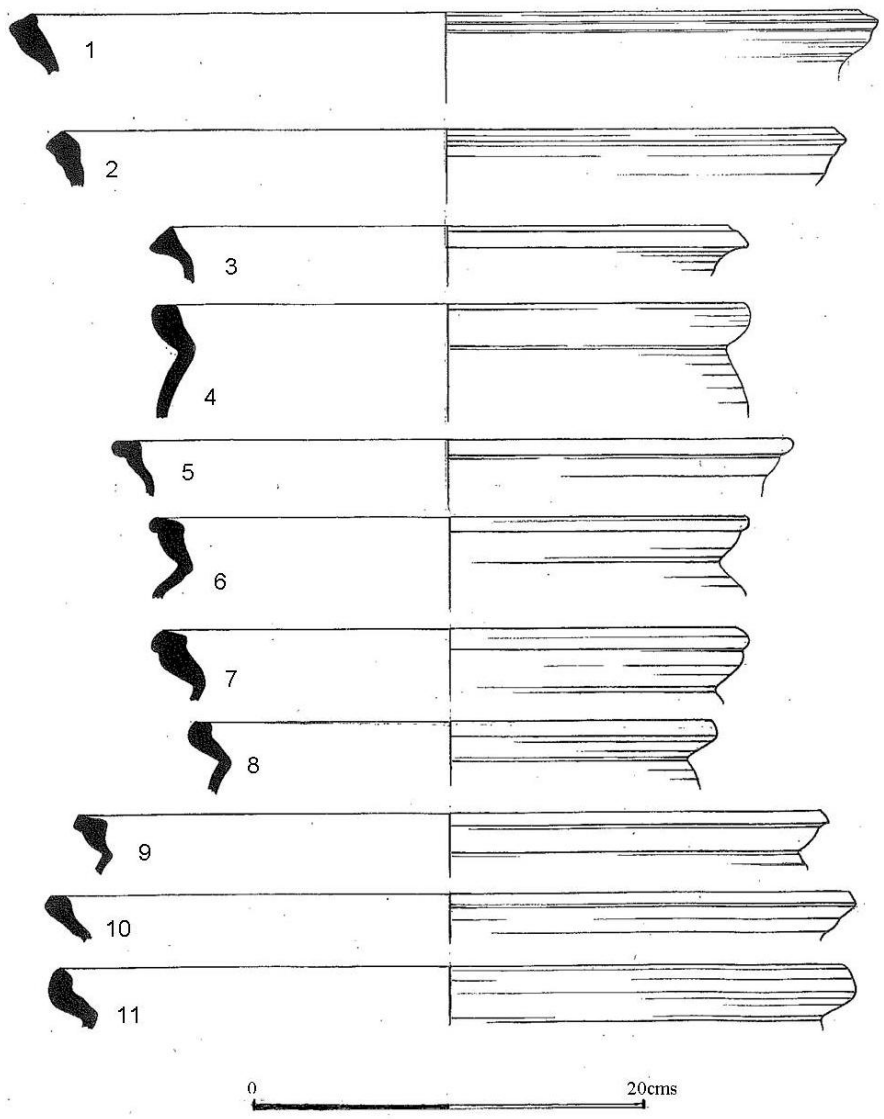

Fig 14 The pottery

1. 053, Fabric B1, cooking pot rim sherd; 2. 053, Fabric B1, cooking pot rim sherd;
3. 054, Fabric B1, cooking pot rim sherd; 4. 054, Fabric B1, cooking pot rim sherd;
5. 039, Fabric A2, cooking pot rim sherd; 6. 028, Fabric C1, cooking pot rim sherd;
7. 028, Fabric A2, cooking pot rim sherd; 8. 044, Fabric B1, cooking pot rim sherd;
9. 005, Fabric S20, cooking pot rim sherd; 10. 018, Fabric B1, cooking pot rim sherd;
11. 002, Fabric B1, cooking pot rim sherd

The pottery fabrics

A limited range of fabrics was identified. There were three main classes of fabric; B1 (Malvernian cooking pot), C1 (Worcester-type sandy cooking pot) and A2 (Herefordshire cooking pot) by relative frequency. The overall quantification of fabrics in the assemblage is shown in table 5.1

	sherd weight	sherd count	rim count	rim % (*eves*)
Fabric				
A2	690	41	11	72
A7b	21	3		
A8	48	4		
B1	2804	254	23	136
B1?	26	1	1	7
B2	7	1		
C1	1069	73	18	91
C2	10	1		
GL01	3	1		
S10	29	2		
S11	5	1		
S20	113	6	2	16
Post-med	2	1		
industrial ceramic	12	2		
Total	4839	391	55	322

	% sherd weight	% sherd count	% rim count	% (*eves*)
Fabric				
A2	14%	10%	20%	22%
A7b	<1%	1%		
A8	1%	1%		
B1	58%	65%	42%	42%
B1?	1%	<1%	2%	2%
B2	<1%	<1%		
C1	22%	19%	33%	28%
C2	<1%	<1%		
GL01	<1%	<1%		
S10	1%	1%		
S11	<1%	<1%		
S20	2%	2%	4%	5%
Post-med	<1%	<1%		
industrial ceramic	<1%	1%		
Total	100%	100%	100%	100%

Table 5.1 Quantification of pottery from the assemblage

Fabric B1 Malvernian cooking pot (fig.14, 1-5, 9, 11-12)
Vince (1985, Fig. 29, 1-6) illustrates the 'classic' Malvernian cooking pot forms but there is a wider repertory of forms which can be seen on microfiche (*ibid*. M7:C3, C9, D2 and D10). A wider range of forms was also present in the Eardisley material but cooking pot forms like Vince fig. 38; 1, dating to the 12th century and Vince fig. 38; 4, dating to the 13th century were also present. Fourteenth-century forms such as Vince fig. 38; 5-6, were not present.

The fabric of B1 varies quite considerably in terms of colour, inclusion size and inclusion density, a fact which is not necessarily clear from the fabric description given in Vince (*ibid*, 47). Excavations at Kings Fee, Hereford (Rátkai forthcoming c) have shown that the earlier (*i.e.* 12th-century) vessels tend to be black in colour, with 13th-century vessels varying between light grey, mid grey and brown. The full colour range was present in the Eardisley material. Differences in B1 must reflect not only chronology but also different production sites, different clay preparation and different firing.

Fabric C1 Worcester-type sandy cooking pot (fig.14. 7)
Fabric C1 is a catch-all term which encompasses a regional type of pottery, made in many locations. The clay body contains predominantly sand but occasional grains of siltstone/mudstone can be present. The size and density of the sand does vary but the vessel forms, in particular the rim forms are fairly consistent *e.g.* Vince (1985, Fig. 43; 3-5). An earlier rim form (Vince 1985, Fig 43; 1) dating to the later 11th and early 12th century was not present in the Eardisley material.

Fabric A2 Hereford cooking pot (fig.14, 6, 8)
As with the previous two fabrics, the inclusions within the clay body vary in size and density. Fabric A2 contains both limestone and sandstone. The most common rim form has an internal projection (*e.g*. Vince 1985, fig. 29; 5, 11, 13). All three types were present at Eardisley, with fig. 29; 11, being the most common. Other rim forms were present *i.e*. Vince fig. 29; 10, 12.

The dating of this fabric is not firmly established but the existence of tripod pitchers in A2 suggests that it must have been produced in the early 13th century. Vince (1985, 39) suggested that the fabric was made in or around Hereford. At the time he was writing, nearly 30 years ago, A2 appeared to have a restricted distribution, predominantly to the south of Hereford. However, the examples from Eardisley Castle and from Eardisley village (Rátkai 2001) extend this distribution to the north-west of Hereford and north of the River Wye, neatly encapsulating the adage that distribution maps show the distribution of archaeological material examined, rather than containing an inherent truth about that distribution.

Minor wares (unglazed)

A single example (four sherds from the same vessel in context 047) of Hereford fabric A8 (Vince 1985, 45) was recorded. The fabric is sandy with sparse sandstone inclusions. Fabric A8 was also recorded at Church Road, Eardisley (Rátkai 2001).

A small group of cooking pot fabrics were not recorded in Hereford by Vince. These contained siltstone or mudstone as their primary inclusion and were often highly micaceous. The fabrics are paralleled by material from Wigmore Castle, in North Herefordshire, (Rátkai forthcoming, a) close to the Shropshire border, where such fabrics are particularly common from c. 1200. These fabrics are different from Hereford fabric A4 in having a greater concentration of siltstone/mudstone and by being usually more micaceous.

Two fabrics could be closely matched to Wigmore fabrics S10 and S20 (fig.14, 10), which had moderate to abundant siltstone/mudstone inclusions. They seem to post-date the first wooden building at Wigmore (see below) and were probably in use by *c*. 1200. At Eardisley they were found in layer 028. Fabrics S10 and S20 are likely to be the equivalent of Fabric 'silt' recorded at Church Road Eardisley (Rátkai 2001, 172). A third close parallel was with Wigmore fabric S11, which was sandy with large siltstone/mudstone inclusions. Only one sherd in this fabric was found in context 029. The dating of this ware at Wigmore is insecure because it appears to occur only residually, but a similar date to S10 and S20 is likely.

Minor wares (glazed)

Glazed wares formed less than 1% of the pottery recovered from contexts below the topsoil. They consisted of Fabric B2 (Malvernian tripod pitcher ware, Vince 1985, 48), Fabric C2 (Worcester-type glazed sandy ware, *ibid*. 53-54) and Fabric A7b (Late Hereford ware, *ibid.*, 43-44). The single sherd of B2 had a thin clear glaze and was decorated with combed decoration; the C2 sherd was part of a strap handle with stabbed decoration. There were three A7b sherds; two were from jugs and the third was an unglazed and abraded body/base-angle sherd which is likely to have come from a jug also. Fabric A7b is another ware which is likely to have been made at several places (Vince 1985, 43-44) including Hereford itself. However, Vince wrote that it was also made at Weobley which is just over nine kilometres from Eardisley and would, therefore, seem the most likely source for the three sherds.

One other local glazed ware was present in topsoil 002 and turf 001: Fabric B4 (oxidised, glazed Malvernian ware, Vince 1985, 48-49). This fabric, dating from the later 14th century through to the 16th century, is widespread in Worcestershire, Herefordshire and the Welsh Marches. Further sherds of A7b and C2 were also found in 002.

A glazed, wheel-thrown sherd (SF03, Eardisley Fabric GL01) was excavated from 053, a charcoal rich layer within the building. The sherd had a clean, pale orange fabric with a finely sandy clay body (grains <0.01mm) with very rare, larger quartz grains, <0.25mm. It had a good quality, glossy yellow glaze with copper green mottles, and was decorated with incised lines but was too small (3g) to reconstruct the decoration. The sherd is conspicuously out of place amongst the B1 and C1 cooking pot sherds with which it was found and is clearly not local. A brief survey of lands held by the Baskervilles, lords of Eardisley, suggests that they were primarily in the Marcher counties of England and in Gloucestershire, but neither area is a likely source. A French source seemed most likely and it was sent to Duncan Brown for identification. The absence of mica, characteristic of Saintonge ware, rules out this south-western French source and Brown suggests a northern French origin is possible. He notes that some Rouen-type pieces have the same fine look about them as the Eardisley sherd and suggests a source possibly close to Paris. However, he also notes that there is nothing sufficiently distinctive about the sherd to allow a certain attribution to source.

