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A Roman enclosure at Crickhowell Road, Trowbridge, Cardiff. Evaluation and excavation 2005–06

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Excavation of a site on the edge of the Wentlooge Levels revealed archaeological remains ranging from the Beaker period onwards, although the main focus of activity dated to the Roman period between the mid first and mid fourth centuries AD. The alluvial soils were drained from the late first or second century AD and a large, probably agricultural, enclosure was created in the third century. After the ditches of the large enclosure had largely silted up a small enclosure was created which contained a smithy. A sub-rectangular metalled surface was possibly the remains of a building. It is likely that these activities were taking place on the periphery of a Roman settlement situated at the interface of the Wentlooge Levels and the Lower Old Red Sandstone.

INTRODUCTION

In April and May 2006 Cotswold Archaeology (CA) carried out an archaeological excavation for the Strategic Estates Division of Cardiff City Council on land between Crickhowell Road and Willowbrook Drive, Trowbridge, Cardiff (centred on ST 2354 8036; Fig. 1) in advance of development.

The site lies on the border of the reclaimed alluvium of the Wentlooge Levels, occupying slightly higher ground at *c*. 9m above Ordnance Datum (AOD). The solid geology is the St Maughans Formation of the Lower Old Red Sandstone overlain by drift deposits of Glacial Till, although the southernmost part of the site is covered by estuarine alluvium of the Quaternary period (BGS 1989).

Although no archaeological deposits were known within the proposed development area, the Curatorial Division of the Glamorgan-Gwent Archaeological Trust (GGAT) considered that the site had archaeological potential because of its topographical location at the margin of the Wentlooge Levels. Evaluation in 2004 250m to the south at Trowbridge Road, St Mellons had revealed traces of a Roman settlement (Fig. 1), and other archaeological sites have been revealed at similar locations along the fen edge of the Gwent Levels (Rippon 1996). Consequently, in 2005, CA undertook an archaeological evaluation of the entire proposed development area between Crickhowell Road and Willowbrook Drive, incorporating 5.5 hectares of rough pasture (CA 2005). This work identified Roman, post-medieval and undated features, and suggested the existence of an enclosed Roman settlement and contemporary field system dating to the second to fourth centuries AD.

Excavation methodology

In the light of the evaluation results, the Strategic Estates Division of Cardiff City Council commissioned CA to excavate the Roman enclosure. A mitigation strategy was devised which comprised the archaeological supervision of mechanical ground reduction of a roughly rectangular area measuring approximately 0.48 hectares (Fig. 2). All features exposed were excavated by hand and recorded in accordance with a written specification produced by CA and approved by GGAT on behalf of Cardiff