The pottery and the site

The rampart

Three body sherds were recovered from 015, interpreted as a dump of redeposited turf and topsoil, within the rampart make-up material. The sherds were from a single vessel, a C1 cooking pot. Fabric C1 has a broad date range of the later 11th to 13th centuries. The absence of any diagnostic features makes it impossible to put these sherds in an earlier or later bracket. However, the ubiquitous sandy cooking pot, Fabric C1, has been found associated with the earliest occupation of several Marcher and other castles. Sandy cooking pot is found within the make-up layers of the inner bailey rampart at Wigmore Castle, one of William fitz Osbern's strongholds,

constructed about 1070. It was also found at Hen Domen – Old Montgomery – associated with the earliest occupation (Clarke, 1982), and at Stafford Castle (Rátkai, 2007, 98) again in the rampart make-up, although here with mudstone - tempered ware, oolitic limestone-tempered ware from the Cotswolds and Stamford ware, indicating a late 11th century deposition date. This circumstantial evidence would seem to point to an early deposition date of the C1 pottery at Eardisley. This is somewhat reinforced by the fact that the sherds in the Eardisley rampart are C1 rather than Malvernian fabric B1, since B1 is far better represented overall at the site and statistically, if the rampart had been constructed when both fabrics were in use there would have been a greater chance that it would have been B1 sherds in the make-up. Vince (1985, 48) notes that at Hereford about 12% of the 13th-century assemblages were made up of fabric C1, and that it was only in the later 12th century that the proportion of B1 began to increase markedly from *c*. 44% to 77% between the late 12th to early 13th century. It would not be unreasonable, then, to suggest that the rampart was built before the late 12th century, which is entirely consistent with the first mention of the castle being in the 1180s.

The building and the masonry footing (fig.14, 1-10)

Just over 200 sherds were recovered from clay floor surfaces (005, 009, 044, 033, 028), charcoal rich layers (019, 045, 046) and 053, a floor surface with a high content of iron slag. Pottery is to be expected in floor surfaces made up of redeposited material; essentially, domestic detritus is unintentionally incorporated into material removed from elsewhere in the castle in order to create a floor. The difficulty inherent in this is that pottery of different dates can be mixed together, making dating a little less easy to establish. A second consideration when dealing with pottery from within buildings is that, as a general rule in the medieval period, it was customary to keep floors clean. So, for example, floors within houses at the medieval settlement of Burton Dassett in south-east Warwickshire were virtually devoid of pottery and other finds. The accumulation of debris within a building is therefore usually a sign of neglect or abandonment. Rather in the manner of sweeping dust under a carpet, out of sight is out of mind. With these points in view how can we interpret the medieval building and its pottery at Eardisley Castle?

Firstly the pottery was divided into two groups, one from the clay floor surfaces and the other from the charcoal 'occupation deposits', since these should represent quite different events and depositional factors. Both groups shared the same average sherd weight, 11.8g, a figure consistent with redeposited material. Pottery in both groups consisted mainly of fabrics A2, B1 and C1, with an admixture of siltstone tempered ware in the clay floors and the, possibly imported, glazed sherd (see above) in the occupation layers. However, the two groups revealed rather different proportions of fabrics A2, B1 and C1 (see table 5.2). The relative proportions suggest that the clay floors are later in date than the occupation surfaces based on the increased proportion of A2 and B1 and the decrease in C1. This is clearly anomalous and suggests that despite stratigraphic evidence to the contrary, the deposit sequence in the building is not as straightforward as it first appears.

	Charcoal layers	Floors
Fabric		
A2	19%	25%
B1	42%	55%
C1	38%	13%
S10		2%
S20		5%
GL01	<1%	
industrial ceramic	1%	
Total weight	**1005**	**1513**

Table 5.2 Quantification by percentage weight of the pottery from the clay floors and charcoal layers

Based on the relative percentage of B1, a general date of the later 12th or possibly early 13th century seems likely for activity within the building. However, a B1 sherd from floor 044 and one from the slag rich floor 053 were similar to Vince 1985, fig. 38, 4, dated to the late 13th century, but are perhaps more closely matched by a form illustrated in fiche (ibid., M7, C9, fig. 53, 12), which was associated with a group of pits dated to the late 12th to early 13th century.

The earliest surface in the sequence was 053, which contained B1 (fig.14, 1-2) and C1 cooking pots sherds and the possible north French glazed sherd (see above). Above this was a sequence of layers (066, 069, 065, 064 and 063) which contained no pottery. A secondary sequence consisted of 068 (no pottery) and slag floors 054-55. Fabric B1 sherds only were found in 054 including rim sherds (fig.14, 3-4).

Charcoal rich layer 039 was cut by the construction trench for wall 040. Fabric A2 formed the largest group by weight (208g) but closely followed by fabrics B1 (165g) and C1 (163g). Strangely, of the six rim sherds from this context, five were in C1, with only a single A2 rim making up the total. A deposition date for the pottery of c. 1200 is likely. Layer 046 which contained a B1 and a C1 sherd may be contemporary with 039. Stratigraphically, it post-dates wall 062.

Floor 033, which post-dated the construction of wall 040, contained B1 and A2 sherds, neither of which was diagnostic. Floor surface 028 (fig. 14, 7-8) was possibly the equivalent of 033. Fifty percent of the pottery from this context was B1, just under 33% was A2 and just under 17% was C1. Siltstone-tempered ware formed less than 1%. The relative proportions of these fabrics and the vessel forms are consistent with a date in the early 13th century. Charcoal-rich deposit 045 above this contained only B1 sherds.

The upper level (018) of wall 062 to the east, which consisted of sandstone rubble set within a yellow clay and soil matrix, contained three B1 sherds, including two joining rim sherds (fig.14, 11). The rim form is again consistent with a date before the mid-13th century. Context 036, which lay above 018, contained a small, coarse, black B1 cooking pot body sherd.

Two aspects of the pottery from the floors and occupation deposits need to be addressed: what does it represent in terms of taphonomy and how does that affect

the interpretation of the site. Despite the visible deposition sequence of clay floors and alternating charcoal rich layers, there is no clearly discernible chronological development in the pottery groups, other than the emergence of siltstone tempered wares after the construction of wall 040. This could suggest that no great time elapsed as the clay and charcoal layers were laid down. There were no identified instances of cross-joining sherds – i.e. sherds from the same vessel found in different contexts. Taken together, the pottery seems to indicate a series of layers made up of redeposited material laid down in fairly quick succession. The presence of slag in some of the lower layers confirms the idea that material was brought in from elsewhere.

Is the building likely to have been a kitchen? There are two sets of comparanda which may be germane to this question. The first is Wigmore Castle (Rátkai forthcoming b). Here the 1996 excavations revealed part of an early timber building, dating to the 12th century, which contained a succession of domestic hearths. Like Eardisley, the structure was the first building to be erected after the clay rampart had been modified and the internal area of the inner bailey substantially increased. The building was clearly large, although its exact dimensions could not be established, and probably too large to have served only as a kitchen, but the excavated section certainly seems to have functioned as such. Comparatively little pottery came from the floor surfaces, although, like the Eardisley building, deposits seem to have built up around the timber posts, and the area of the hearths contained charcoal, pottery, a metal skewer and food remains. Like Eardisley, all the pottery was from cooking pots, which usually were sooted. However, at Wigmore, there was a concentration of sherds with internal limescale (from the repeated boiling of water), which is not really a feature of the Eardisley material (although a small number of the sherds did have some limescale). In general, although the Eardisley pottery from the building is not inconsistent with a kitchen, there is no other ceramic evidence which would definitely indicate this.

The second site with which the Eardisley building could be compared is the timber kitchen at Weoley Castle, Birmingham dating to the 12th and early 13th centuries. The original excavator, Adrian Oswald (1964), defined a series of floor levels within the kitchen, broadly similar to what is seen at Eardisley i.e. clay (and also cobble) floors interleaved with black 'occupation deposits'. The stratigraphy, pottery and artefacts from Weoley have recently been subject to review (Linnane 2011; Rátkai 2011; Mould 2011). Although there is little doubt that the timber building was a kitchen, the deposits within it contained a variety of finds, some clearly unconnected with any culinary activity e.g. shoes, horseshoes, sewing equipment etc. This, Mould believed, was characteristic of midden and general waste material. As with the Eardisley material, it was also not possible to sequence the pottery in any way which made chronological sense. In addition, there were some very substantial sections of vessels (cooking pots and jugs), which it was hard to believe had been allowed to remain *in situ* whilst the kitchen was in use. Despite the undoubtedly clear depositional strata, the material within the timber kitchen was more suggestive of a series of dumped infills, rather than a steadily accumulating series of levels, formed whilst the building was in use. Like the Eardisley building, the Weoley kitchen stood on waterlogged ground and this may have necessitated the raising of internal floor levels with redeposited material.

In summary, the pottery evidence from the Eardisley building is more consistent with a series of levelling deposits laid down fairly rapidly, perhaps as part of a building programme after the modification of the rampart. The burnt charcoal rich areas could then be seen as the remnants of open wood fires used by those engaged on construction work. Some of the clay and charcoal layers appear to have been deposited when the eastern wall 062 was already part of a disused structure. The fact that the same clay and charcoal layers continued *over* the collapsed wall is unusual, if they do indeed represent occupation surfaces and floors. At Weoley Castle, a major modification of the castle saw the lower levels of the moat platform (including the timber kitchen) completely sealed by the upcast from the construction of a new moat. On the resultant clean, level surfaces were a series of 'hearths', actually areas of charcoal and burning, associated with the reconstruction of the castle completely in stone and construction of a curtain wall. Kenyon (2005, 164) also notes that standing buildings were also sometimes used for industrial activities associated with construction work. In effect, the buildings were turned into temporary workshops and then either demolished or rebuilt. The pottery evidence seems more likely to suggest association with this type of activity rather than representing a kitchen.

Other Features

Cut 010 and pit 013 contained pottery little different from that encountered in the building. Fabrics B1, C1 and a sand and sandstone tempered sherd were found in 010. Small patches of mottling on one of the C1 sherds could indicate that it was once glazed. The pottery probably has a deposition date of c. 1200-1225, although the sherds could be residual. Pit 013 contained a B1 and a B2 sherd (see above). Again a deposition date of c. 1200 for the pottery is likely. Below the cut features, layer 047 contained four A8 sherds.

Pit 050 (fills 020 and 042) contained a fairly large group of pottery (122 sherds, weighing 1689g). The average sherd weight, 13.8g, was slightly higher than that of the pottery from the floor surfaces but not high enough to suggest primary deposition. The pottery is most likely to represent redeposited material. An A7b sherd and a post-medieval sherd in the upper fill, 020, each only weighing 2g, could date the backfilling of 050, but are more likely to be intrusive trample into the top of the pit fill. The larger amount of B1 in the pit (see table 5.3), does however, suggest that it is later than the floor surfaces.
X

Fabric	% weight
A2	8%
B1	69%
B1?	2%
C1	21%
C2	<1%
A7b type	<1%
Post-med	<1%

Table 5.3 Quantification by weight of pottery from pit 050

The remaining pottery consisted of A2, B1 and C2 for the most part, all of which appeared to pre-date *c.* 1250. A small number of siltstone-tempered ware sherds were recorded which are most likely no later than the main three fabrics. The latest medieval pottery from the site was Fabric A7b (*c*. 1250-1500). This was found in 004 (gravel patch), 020, 038 (agricultural feature). A single post-medieval sherd, possibly originally a trailed slipware, was found in 020.

Conclusion

Interpretation of archaeological evidence from small areas of excavation is always difficult, as can be seen here and also at Wigmore Castle (Rátkai forthcoming b). However, a surprising amount of useful information can be extracted.

The pottery can be dated, with but a handful of exceptions, to the 12th and early 13th centuries. The classic later types of Malvernian cooking pot (e.g. Vince 1985, fig. 38; 4-6), dating from the later 13th century and 14th century were entirely absent. In comparison to Vince's (1985) figures for Hereford, the proportions of the three main fabric types A2, B1 and C1 suggests that activity was concentrated in the later 12th and early 13th century, although some activity earlier in the 12th century is not impossible. An early date is also indicated by the virtual absence of glazed wares such as B2 and C2, although this may in part be connected with the area of the site excavated. There is nothing which could be termed 'high status' in the ceramics, with the possible exception of the glazed sherd GL01, the putative north French import. However, the rather utilitarian aspect of the ceramics is not out of keeping with similarly dated assemblages from Wigmore Castle, Stafford Castle (Rátkai 2007) and many others in the West Midlands and Welsh Marches.

	sherd weight	% sherd weight	sherd count	% sherd count
Fabric				
A2	267	15%	48	21%
A3	3	<1%	1	<1%
A8	14	<1%	2	<1%
B1	1310	74%	152	67%
B3	3	<1%	1	<1%
C1	64	4%	7	3%
C2	20	1%	4	2%
Siltstone	86	5%	13	6%
Total	1767	100%	228	100%

Table 5.4 Quantification of medieval pottery from Church Road, Eardisley

The pottery is very similar to that recovered from Church Road, Eardisley (Rátkai 2001), a similarly sized assemblage to the one from Eardisley Castle. Here, the proportion of B1 and A2 in relation to B1 is significantly less than at the castle, and it is just possible that settlement on Church Road took off after the granting of the

market charter in 1233. If so, this is further circumstantial evidence that the pottery at the castle could represent earlier occupation. Unlike the castle site, there is a much larger proportion of later medieval and post-medieval pottery. Overall, however, the pottery is consistent with fairly local supply with a small admixture of material from North Herefordshire, of the type found at Wigmore Castle.

Most of Eardisley's pottery appears to have come from the east; the presence of fabrics B1 and C1 is what would be expected. A relatively high proportion of fabric A2 at both the castle and village is more noteworthy and extends the distribution pattern of this ware as shown in Vince (1985). There is no significant similarity between the fabrics present at Eardisley and those at Wigmore Castle. At the latter site there is very little Malvernian cooking pot (Fabric B1) and only a very small amount of the siltstone-tempered wares, so common at Wigmore, are found at Eardisley. This seems to establish fairly convincingly that there is a difference in the 'typical' pottery assemblages from north and south Herefordshire. This is no doubt partly due to the terrain since Wigmore lies to the north of a range of hills running south-west from Ludlow to Shobdon Hill and onwards to Hergest Ridge.

The pottery associated with the building, with its paucity of glazed wares and preponderance of cooking pots, is not unusual for castle sites in the region in the 12th and early 13th centuries, and does not necessarily indicate a kitchen in the vicinity. In addition, the pottery from inside the building has all the hallmarks of redeposited material and does not, therefore, indicate the function of the building in which it was found.

There is sufficient evidence to show that Eardisley Castle was in existence in the later 12th century, in accord with the documentary evidence, and there is some evidence that the first timber castle and the excavated rampart were earlier than this. The latest building work noted during excavation was the construction of the footings of a possible chimney or tower. This work probably dates to the early 13th century but the second quarter of the 13th century is not impossible. In short the pottery has made a small but valuable contribution to the understanding of Marcher castles and the ceramics of the region.

6. Geoarchaeology

By Michael J Allan

Aims

The excavation was visited on the 21st March 2011 with the aims of providing a geoarchaeological record, and sampling, as appropriate, to test the supposition that the rampart was comprised in part of turves, and to examine the horizon then exposed at the base of the rampart to see whether it represented a buried soil and land surface on which the rampart was constructed.

Methods

The exposed excavated face of the sondage section through the rampart was cleaned carefully before description to expose an unweathered surface and attempt to reveal any soil or sediment structure. The deposits were described moist following nomenclature outlined by Hodgson (1976), and Munsell soil colours recorded in natural light. It was noted, however, that the polytunnel over the excavation severely affected both the hues and chroma of the recorded colours, giving more strong grey and green hues than when observed in natural light.

Test augering was undertaken with a 10mm diameter rod gouger auger, and with a 25mm diameter gouge auger, from which the descriptions were made. Augering was conducted at the point at which the profile was described to augment those from the exposed section. An undisturbed sample was taken in a metal Kubiena tin for consideration for soil thin-section manufacture and soil micromorphological study. This was cut and tapped into the exposed section and removed as an undisturbed block of soil.

The underlying geology is recorded as Lower Old Red Sandstone and is locally variable comprising sandstones and mudstones.

The geoarchaeological record

The full geoarchaeological record is given below, with a summary interpretation of each layer and their context ascription.

The description was undertaken at a point 1.35m from the south section and of the western (i.e. east facing) face of the sondage through the rampart. The depths given refer to the sondage section, measured down from the top of the section at the excavated surface after removal of the garden soil (002). A single Kubiena sample was taken at 1.00m from the southern section and 120mm from the top of the section.

context	***Depth * (cm)***	***Unit samples***	***Description***
002			Garden soil 29cm thick, abrupt to sharp contact
034	0-8		Reddish brown (5YR 5/3) silty clay loam mixed with dark reddish brown silty clay loam, many medium stones, rare fine charcoal fragments. Fill of cut
015	8-69	<K1>	Mixed deposit – at the top deep reddish brown 5YR 4/4 - 5/4 stone-free massive, structureless silty loam with bands or lenses of between 20mm and 45mm thickness and up to *c.* 130mm width of greyer deposits – dark reddish gray to dark reddish brown, stone-free silty loam with no observable structure. Towards the base the deposit becomes more consistent with less bands and is a moist yellowish red (5YR 4/6) silty clay loam, abrupt wavy boundary. Rampart A horizon material and turves

059	69-84	*** *** **		Brown (7.5YR 3/3) (looks greyish under awning light) massive structureless stone-free silty clay loam, at c. 104cm mottled with few to common very fine distinct reddish brown (2.5YR 4/4) mottles
	84-125			Continued in auger as Brown (7.5YR 3/3) stone-free silty clay loam @ 112cm fine charcoal fragments @ 114cm fine charcoal fragments with small stones @ 125cm charcoal fragment to 4mm Clear boundary Gleyed A horizon material
	125-131/133			brown (7.5YR 4/4) moist silt clay ?depleted former gley soil
	133-145+			Brown to strong brown (7.5YR 5/4 - 6) sandy silt to silty sand with common very small sandy stones, clear boundary Rw – gleyed weathered parent material
stone	145+			Stone Rw – weathered parent material 'natural'

* depth from top of excavated sondage section

The centre of the rampart (as seen in the southern (north-facing) section was a pile of tabular and other stones over soil material. This was deposited on reddish brown moist silty clay, but was a dumped lens as stone-free brown (7.5YR 3/3) silty clay loam occurred beneath.

Geoarchaeology: the rampart construction and its significance

The main rampart (015) was c. 0.7m of reddish brown (5YR 4/3) stone-free silty clay material containing distinct browner (reddish brown 5YR 4/4) lenses with abrupt to sharp edges and clear boundaries. These seemed to be darker and possibly more humic discrete sediment inputs; they contained no structure (i.e. crumb or small blocky structure) that might be expected in a turf. Nevertheless they were probably turf or spadefuls of topsoil material, within the main rampart matrix comprising largely soil derived (A and B horizon material) rather than the natural parent material (Lower Old Red Sandstone geology).

Below the main rampart fill and under the stone core the deposit had clear dumps and lenses indicating this was an accumulatory deposit and not a soil, and that it was a continuation of the rampart material.

Contexts 048 and 049 were brecciated sub-rounded sandstone in a silty matrix, which looked like re-worked and re-deposited parent material (i.e. 'natural' geology), contrasting with the rampart make-up.

Below the main rampart (015) was a 'grey' (reddish brown to brown) gleyed silty clay 0.56m thick with at least two zones of charcoal (at 112-4cm and 125cm), the latter being at the base of the deposit. It seemed to be structureless and had fine mottles. Although moister and with slightly more clay than the main rampart, this may have been essentially the same; the colour variation being due to groundwater table conditions reducing the deposits. This does not, for instance, seem to have been a

well developed brown forest soil that might have been expected if this had been under woodland; at least no soil structure, horizonation or differentiation was noticed throughout this deposit in either the exposed (weathered) section face or in the augered profile. This was gleyed Ah (i.e. topsoil) material comprising the rampart, or possibly pre-rampart accumulations.

A brown (looked grey) moist silty clay 0.12m thick with many small sandy stones lay under this horizon, and although also massive it may have been the truncated gleyed remnants of a former soil. It sat on a sandy silt which was weathered sandstone and probably the weathered natural. Augering was impeded by a stone at 1.45m.

There is no evidence of flooding or flood deposits in the profile. However, high groundwater tables are evident in the gleyed sequences as indicated by the grey colours and the fine mottling.

Summary

1. The main rampart (015) was comprised of soil material with possibly turfs or ‘spadefuls’/small dumps of topsoil material.

2. The greyish layer beneath (059) was not a buried soil, but essentially the same material (without turves and topsoil dumps), gleyed as a result of the groundwater table

3. Despite the proximity to water and the depth of the deposits indicating much lower levels in the past there is no evidence of flooding or flood deposits, or standing water conditions

7. The slags

By Gerry McDonnell

This report describes the material classified as slag recovered from the 2011 excavation in the inner bailey. A brief overview of the material from the site is provided, followed by a detailed description and quantification. The significance of the material is discussed and recommendations made for further work.

Slag classification

The slags were visually examined and the classification is based solely on morphology. In general, metalworking debris can be divided into two broad groups. First is the diagnostic ferrous material which can be attributed to a particular industrial process; this comprises ores and the ironworking slags, i.e. smelting and smithing slags. The second group is the non-diagnostic slags, which could have been generated by a number of different processes but show no diagnostic characteristic that can identify the process. In many cases the non-diagnostic residues, e.g. hearth or furnace lining, may be ascribed to a particular process

through archaeological association. The residue classifications are defined below. The count and weight of each slag type present in each context was recorded.

Diagnostic ferrous slags and residues

Smelting tap slag (TAP) - an iron silicate slag generated by the smelting process, i.e. the extraction of the metal from the ore. Tap slag is one of the most characteristic forms and is distinguished by either a ropey morphology of the upper cooling surface or a fine crystalline fracture with spheroidal vesicles.

Smithing slag lumps (SSL) - randomly shaped pieces of iron silicate slag generated by the smithing process. In general slag is described as smithing slag unless there is good evidence to indicate that it derived from the smelting process.

Hearth bottom (HB) - a plano-convex accumulation of iron silicate slag formed in the smithing hearth. The largest diameter (major diameter D1) and the least diameter (minor diameter D2) and the depth (Dp) of each hearth bottom is recorded and presented in Table 2.

Metal (Metal) - metallic iron fragments, that lack a distinctive morphology of an artefact and may be fragments e.g. of bloom, the raw metal extracted from the furnace.

Hammer Scale (HS) - there are two forms of hammer scale, flake and spheroidal. During heating a piece of iron may develop a thin skin of scale, which is predominantly iron oxide. This will break from the metal during hammering, and normally falls to the ground as small (usually less than 5 mm long) fish-scale like flakes. During fire welding, the mechanical joining of two pieces of metal at high temperature, the surfaces to be joined will have been cleaned by the addition of a flux (usually sand). The flux reacts with any scale present to form a thin film of liquid slag. When the pieces are hammered together the slag is expelled, and during flight forms balls of liquid slag (<10 mm diameter) and freezes. Both micro-slags are generated during smithing, and are normally deposited around the working area (around the anvil). The presence of hammer scale is therefore a strong indicator that smithing (primary or secondary) was carried out on the site. Their small size precludes their hand recovery, and they are usually recovered during soil sample sieving (for environmental data).

Non-Diagnostic Slags and Residues

Hearth or furnace lining (HL) - the clay lining of an industrial hearth, furnace or kiln that has a vitrified or slag-attacked face. It is not possible to distinguish between furnace and hearth lining.

Cinder (Cin) - high silica-content slag that can either be formed as described above or by high temperature reaction between silica and ferruginous material. It can be considered either a non-diagnostic slag or a diagnostic slag depending on its iron content and morphology.

Results

A total of 5.7kg of material classed as slag was recovered from the excavation. The majority of the slag recovered derives from iron smithing slag, and includes smithing slag and hearth bottoms; there are some possible tap slag fragments.

Description

Table 1 lists the slag types present on the site, the majority of the material was smithing slag lumps (4.75kg), and hearth bottoms (0.7kg). Five possible tap slag fragments (244grams) were identified in the large quantity of slag recovered from context 054. A very small quantity of early modern coal clinker (8gm) was recovered from the topsoil. Context 001 contains nine corroded iron objects, all probably modern, including nails (3), hooks etc., and two copper alloy objects a ring and a picture hook. Three iron objects were recovered from medieval contexts: these included two nails and a large piece of either iron or iron-rich slag (context 042, weight 265g).

The slag was concentrated in three contexts (context 054 – 2.2kg; context 020 – 1.6kg; context 042 – 1.0kg). During a site visit the exposed surfaces were checked for the presence of hammerscale, but none was found. A series of soil samples were taken to be assessed in the laboratory for hammerscale (Table 3). The samples were dried and checked for the presence of hammerscale by trawling the soil sample with a magnet. Small amounts of magnetic material were detected but no hammerscale.

The presence of possible tap slag is highly significant, as it would indicate iron smelting being carried out within the castle. However it is probable that as the five fragments represent only 4.3% of the total assemblage by weight, they are not significant. Furthermore they could be smithing slag lumps that were overheated in the hearth and flowed. It was also noted that some of the smithing slag lumps had black vitrified surface, again indicative of possible melting. To rapidly assess whether the possible tap slag fragments differed significantly in manganese content three samples were analysed by non-destructive hand-held X-ray fluorescence. The first sample was a control sample, a fragment of one of the hearth bottoms (context 054), a fragment of the tap slag (context 054) and a slag fragment displaying the black vitrification (context 038). The results showed that manganese was not detected in the hearth bottom fragment, but was present in the tap slag fragment and a minor trace in the black vitrified surface. This data supports the initial identification of the tap slag.

Significance

This small assemblage of ironworking slags is of national importance because there have been very few excavations of castles in recent years, and most data from castles date back to the first part of the last century. Notable exceptions were the excavation of Sandal Castle near Wakefield in the 1960s and 1970s (Johnson et al 1983) which recovered both smelting and smithing slags, which have been recently re-assessed (McDonnell and Andrews 2009). Another problem is that recent excavations rarely investigate early castle stratigraphy and normally reveal

information to the latest phases of castles, often the Civil War (e.g. excavations at Pontefract Castle (Roberts 2002)). Hence the slag from Eardisley Castle is of national importance for three reasons. First, its 12th-13th-century AD date; secondly, a randomly-positioned excavation trench in the bailey of a motte and bailey castle revealing evidence of iron smithing indicates that it was a common craft in the castle; thirdly there is some evidence to indicate the smelting of iron as well as blacksmithing was taking place.

Importantly, there are no fragments of hearth lining or scrap bars which are other key indicators of a smithy assemblage. This suggests that the slag was taken from a slag dump outside a smithy and re-used either as infill or hard-core; the lack of hammerscale confirms this interpretation.

Conclusions

The excavation recovered nearly 6kg of slag from a small trial trench. The majority of the slag (95% by weight) derived from iron smithing; a few pieces are possibly derived from iron smelting. The slag is not in a primary or secondary deposit, as the assemblage lacks the other key indicators of hammerscale, hearth lining and stock iron. The slag was imported from a nearby smithy dump to act as hard-core or in-fill. The assemblage is of national importance as it is securely dated and there are few modern excavations in medieval castles. The slag demonstrates the importance and ubiquity of iron working in medieval castles.

context	Phase	SSL count	SSL wt.	HB wt.	Tap count	Tap wt.	HL count	HL wt.	Fe metal	Cu alloy	other wt.
1									9	2	
2		3	23						2		8
9									1		
18									1		
20		20	1399	190							
25									1		
38		2	36	177							
39		4	143								
42		16	998						1		
53		1	9								
54		>100	1900	320	5	244					
55		15	250								
			4758	687		244					8

Table 7.1 Slag, listing by context number (weight in grams)

Context	Phase	HB wt.	D1	D2	Dp
20		190	85	65	30
38		177	85	60	30
54		320	90	80	35
Mean		229	87	68	32

Table 7.2 Hearth bottom dimensions (Wt in grams, D1, D2 and Dp in millimetres)

Context	Sample num	Phase	HS?	Slag?	HL?
54	5		N	N	N
54	6		N	?	N
55	7		N	?	N
55	8		N	N	N
39a	9		N	N	N
39b	10		N	N	N
46a	11		N	N	N
46b	12		N	N	N
46c	13		N	N	N

Table 7.3 Summary of soil samples taken for hammerscale

8. Archaeobotanical remains and fish-scales

by Catherine Longford, University of Sheffield

Four soil samples from Eardisley Castle were provided for archaeobotanical analysis. They were processed for charred remains using a floatation machine in the Archaeology Department of the University of Sheffield. Floated material was collected in a 0.3mm mesh sieve and the heavy residue was caught in a 2mm mesh. The samples were from contexts 039, 045, 046, and 053; a total of 14 litres of soil was processed. The floated material was split into even fractions using a riffle splitter and fractions sorted under a dissector microscope at up to 40x magnification. Dependant on the size of the sample, either half or a quarter of the sample was sorted. The heavy residue of each sample was sorted in its entirety but contained no botanical remains. Sample volumes and contents are recorded in Table 8.1. From the initial fraction sorted of each sample, all types of environmental remains (bone, fish scales, shell, charcoal) were removed; in subsequent fractions only charred plant remains were selected. The material from Eardisley Castle was fairly consistent in environmental content between samples. All samples contained fragments of bone, some of which appeared burnt, fish vertebrae, fish scales and eggshell.

Context	**039**	**045**	**046**	**053**
Comment				floor sample
Soil volume (L)	2	4	4	3
Flot volume (ml)	150	215	165	155
Fraction sorted	25%	12.5%	12.5%	12.5%
Bone (ml)	4	4	2	1.2
fish vertebrae	6	5	7	4
fish scales (ml)	0.6	1	0.8	1
egg shell (ml)	0.4	0.2	0.6	0.2
highly vitrified (ml)	0.2	0.2	0.2	0.2
wood charcoal (ml)	13	16.5	7	11

Table 8.1. Sample information and environmental contents.

The volumes are recorded in table 8.1. The fish scales (fig. 15) are the remains of either sardines or herrings although, due to their size, they are more likely to be from herrings (H. Russ, pers. comm. 2011). All samples contained small amounts of a dense, highly vitrified amorphous black material. When sectioned to expose a fresh surface, some fragments retained highly vitrified traces of wood anatomy whereas others were devoid of features. Of those with anatomical features, some fragments were identifiable as *Quercus sp* (oak). Highly vitrified fragments of oak were also identified in a context from a possible lead working area at Wigmore Castle (McParland *et al*. 2010). Non-vitrified wood charcoal was present in all samples.

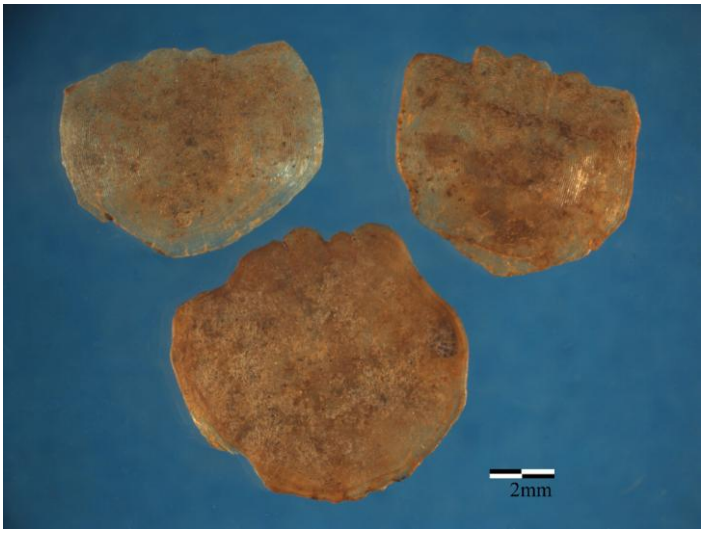

Fig. 15 Fish scales from context 039. Scale 2mm

Charred plant remains were found in each sample. Table 8.2 lists the botanical contents of each sample. Fragments of charred hazelnut shell (*Corylus avellana*) were identified in all samples and are the most abundant element of the assemblage (fig. 16). Oat (*Avena sativa*) (fig. 17) was found in three of the samples and a free threshing wheat rachis (*Triticum aestivum/durum*) was found in the floor sample 053. Common pea (*Pisum sativum*) and Celtic bean (*Vicia faba*) were also identified in the samples. The floor sample, 053, had the richest charred plant assemblage. Modern uncharred seeds were found in contexts 045 and 046. Oat, hazelnut, pea and

Celtic bean were all known elements of the medieval diet (Tomlinson and Hall 1996) and these remains may indicate general consumption debris.

Table 8.2. Archaeobotanical content of Eardisley Castle samples

Context	**039**	**045**	**046**	**053**
Comment				floor sample
Soil volume (L)	2	4	4	3
Fraction sorted for botanical remains	50%	25%	25%	25%
Corylus avellana shell fragments (ml)	1.6	1.2	0.8	1
Avena sativa		2	1	2
Cereal fragments	3		3	5
Triticum aestivum/durum rachis				1
Pisum sativum			4	4
Vicia fava				1
pulse indet.		1	1	
pulse fragments	6			
Polygonaceae				1
Modern *Chenopodium sp.*		6	1	
Modern seed		3	2	
Modern *Rubus sp.*			1	

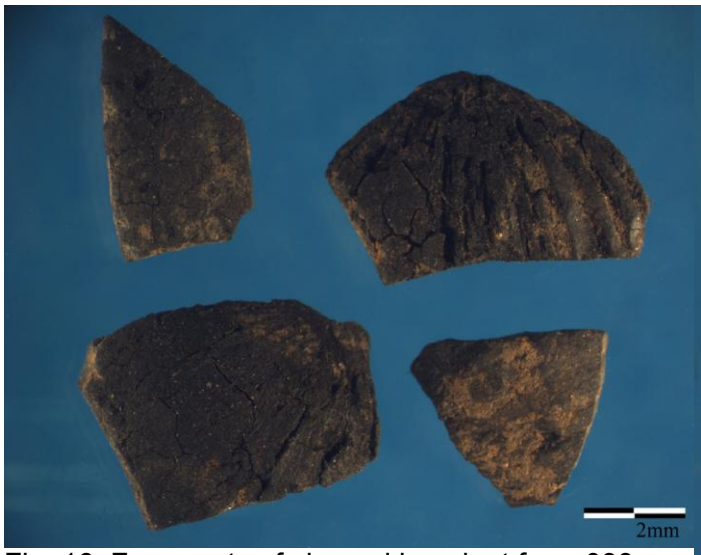

Fig. 16. Fragments of charred hazelnut from 039. Scale 2mm

Fig. 17. Oat from 045. Scale 1mm

9. The animal bone

By Adrienne Powell, University of Cardiff

Introduction

This report considers the late 12th- early 13th-century animal bone recovered from excavations within the inner bailey at Eardisley Castle, Herefordshire. The assemblage was recovered entirely by hand and, excluding material from

the turf and topsoil, comprises 581 fragments in total, of which 270 were identifiable. Most of the bone was recovered from contexts associated with the medieval building, predominantly the floor make-up layers (36% of identifiable fragments), occupation deposits (13%) and the fills from pit 50 (28%); a probable cesspit (013) produced 12% of the identifiable sample, whilst other bone-yielding contexts (including cultivation features, post-holes, a wall and a robber trench) contributed only small amounts of bone. No identifiable bone was recovered from the rampart material.

Method

Bone fragments were identified to species where possible: sheep and goat bones have been distinguished using the criteria of Boessneck (1969), red deer (*Cervus elaphus*) and fallow deer (*Dama dama*) were distinguished following Lister (1996) and hare (*Lepus europaeus*) and rabbit (*Oryctolagus cuniculus*) following Callou (1997). Specimens identified to size categories (eg. cattle-size or goose-size) include ribs, vertebrae other than atlas, axis and sacrum, and bird long bone fragments.

Identifications were checked against reference skeletons held by the Cardiff Osteoarchaeology Research Group Laboratory, SHARE, University of Cardiff, the Laboratory for Social Zooarchaeology, Department of Archaeology, University of Southampton, and the author.

All identifiable fragments were recorded using a zoning method following Serjeantson (1996) and Cohen and Serjeantson (1996), fragments being recorded when over 50% of a zone was present. Ribs were recorded when the head was present and vertebrae, other than atlas, axis and sacrum, when over 50% of the centrum was present. In addition to the basic fragments count (NISP) thus produced, the minimum number of elements (MNE) was calculated for the most abundant mammal species; this was derived from the sum of the most frequent zone for each element, taking side into account. The minimum number of individuals (MNI) for each of these species was then derived from the most frequent element.

Toothwear was recorded using Grant (1982) for the domestic mammals and Brown and Chapman (1990) for fallow deer. The fusion stage of post-cranial bones was recorded and related age ranges taken from Getty (1975). Sexes were separated using morphological characteristics of the pelvis in sheep and cattle (Grigson 1982) and of the canines in pigs (Schmid 1972). Bones of all species were measured, where possible, following von den Driesch (1976), Payne and Bull (1988) and Davis (1992). For all identified bones, gnawing, burning and butchery marks were noted where present.

The assemblage

In view of the relatively small size of this assemblage, the range of species present is remarkable, with wild mammals and birds comprising 25% of the

identified material. Fish was represented by a single unidentified fragment and from scales retrieved by sieving for environmental samples (see section 8, above). Overall the assemblage was in good condition, with surface modifications such as gnawing damage and butchery marks well preserved. Butchery was evident on 19% of identified fragments, primarily in the form of knife cuts, heavier chopmarks were less common and sawmarks were rare. Carnivore gnawmarks were also frequent (19%) but rodent damage was noted on two specimens only.

Domestic mammals

Mammal bones comprised most of the Eardisley Castle assemblage (81%), of which the majority of the remains (75%) belonged to domestic mammals (table 9.1).

Table 9.1: Mammal bones

Species	NISP
Cattle	37
Sheep	2
Goat	3
Sheep/goat	13
Pig	62
Dog	4
Cat	8
Red deer	4
Fallow deer	10
Red/fallow deer	11
Roe deer	10
Deer	1
Hare	2
Rabbit	1
Hare/rabbit	2
Fox	2
Badger	1
Cattle-size mammal	16
Sheep-size mammal	29
Total	218

The most abundant species is pig, the remains of which account for 53% of the NISP and 50% of the minimum of individuals (MNI) for the three main

domestic mammals. Cattle bones comprised nearly a third of the total NISP (32%) and sheep/goat made the least contribution (15%). However, when MNIs are considered, cattle and sheep make an equal contribution. Both sheep and goat were identified, although only a few specimens of each. However, the identified goat specimens, a metacarpal and two metatarsals, are from a single context (012) from the cesspit and are likely to be from the same immature individual. Body part distribution for the main domestic mammals is shown in Table 9.2 and suggests that all areas of the body were represented, with a slight overrepresentation of pig mandibles the only exception. However, the small sample size means taphonomic bias cannot be excluded as the cause for this pattern, rather than economic choice of the inhabitants.

Table 9.2: Minimum number of elements (MNE) for the main food mammals

Element	Cattle	Sheep/goat	Pig	Red deer	Fallow deer	Red/fallow deer	Roe deer	Total
Occipital condyle			1					1
Mandible	1	2	7		1			11
Atlas	1							1
Axis	2							2
Scapula	2		3			1	1	7
Humerus	1	1	1		1			4
Radius	2	3	2			1		8
Ulna	1		2			1		4
Pelvis	1		2				1	4
Sacrum								0
Femur	1		2			2		5
Tibia	4	2			1		2	9
Astragalus	1			1	2			4
Calcaneum		1	5	1			1	8
Metacarpal	4	2	6	1	2	1	2	18
Metatarsal	1	3	8			1	2	15
Phalanx I	4	1	2					7
Phalanx II	1		1					2
Phalanx III			1					1
Total	27	15	43	3	7	7	9	111
MNI	2	2	4	1	2	1	1	

Butchery marks were more frequent on cattle bones (30%) than on either pig (24%) or sheep/goat (19%) and include more chop and, especially, saw

marks than in the smaller taxa. All stages of carcass processing are indicated by the butchery evidence, from skinning marks on phalanges, through disarticulation and filleting, to splitting of metapodials, probably for access to marrow. A single specimen was worked: a pig 3rd metacarpal was pierced midshaft antero-posteriorly by a hole 5.2mm in diameter with some use polish apparent around the hole.

Ageing data are scant in the assemblage as there were few bones retaining state of fusion evidence and only one complete toothrow. The latter is an adult sheep/goat specimen with advanced wear on the dentition consistent with an age of six to eight years (Payne 1973). The fusion evidence for sheep/goat (n=8) indicates that immature animals were also present: aside from a single distally unfused radius which must be from an individual younger than 42 months, these unfused specimens consist of the previously mentioned goat metapodials from the probable cesspit and another metacarpal fragment from the same context which may also be goat and possibly the same individual. The timing of epiphyseal closure for sheep/goat distal metapodials is 20-24 months, hence these specimens would be from an animal/animals younger than this, considerably younger from their size and surface condition although not neonatal. For cattle, a single mandible retained a P_4, erupting but not yet in wear suggesting an age of two and a half to three years; the fusion evidence (n=15) is consistent with this as there were no unfused early-fusing bones and only one specimen, a fused proximal tibia, was from an older animal.

Table 9.3: Pig epiphyseal fusion

Element	Fused	Unfused	% Unfused
Radius, p	1		
Pelvis	2		
Sub-total <1 year	3	0	0
Metapodial, d	3	9	
Phalanx I	1	1	
Sub-total < 2 years	4	10	71
Calcaneus	0	5	
Sub-total < 3 years	0	5	100
Radius, d		1	
Sub-total < 31/2 years	0	1	100

For pigs, the mandibular age at death data consist of an isolated M_1 in early wear, suggesting an animal of around six months or a little more, and three

incomplete toothrows with the P_4 in wear. Since P_4 has erupted by 16 months (Habermehl 1975) these teeth are from animals older than this, two of the specimens show minor dentine exposure and so are probably not much older than 16 months, whilst wear is more advanced in the third. Assuming a spring farrowing, these teeth could represent autumn slaughter of animals in their first and second years. The pig epiphyseal fusion data (table 9.3), whilst not showing slaughter of first-year animals, does show slaughter in the second year and no animals surviving beyond three years.

The sex ratio in pigs was relatively balanced: of seven lower canines three were male and four were female. As most were isolated rather than from aged mandibles they could not indicate whether the preferred age for slaughter differed between males and females, however a single male specimen came from one of the mandibles with a P_4 in early wear, indicating survival of some males into the second year.

Sexing information for cattle was limited to a single pelvis, female, and was entirely absent for sheep/goat.

The small suite of measurements produced precludes detailed analysis. However, comparison with contemporary animals in the ABMAP database (Serjeantson 2003) suggests the cattle, sheep/goat and pig were of average or slightly smaller than average size for the period. Details of the measurements are available in the archive.

Evidence of pathology was present on several cattle or cattle-size bones. A first phalanx exhibited a depression on the distal surface abaxially; it appears to be a lesion typical of osteochondrosis, observed frequently in the phalanges of cattle and less frequently in other elements. Both genetic factors and husbandry practice have been implicated in the aetiology of this condition (Thomas and Johannsen 2011). A second phalanx showed a slight extension of the proximal articular surface consistent with an early stage of osteoarthritis. A navicular cuboid showed a cluster of small pits, surround by shiny reactive bone, on the medial facet of the distal surface, this suggests an infection of some kind, apparently localised although without the articulating elements it is difficult to be certain. Two cattle-size ribs show evidence of trauma in the form of fractures: in one specimen the bone is well-healed with a slight cranio-caudal misalignment of the joined ends the only sign of the break; in the second case, the rib shaft shows a transverse facture surrounded by reactive bone, hence this animal died before the healing process was well advanced.

Small numbers of both dog and cat bones were present. The dog remains comprised isolated bones, dispersed over several context types and include an incomplete radius from a relatively large, robust animal. None were from immature animals. The cat remains, in contrast, came from upper cesspit fills (011, 012) and are likely to represent two individuals. The elements present include a mandible pair, two left humeri, fused distally and unfused proximally, a single right and two left ulnas, all fused proximally and unfused distally, and a left radius also fused proximally and unfused distally and a probable pair

with one of the ulnas. The epiphyseal fusion suggests the remains are from animals between 10 and 11 ½ months in age.

Wild mammals

The remains of wild mammals comprise 25% of the mammalian assemblage, of which the majority are red deer, fallow deer or roe deer (*Capreolus capreolus*). In terms of minimum numbers, fallow deer is more common than the other two species (Table 9.2) and the three together, in comparison with the main domestic mammals, contribute a third of the total MNI for the major meat animals. Although the NISP for each species is relatively small, the body part representation for fallow deer and roe deer suggests that complete or largely complete carcasses were brought back to the castle from the hunt. Particular absences, such as roe deer fore limb elements (excluding the metacarpals, which could have been brought back with skinned hides) and fallow deer pelvis and femur, may be due to discard at the kill site or dispersal to members of the hunting party (Sykes 2006), or the result of the small sample size. Body part representation in red deer, however, is more limited: the only bones which could definitely be identified as red deer are an isolated lower molar and elements belonging to the fore and hind limb extremities. Again, this could be due to deliberate selection or sampling bias, or, and this may be the case for fallow deer also, the apparently missing elements are in the red/fallow deer category.

Butchery marks were more frequent on the deer as a group (40%) than on any of the domestic mammals and especially on the larger deer (44%). Most of the marks are consistent with dismembering of the carcasses, although one fallow deer tibia shows glancing chopmarks down the shaft suggesting filleting and a red/fallow metatarsal has been split lengthwise, either for marrow extraction or working. One specimen showed clearer evidence of utilisation: a roe deer antler, broken off above the burr and pedicel sawn from the skull. Since this was not a shed antler, it must have come from a buck caught in summer or autumn. The ageing evidence for deer suggests some immature animals were caught: an incomplete fallow deer mandible gave an age range of 26-35 months and an unfused distal epiphysis from a red deer metacarpal would have come from an animal of less than three years (Habermehl 1985).

Bones from wild mammals other than deer occurred in small numbers. A badger (*Meles meles*) ulna was recovered from a cultivation trench deposit (038); two fox (*Vulpes vulpes*) specimens, a fragment of left maxilla retaining P^4-M^2 and a left maxillary canine are probably from the same individual and were recovered from an occupation layer (039) in the kitchen, and a hare radius and scapula came from the same deposit. A further hare/rabbit specimen, large enough to suggest it may be hare, came from pit 50. The only definitely identified rabbit bone, a proximal tibia, came from the robber trench. Whilst rabbit was by this period part of the British fauna and the bone is not obviously intrusive, this possibility cannot be excluded. None of these specimens exhibited butchery marks.

Birds

Bones of birds comprise a sizeable fraction (19%) of the assemblage. The most frequent species is the domestic fowl; as no pheasant specimens have been identifed, the domestic fowl/pheasant bones are regarded herein as domestic fowl. All areas of the skeleton are represented, save the skull, but tarsometatarsi predominate (MNE=11) and produced an estimated MNI of six. These bones represent waste trimmed from the carcasses during meal preparation and two specimens show cutmarks on the proximal ends typical of dismembering. Most of these specimens are immature, taking the fusion time for the proximal tarsometatarsus in late-maturing breeds (Sadler 1991); these must be from birds younger than around seven months, although none appear to be very young. Both males and females are represented, in the form of two spurred tarsometatarsi and a tibiotarsus with a thin layer of medullary bone respectively.

Table 9.4: Bird bones

Species	NISP
White stork	1
Goose	4
Duck	2
Galliform	1
Domestic fowl	6
Domestic fowl/pheasant	14
Grey partridge	1
Woodcock	2
Pigeon	2
Crow sp. cf. jackdaw	1
Crow/rook	1
Raven	4
Goose-size bird	3
Domestic fowl-size bird	9
Pigeon-size bird	1
Total	52

Goose (*Anser* sp.) and duck (*Anas cf platyrhychos*) bones are present in small numbers. Two goose bones, a radius and ulna, show cutmarks suggesting dismembering and filleting, respectively. The two pigeon (*Columba* sp.) bones present could be from a dovecote or a wild population, one shows

cutmarks and hence was at least part of the diet at Eardisley, not an incidental death and inclusion.

Several wildfowl taxa are represented in the assemblage. The three corvid species are likely to have been locally living birds and their remains incidental incorporations into the archaeological deposits, although the raven (*Corvus corax*) bones all came from a cesspit fill (012) and hence could indicate deliberate disposal of a carcass. Of the remaining wild species, woodcock (*Scolopax rusticola*) and grey partridge (*Perdix perdix*), whether as the result of hawking or other methods of capture, are often amongst the most abundant of the hunted birds in the assemblage, particularly those from high status sites (Serjeantson 2006) such as the nearby site of Wigmore Castle (Thomas and Vann, forthcoming).

The third species, white stork (*Ciconia ciconia*), is a rare occurrence in British sites. The Eardisley specimen is a right coracoid which lies metrically in the overlap between the size ranges of the white stork and the black stork (*Ciconia nigra*), however, morphologically it is consistent with the former (Gruber 1990). The bone also exhibits butchery marks: several shallow transverse cuts laterally close to the dorsal surface and the scapular cotyla, these suggest removal of the wing.

Discussion

This assemblage, whilst not of a size to be very informative about husbandry practices in the vicinty of Eardisley Castle, has several interesting features. The relative importance of pig in the diet, as opposed to cattle and sheep/goat, contrasts with the pattern seen in contemporary urban assemblages from Deansway, Worcester (Nicholson and Scott 2002) and Hereford (Noddle 1985) but is consistent with high status sites of the period (Albarella 2006).

The high proportion of wild mammals and birds suggests a significant role for hunting and wildfowling in the economy, and again contrasts with Deansway and Hereford. This pattern is also a signature for high status medieval sites and post-dates the introduction of Forest Law after the Norman Conquest (Sykes 2006). The higher frequency of fallow deer compared with red deer is characteristic of high status sites from the 12th-14th centuries, although it also occurs in urban assemblages (Sykes 2006). Therefore, and perhaps unsurprisingly, the domestic and wild faunal assemblages reflect the high status of the medieval inhabitants of Eardisley Castle.

More surprising is the presence of white stork. This bird is an occasional vagrant in Britain these days with most recent records from the south and east (Cocker and Mabey 2005). There is only one known record of it breeding in the past in Britain, in 15th-century Edinburgh, and whilst it is illustrated in medieval manuscripts, it is not listed on banquet menus (Serjeantson 2010). It is rare in archaeological assemblages and there are only two other definite medieval identifications, from Saxo-Norman deposits at St Ebbe's, Oxford

(Wilson *et al* 1989) and Winchester (Serjeantson 2010), although there are three incidences of stork sp. which could also be white stork (Yalden and Albarella 2009). Its poor archaeological visibility does not prove that this species did not breed in Britain in the medieval period, since other species as rare archaeologically are known to have bred here (Serjeantson 2010). However, its presence at Eardisley represents a noteworthy addition to our knowledge of its past distribution.

10. Discussion and conclusions

1. The excavated medieval sequence and the character of Eardisley Castle

The 2011 excavation trench was designed to illuminate, as far as possible from a very small sample, the general character of the medieval castle, by defining, first, the form of the inner bailey perimeter, and second, the form and function of any buildings that might have been built immediately within it. It was partially successful in achieving these aims, though the excavation also serves as an eloquent demonstration of the difficulties of understanding and extrapolation from an exposure of just eighteen square metres within a densely-occupied and complex site.

The excavated evidence, in combination with very limited documentary evidence, suggests that Eardisley was an earthwork castle whose defences and internal buildings were later upgraded in masonry. The earliest excavated feature was the rampart, constructed mainly of turf with substantial dumps of earth, clay and sandstone rubble, over the top of a deep deposit of dumped soil. Where excavated, towards the south-east corner of the inner bailey, the rampart was found to survive to a height of about 1.4 metres but had clearly once been higher, probably substantially higher, before being removed to create a flat garden at some point between c.1840 and the 1880s. The excavation trench was located about 15-17 metres back from the edge of the bailey ditch on the south side (as recorded by the first edition Ordnance Survey) and about 12 metres within the ditch on the east side. The reverse slope of the rampart may be represented in the sondage section by the top of the turf layer 015, though this may to an extent be illusory, the product of cut features (034/035). No east-west rampart profile was obtainable because of the overlying building and its floor sequence, but the difference in elevation between the base of the floor sequence at the east end of the area and the lowest of the excavated floors at the west end of the area (067), around 40cms lower, suggests a strong underlying slope down to the west, almost certainly the back of the eastern rampart. The implication of ramparts thus demonstrated to be 15 metres wide or more around the bailey perimeter are considerable. The former farmyard and garden representing the levelled inner bailey was calculated by the Ordnance Survey as an area of about 1.7 acres. In its original form, the flat area of the bailey would have been barely a quarter of this. Depending on the form of the bailey defences around the foot of the motte and its encircling ditch, found by the geophysical survey, it seems unlikely that the bailey interior would have been able to accommodate

buildings much more extensive than the present farmhouse. Clearly, the early castle was a fortress and not merely a defended household.

Given the limited space within the bailey, and also the proximity of the water table to the present surface, it is no surprise to find what appear to have been dumped deposits of natural material behind, as well as under, the rampart (048 and possibly others) where levelling-up would create more space and dryer living conditions. It also explains the superimposition on top of the rampart of the building represented by wall 062 and the floors to its west.

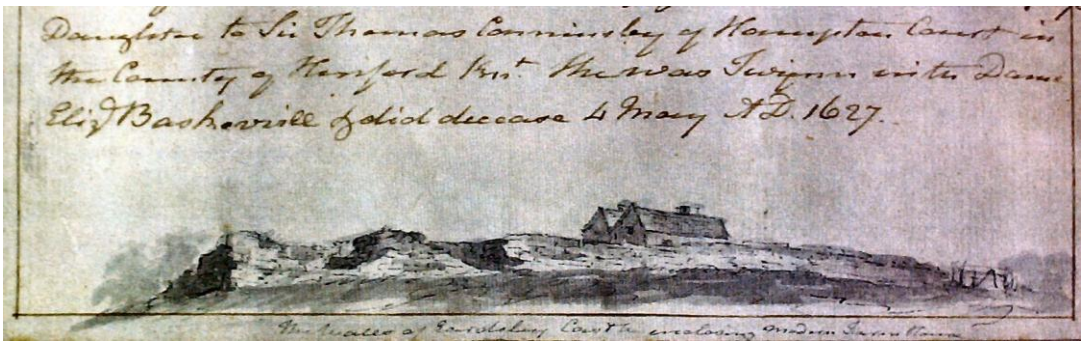

Fig. 18 'The walls of Eardisley Court'. A sketch of the castle and the remains of the curtain wall from the south-east in c.1840 by Elizabeth Mary Guise (see p.6, above)

The principal evidence for the strengthening of the defences in masonry is the recently-discovered 19th-century sketch of 'The walls of Eardisley Court' from the south-east, showing a low and ruinous masonry wall with a corner in the left foreground and what appears to be the crudely-drawn roof of the present farmhouse visible over the wall in the centre. Two higher areas of masonry in what would have been the south-east corner of the enclosure may have been tower footings, though this is uncertain or even speculative; in two places the wall is broken down showing a mass in shadow behind the face, either the wall core or the rampart material behind. Taken with Robinson's account of 'a massive piece of masonry which had probably formed a part of the ancient draw-bridge or sluice-gate' found when labourers were cleansing the 'inner moat' (Robinson 1867, 48), the drawing provides sound, though very limited, evidence of the former presence of a masonry curtain wall.

Was the masonry footing 040 part of the enhanced defences? Built of very large blocks of sandstone and, from the radar results, deeply-founded (presumably down to the base of the rampart material), it was apparently designed to carry a significant load, in other words a structure of some height. It could have been a tower, but it was set back some distance (up to c.15-17 metres) from the curtain wall and the edge of the moat, precluding the possibility of it having been a conventional mural tower, certainly not one projecting forward from the curtain. Only a fragment of the structure lay within the excavated area, cut into the reverse slope of the rampart, though the geophysical anomaly of which it formed part (Roseveare 2010, catalogue no.34) confirms that the main bulk of the structure lay outside the excavation to the south, closer to the perimeter, but still set back from it. The strongest possibility is that it was directly associated with the building into which it was

inserted, possibly as the footing of a chimneystack to one or more fireplaces lying just outside the excavated area. The only sign of *in-situ* burning within the excavation trench was however a minute patch of clayey soil, burnt orange (context 032), at the point where the west face of the masonry footing entered the south section.

The masonry footing was inserted into some kind of a pre-existing building, which continued in use subsequently and, as far as can be seen, retained the broad functional character it had had previously. The building is represented by the earlier rubble wall foundation 062 and the two post positions bearing on it (036, 037), and by the sequence of alternating layers of clay and charcoal-rich soils that were confined by the wall foundation and posts. This sequence of layers extended over a distance of more than four metres west of the wall with no sign within the excavated area of an opposing wall, so the overall dimensions of the building containing them are unknown. The post positions 036 and 037 on the wall top could represent the vertical posts of a closed timber-framed wall, or they could have been free-standing, forming one side of an open-sided shed-like structure or pentice.

What was the building for? Answering this question is not entirely straightforward as the overall form of the building is unknown and there is strong evidence that the deposits within it consisted of imported materials (see pottery report, above), so artefacts found in them do not necessarily relate directly to the activities taking place within the building.

A few general probabilities may be stated with some confidence. First, the excavated building seems to have been a roofed structure, the sequence of alternating clay and charcoal-rich deposits confined to the west of rubble wall foundation 062 having the characteristics of interior and not exterior surfaces, with no sign of metalling or cobbling (except possibly for the partial exposure of cobbles 066 and flagged surface 068 at a lower level), and no sign of the development of soil horizons (mud) between alternating clay and charcoal layers. Second, although the clay layers consisted of material brought to that location, along with 12th and early 13th-century pottery already in it, this does not invalidate their interpretation as floor surfaces – in the sense of a laid surface that was repeatedly walked on – rather than as tips or dumps of material, for example moat upcast, used in a short period of time to raise levels above the water table. When excavated, most of the sequence of black and clay layers readily peeled apart in a way suggestive of alternate episodes of deposition and trampling, in other words, the re-laying, patching and use of internal floors, even if, as the pottery tells us, it was over an extremely short, ceramically undetectable, period of time. The external origin of the layers is evident not just from their pottery content, but from the wood charcoal content, unaccompanied by any significant degree of in-situ burning, and by the slag patches, unaccompanied by any of the residues of iron-smithing or the infrastructure of smelting.

The activities represented in the contents of the floor sequence, even if they were taking place outside the actual space that was sampled by the excavation trench, appear to have been: extensive burning using wood for

fuel; the disposal of food remains resulting from the consumption of foodstuffs of a generally high-status character; cooking, represented not only by cooking-pot sherds but by the presence of quantities of fish-scales, and iron working, represented by the patches of slag, including tap-slag possibly resulting from smelting. The overall impression is one of a mixture of service functions, dominated by those that were based on combustion. In this context it is interesting to note one of Duncan James's observations on the thirty historic buildings he surveyed in Eardisley: that nearly all were built with their high-end accommodation towards the north-west and (by implication) their service ends to the south-east to accord with the local prevailing wind (James 2005). This arrangement seems to have appeared as early as c.1200 at the castle, with service functions taking place in the south-east corner of the inner bailey, and additionally perhaps spreading eastwards, outside the moat, into the site of the 1994 salvage excavation which found burnt clay fragments and a hearth bottom (Topping 1994). Any more precise attribution of the excavated building than to part of the castle's service ranges is bound to be speculative, given the nature of the deposits. However, given that the use of slag as a floor patching material was a more or less one-off occurrence, it is likely that domestic, not industrial, functions predominated in the vicinity. These included cooking, and the disposal of food remains, so it may be that the excavated space was some kind of adjunct to a kitchen – a lean-to pentice – that was repeatedly re-floored but not kept clean; possibly it was fuel store or similar.

The architectural character of the excavated building is uncertain, though the very limited evidence points to a mixture of timber framing (post positions 036, 037) and masonry, not just the relatively insubstantial rubble wall footing 062, presumably a replacement or underpinning for a timber-framed wall or arcade, but the massive slabs of footing 040, clearly expected to carry a substantial load and not remotely characteristic of a 'normal' domestic building of the period. But, while indicative of the high status of the site, measured in terms of apparently substantial investment in the service ranges, it cannot be assumed from the excavated evidence that the actual defences were being, or had been, rebuilt in masonry at this date (late 12th-early 13th century). As noted earlier, it is likely that the earthwork defences were strengthened in stone, but the only evidence found so far is the 19th-century sketch, reproduced above (fig. 18).

The most telling excavated evidence of the unusual status of the site comes from the faunal evidence of discarded bones. The predominance of pork over cattle and sheep or goat is consistent with high status, as is the large proportion of wild species present (25% of the total), deer, particularly fallow deer, forming about a third of the meat animals. Hunting and wildfowling were obviously of great significance in the life of the late 12th – early 13th-century castle, and in the lives of its lords, the Baskervilles. The most significant single find in this respect is the butchered bone of a white stork, a non-native species. This recalls the presence of a crane in the bone assemblage at Launceston Castle, Cornwall, along with swan, partridge, woodcock and plover, reflecting the diet of the privileged, aristocratic early residents of the castle (Albarella, Davis and Smith, 2006, 448).

2. The question of the domus defensabilis

Disappointingly, the excavation shed no further direct light on the issue of the character and location of the fortified house listed by Domesday Book in Eardisley (DB f.184v) and there was no pre-Conquest pottery amongst the excavated assemblage. However, the supposition that the Domesday *domus defensabilis* occupied the same site as the castle is strengthened by the links that can now be demonstrated between the castle site and the church next door, although the archaeology of these is post-Conquest. Not only do the church and the castle (fig.3) occupy adjoining sites on the slight west-east ridge – the motte lying on a westward extension of the church's axis – the two sites were isolated from the rest of the settlement by a north-south ditch, cutting across the ridge alongside and parallel to the main road. Excavated on a site a few metres to the north of the church, the ditch was 5.8m broad, but only 1.3m deep and contained 13th-15th-century pottery in its fill. Whether this was a serious defensive feature or a property boundary distinguishing the church and castle and their surroundings from the remainder of the settlement, is unclear (Archer 2009).

However, one implication of the castle excavation is that it now seems less likely that the footprint of the bailey, without its motte, can be taken to reflect closely that of a pre-existing fortified enclosure around a pre-Conquest or very early Norman hall. The size of the ramparts found by the excavation suggests that the construction of the castle was accompanied by a great deal of earth-moving, and that this was not a case where an earlier enclosure was simply retained, strengthened and re-used. There was no evidence of any turf-line within the rampart material suggestive of a substantial pause or gap between construction phases. A pre-Conquest hall and enclosure may well underlie the castle, but no evidence of it was forthcoming from the small excavated sample; the evidence was rather of a very substantial disruption to the pre-12th-century landscape capable of obscuring all earlier evidence – at least without total excavation.

Attention has been drawn by Malcolm Mason to the subtle west-east ridge shared by the church and castle. This is apparent cartographically in the line of the 75-metre contour, which reveals the ridge as an east-facing promontory, extending eastwards across the main north-south road, with low-lying flood-prone land to the north bisected by watercourses, one of which also crosses the road. Archaeobotanical work on the Eardisley district in the early medieval period is lacking, but if the Domesday description of Eardisley – a fortified house in the middle of a wood – is taken at face value, the possibility arises that the east-facing ridge approximately represents the early clearing, Aegheard's *leah*, which gave the settlement its name (Copplestone-Crow 1989, 77).

Fig. 19 Aerial photograph of Eardisley Castle (centre) looking north (Neil Rimmington, Herefordshire Archaeology)

3. The castle and the borough

Disregarding, for the moment, the enticing but unprovable proposition above, there is no doubt that the east-west ridge represents a settlement focus that was well established by the end of the 12th century at the latest. In addition to the church and the castle, salvage excavation in 1994 between the two found a number of floor surfaces and other deposits, burnt clay fragments, either from a wattle-and-daub panel or from an oven, and some evidence of iron working (a hearth bottom). The associated pottery was not closely dateable but was mainly 12th and 13th- century. A substantial cut was also observed in section on the west side of the lane running between the castle and the church, suggesting the possibility that these deposits belonged to an outlying part of the castle, perhaps a narrow strip of ground between the known inner bailey ditch and an outer concentric ditch where the lane now runs (Topping 1994). In general terms the deposits recorded on this site and those in the 2011 excavation, a few metres to the west across the inner bailey ditch, appear to have been similar, and show that the eastern periphery of the castle was, despite its proximity to the church, characterised by activities that involved burning for domestic and industrial purposes. The suggestion of an outer ditch between the castle and the church is speculative, given the fragmentary nature of the evidence, but the existence of a third ditch, running north-south along the main road frontage is more secure given that this is based on a full excavated profile (see above). On balance it appears that the area around the church, including the 1994 salvage excavation site, lay within the bounds of the castle, but the possibility of domestic tenements within some kind of outer bailey cannot be excluded.

Was this the origin of the nucleated settlement at Eardisley that went on to acquire urban characteristics in the 13th century, recognised by the grant of a market charter and fair in 1225 (Close Rolls 2, p.416; with thanks to Malcolm Mason)? This is a possibility, though occupation has now also been demonstrated before the end of the 12th century on the east side of the main road, 150 metres to the north, on a low-lying and flood-prone plot that had reverted to agricultural use by the 16th or 17th century (Stone 2001). Such a location is most unlikely to have been the first occupied site in the village, raising the possibility that the settlement of Eardisley had achieved more or less its present linear form not long after c.1200.

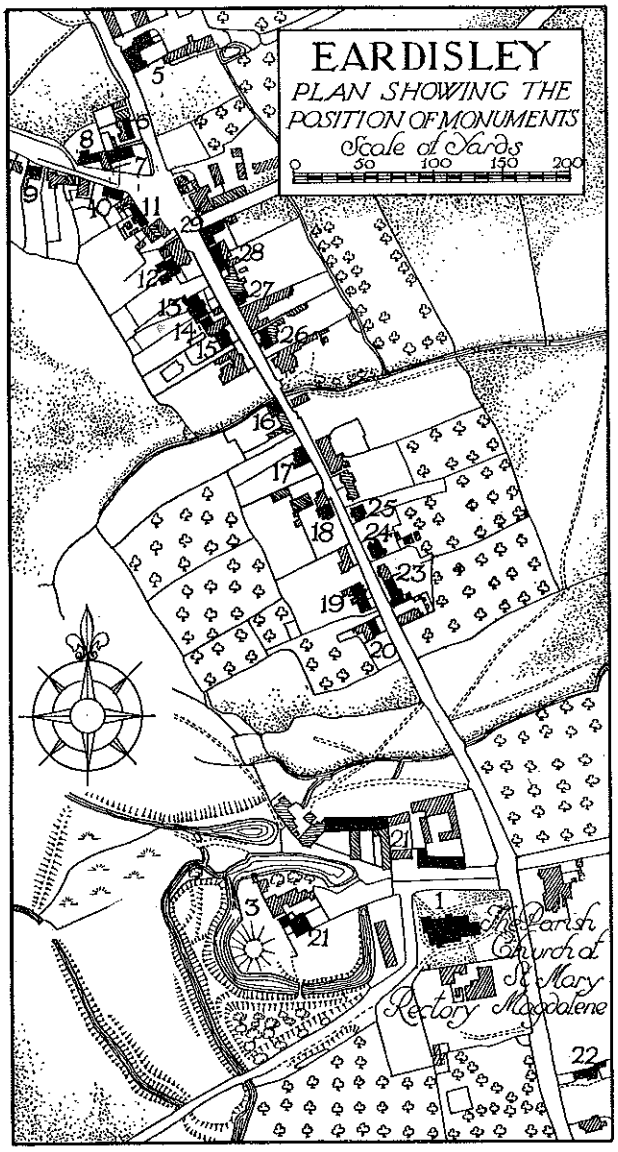

Fig.20 The RCHM plan of Eardisley village and castle

This, in turn, further underlines the present unpredictability of medieval urban development in western Herefordshire. While, it seems, 12th-century Eardisley grew rapidly and almost instantly reached its full pre-Black Death extent, recent work by Herefordshire Archaeology has suggested that 13th-century Kington, despite its sophisticated grid-plan was occupied mainly by farmers,

while at nearby Lyonshall a framework was created for settlement which was scarcely if ever occupied.

4. The archaeology of Eardisley Castle: management implications

Before the excavation, information on the below-ground composition of Eardisley Castle came from three sources. The first was the brief 1994 intervention described above just east of the inner bailey, which found medieval deposits at 0.3m to 0.4m below the modern ground surface, where they lay to a depth of roughly 0.8 metres. The second source was a pair of investigations of very limited extent around Castle House. In 2005 underpinning to prevent subsidence by means of two test pits and two bore holes was archaeologically monitored (SMR 42633). A bore-hole drilled from the base of a test pit struck natural subsoil at a depth of c.1.8m, but other than this no archaeological data was forthcoming (Ward 2005). In 2006 six holes were dug around the house during the repair of its drains (also SMR 42633), none, however, penetrated below previous disturbance (Crooks 2006).

The final source of information was the geophysical survey undertaken by ArchaeoPhysica Ltd, referred to extensively already (Roseveare 2010). Without the opportunity for ground testing, this predicted that castle-period deposits lay at a depth of about 0.65m under the gardens south of Castle House and would continue to a depth below ground level of about 1.44m. The ground-penetrating radar survey also showed a distinct clear band, devoid of hard reflective targets, around the eastern edge of the survey area, and this was interpreted as silt within the infilled moat.

The 2011 excavation trench has provided an invaluable control on the geophysics results. The depth of burial of castle-period deposits beneath the garden soil proved to be less than predicted, at 0.31 to 0.41m below the current surface – very well preserved deposits of the 13th century and earlier lie just over a spade-depth below the garden. The overall depth of archaeological deposit on the excavated site was not established definitively, but was at least, and probably just over, 1.72m. Moreover, although the complexity of the archaeology was hinted at in the geophysics in terms of the multiplicity of hard reflective targets, remote sensing could not have predicted the extremely dense character of the stratification, with over twenty successively re-laid floors, patches and charcoal-containing deposits within a vertical depth of c.45cms, commencing immediately under the cultivation soil. And, as noted earlier, many of these layers – while perfectly apparent when excavated in plan – were invisible in section and would not have been susceptible to recording during a watching-brief.

The excavation was also able to show that the strongly reflective anomaly (Roseveare 2010 catalogue no.34) targeted by the trench was, as predicted, a substantial masonry feature (040), increasing confidence that other such anomalies are what they appear to be and that the inner bailey does indeed contain a multiplicity of masonry and partly masonry features. Finally, the anomaly-free zone around the eastern edge of the lawn and the geophysics

survey area was shown to represent not the edge of the infilled ditch but the largely turf-built rampart within it.

In summary, although the 2011 excavation was, at six metres by three, an extremely small sample (under one per cent) of the inner bailey, let alone the castle as a whole, it has been able to demonstrate the extreme sensitivity of the core of the monument, with very well preserved deposits close to the present surface. While there has been a major levelling-down episode that saw the removal of the inner bailey ramparts and, almost certainly, the truncation of the uppermost archaeological deposits in the interior, the result has been to expose sensitive, complexly-stratified earlier (12-13th-century) deposits to the base of the present cultivation horizon.

The excavation, which was strictly limited by resources and logistics to a three-week period, concluded without completing the dissection of the clay/charcoal-layer floor sequence overlying the rampart, and having sampled the rampart itself only by means of a small sondage which was not able to penetrate down to a certainly undisturbed natural ground surface. This itself is testimony to the density and complexity of the archaeology of this castle – which, it will be recalled, had already been stripped of all the deposits much later than c.1200 that would have been relevant to its apogee and subsequent decline and abandonment. Had these upper deposits still been present it is unlikely that the excavation would ever have exposed, let alone sampled, the evidence of service functions in the opening years of the 13th century. The wealth of castle sites in Herefordshire is often remarked upon: this excavation offers a comment on the staggering potential of that resource and the huge challenge of managing and unlocking it.

11. Bibliography

Albarella, U, 2006, 'Pig husbandry and pork consumption in medieval England'. In C M Woolgar, D Serjeantson and T Waldron (eds.) *Food in Medieval England*, 72-87. Oxford: Oxford University Press

Albarella, U, and Davis, S J M, 2006, 'The mammal and bird bones: a brief revisit', in Saunders, A, 'Excavations at Launceston Castle, Cornwall' *The Society for Medieval Archaeology, monograph* 24, 447-453

Archer, J, 2009, *Archaeological evaluation at Castle Close, Eardisley, Herefordshire*. Border Archaeology

Baker, N, 2011, 'An interim report on an excavation at Eardisley Castle, Herefordshire'. *Herefordshire Archaeology Reports* 293

Boessneck, J A, 1969, 'Osteological differences between sheep (*Ovis aries* Linné) and goat (*Capra hircus* Linné)'. In D R Brothwell & E S Higgs (eds.), *Science in Archaeology*, 331-358. London: Thames & Hudson

Brown, W A B, and Chapman, N G, 1990, 'The dentition of fallow deer (*Dama dama*): a scoring scheme to assess age from wear of the permanent molariform teeth'. *Journal of Zoology 221,* 659-682

Buteux, V, 1996, 'Archaeological assessment of Eardisley, Hereford & Worcester'. Central Marches Historic Towns Survey, *HWCC Archaeology Service internal report* 313

Callou, C, 1997, '*Diagnose différentielle des principaux éléments squeletiques du lapin (genre Oryctolagus) et du lièvre (genre Lepus) en Europe occidentale*'. Fiches d'Ostéologie Animale pour l'Archéologie. Série B: Mammifères. Valbonne: APDCA

Clarke, P V, 1982, 'The Pottery: A preliminary report*'.* In P A Barker and R A Higham, *Hen Domen, Montgomery, a Timber Castle on the English Welsh Border,vol I,* 1982

Cocker, M, and Mabey, R, 2005, *Birds Britannica*. London: Chatto & Windus

Cohen, A, and Serjeantson, D, 1996, *A manual for the identification of bird bones from archaeological sites*. London, Archetype Press

Coplestone-Crow, B, 1989, 'Herefordshire place-names', *British Archaeological Reports,* British Series 214

Crooks, C, 2006, 'Eardisley Castle House, Eardisley, archaeological monitoring of drainage holes'. *Hereford Archaeology Series* 696, Archaeological Investigations Ltd

Davis, S J M, 1992, ‘Rapid method for recording information about mammal bones from archaeological sites’. *AML Research Report* 19/92

Driesch, A, von den, 1976, ‘A guide to the measurement of animal bones from archaeological sites’. *Peabody Museum Bulletin 1*

Getty, R, 1975, *Sisson and Grossman’s ‘The anatomy of the domestic animals’*. Philadelphia, W B Saunders Co

Grant, A, 1982, ‘The use of tooth wear as a guide to the age of domestic ungulates’. In B Wilson, C Grigson and S Payne (eds.), ‘Ageing and sexing animal bones from archaeological sites’, 91-108. Oxford: *BAR British Series* 109.
Grigson, C, 1982, ‘Sex and age determination of some bones and teeth of domestic cattle: a review of the literature’. In B Wilson, C Grigson and S Payne (eds.), ‘Ageing and sexing animal bones from archaeological sites’, 7-23. Oxford: *BAR British Series* 109.

Gruber, A, 1990, *Vergleichend morphologische untersuchungen an einzelknochen in Ägypten vorkommender Ciconiidae*. München

Habermehl, K-H, 1975, *Die alterbestimmung bei haus- und labortieren*. Berlin and Hamburg: Verlag Paul Parey

Habermehl, K-H, 1985 *Altersbestimmung bei wild- und pelztieren*. Berlin and Hamburg: Verlag Paul Parey

Hodgson, J M, 1976, ‘Soil survey field handbook’. Harpenden: *Soil survey technical monograph* no. 5

Higham, R and Barker, P, 1992, *Timber Castles*, Batsford, London

Hyett Warner, R, 1904, ‘Eardisley and its castle’. *Transactions of the Woolhope Naturalists’ Field Club*, 1904, 261-2

James, D, 2005, *An analysis of the historic fabric of thirty buildings in Eardisley, Herefordshire*. Insight Historic Buildings Research.

Johnson, S, Mayes, P and Butler, L A S, 1983, *Sandal Castle excavations 1964-1973*. Wakefield Historical Publications, Wakefield.

Kenyon, J R, 2005, *Medieval Fortifications*, London, Continuum edition

Linnane, S J, 2011, *Weoley Castle: An appraisal of the surviving Archaeological Archive,* report held by Birmingham Museums and Art Gallery (digital and hard copy), see also www.barbicanra.co.uk

Lister, A, 1996, The morphological distinction between bones and teeth of fallow deer (*Dama dama*) and red deer (*Cervus elaphus*). *International Journal of Osteoarchaeology*, *6,* 119-143

McDonnell, G, and Andrews, R, 2009, *Re-Examination of the Sandal Castle metalworking debris held at Wakefield Museum.* Gerry McDonnell Archaeometals report for P Judkin, Wakefield Museum

McParland, L, Collinson, M, Scott, A, Campbell, G, and Veal, R, 2010, 'Is vitrification in charcoal the result of high termperature burning of wood?' *Journal of Archaeological Science*, 37, 2679-2687

Mould, Q, 2011, *An appraisal of the portable finds from Weoley Castle, Birmingham*, archive report held by Birmingham Museums and Art Gallery (digital and hard copy), see also www.barbicanra.co.uk

Nicholson, R A, and Scott, S A, 2002, 'Animal remains'. In H Dalwood and R Edwards, '*Excavations at Deansway, Worcester, 1988-89: Romano-British small town to late medieval city*', 195-202. *CBA Research Report* 139.

Noddle, B A, 1985, 'The animal bones'. In R Shoesmith, 'Hereford city excavations, volume 3: the finds', 84-94. *CBA Research Report* 56

O'Connor, T P, 1988, 'Bones from the General Accident site, Tanner Row*'*. *The Archaeology of York 15/2*. London: Council for British Archaeology

Payne, S, 1973, 'Kill-off patterns in sheep and goats: the mandibles from Aşvan Kale'. *Anatolian Studies* 23: 281-303

Payne, S, and Bull, G, 1988, 'Components of variation in measurements of pig bones and teeth, and the use of measurements to distinguish wild from domestic pig remains'. *Archaeozoologia* 2: 27-66

Rátkai, S, 2001, 'The Ceramics' (170-176) in R Stone 'Archaeological work on land on the east side of Church Road, Eardisley', *Trans. Woolhope Naturalists' Field Club*, vol 50 for 2001, part II, 161-183

Rátkai, S, 2007, 'The medieval and early post-medieval pottery', in I Soden (ed.) *Stafford Castle: Survey, excavation and research 1978-1998; Volume 2 - the excavations 1978-1991.* Stafford, Stafford Borough Council

Rátkai, S, 2011, *Weoley Castle: a reappraisal of and report on the pottery.* Archive report held by Birmingham Museums and Art Gallery (digital and hard copy), see also www.barbicanra.co.uk

Rátkai, S, forthcoming a, 'The Pottery', in S Rátkai *Wigmore Castle, North Herefordshire: Excavations 1996 and 1998*

Rátkai, S, forthcoming b, *Wigmore Castle, North Herefordshire: excavations 1996 and 1998.* Society for Medieval Archaeology, monograph

Rátkai, S, forthcoming c, 'The Pottery' in P J Pikes *Hereford City excavations Vol 5*

Roberts, I, 2002, *Pontefract Castle archaeological excavations 1982-86,* Yorkshire Archaeology 8. West Yorkshire Archaeology Service

Robinson, C J, 1869, *A history of the castles of Herefordshire and their lords*, 52-56. Logaston Press, reprinted 2002

Roseveare, M J, 2010, *Eardisley Castle, Herefordshire, geophysical survey report* EAR093. ArchaeoPhysica Ltd, August 2010

Sadler, P, 1991, 'The use of tarsometatarsi in sexing and ageing domestic fowl (*Gallus gallus* L.), and recognising five toed breeds in archaeological material'. *Circaea* 8(1), 41-48

Schmid, E, 1972 *Atlas of animal bones*. Amsterdam, Elsevier.

Serjeantson, D, 1996, 'The animal bones'. In S Needham and A Spence, 'Refuse and disposal at area 16 East Runnymede'*. Runnymede Bridge Research Excavations,* vol. *2*, 194-222. London: British Museum Press

Serjeantson, D, 2003, Animal bone metrical archive project. University of Southampton. Data accessed 09/09/2011. doi:10.5284/1000350

Serjeantson, D, 2006, 'Birds: food and a mark of status'. In C M Woolgar, D Sergeantson and T Waldron (eds.) Food in medieval England, 131-147. Oxford: Oxford University Press

Serjeantson, D, 2010, 'Extinct birds'. In T O'Connor and N Sykes *Extinctions and Invasions: A Social History of British Fauna*, 146-155. Oxford: Windgather Press

Shoesmith, R, 1996, *A guide to the castles and moated sites of Herefordshire*. Logaston Press

Skelton, R, 'Field meeting to castles north of Eardisley' *Herefordshire Archaeological News*, 70, 1999, 1

Stirling-Brown, R, 'Field meeting at Brilley', *Herefordshire Archaeological News*, 57, 1992, 43-46

Stirling-Brown, R, 2011, unpublished MS notes on Eardisley Castle, sent to the writer, and deposited in the county SMR monument file (1073).

Stone, R, 2001, 'Archaeological work on land on the east side of Church Road, Eardisley'. *Transactions of the Woolhope Naturalists' Field Club* 50, part 2, 161-183

Sykes, N J, 2006, 'The impact of the Normans on hunting practices in England'. In C M Woolgar, D Serjeantson and T Waldron (eds.), *Food in Medieval England*, 162-175. Oxford: Oxford University Press.

Thomas, R, and Johannsen, N, 2011, ‘Articular depressions in domestic cattle phalanges and their archaeological relevance’. *International Journal of Palaeopathology* 1(1), 43-54

Thomas, R, and Vann, S, forthcoming, ‘The faunal remains’, in S Ratkai, *Wigmore Castle, North Herefordshire: Excavations 1996 and 1998*. Society for Medieval Archaeology monograph series

Tomlinson, P, and Hall, A, 1996, ‘A review of the archaeological evidence for food plants from the British Isles: an example of the use of the Archaeobotanical Computer Database (ABCD)’. *Internet Archaeology* 1 http://intarch.ac.uk/journal/issue1/tomlinson/toc.html

Topping, J, 1994, ‘Salvage recording at Castle Farm, Eardisley’. *HWCC Archaeology Service internal report* 234

Ward, B, 2005 ‘Eardisley Castle House, Eardisley, archaeological monitoring’. Hereford Archaeology Series 685, Archaeological Investigations Ltd

Watkins, M G, 1897, *Collections towards the history and antiquities of the County of Hereford*: Hundred of Huntigton

Wilson, B, Locker, A, and Marples, B, 1989, ‘Medieval animal bones and marine shells from Church Street and other sites in St Ebbe's, Oxford’. In T G Hassall, C E Halpin, and M Mellor, ‘Excavations in St Ebbe's, Oxford, 1967-1976: part I: Late Saxon and medieval domestic occupation and tenements, and the medieval Greyfriars’. *Oxoniensia* 54, 258-268

Vince, A G, 1985, 'The Ceramic Finds' in R Shoesmith *Hereford City Excavations* vol 3*,* ‘The Finds*’.* CBA Research Report 56, 1985, 36-78

Yalden, D W and Albarella, U, 2009, *The History of British Birds*. Oxford: Oxford University Press

12. Acknowledgements

The 2011 excavation was undertaken by the Eardisley History Group with funding from the Heritage Lottery Fund. The writer is grateful to group members Gill Alderman, John Andress, Joseph Bachmann, Claire Buck, Leslie Davies, Barbara Joss, David McAndrew, Anne Preece and Paul Wood for their time and expertise on the excavation, to Irene Pierce (treasurer) and Roger Prout for their contribution to the project and particularly to the group’s organiser, Malcolm Mason. Thanks are also due to Tony Fleming and Lisa Moffett of English Heritage, and to the contributing specialists, for their advice and support, also to Roger and Andrew Stirling-Brown for further information, and to Natalie Cook and Tim Hoverd of Herefordshire Archaeology for figs. 3 and 14 respectively. Thanks are due particularly to the site owners, the Winstanleys, for their kind permission to excavate.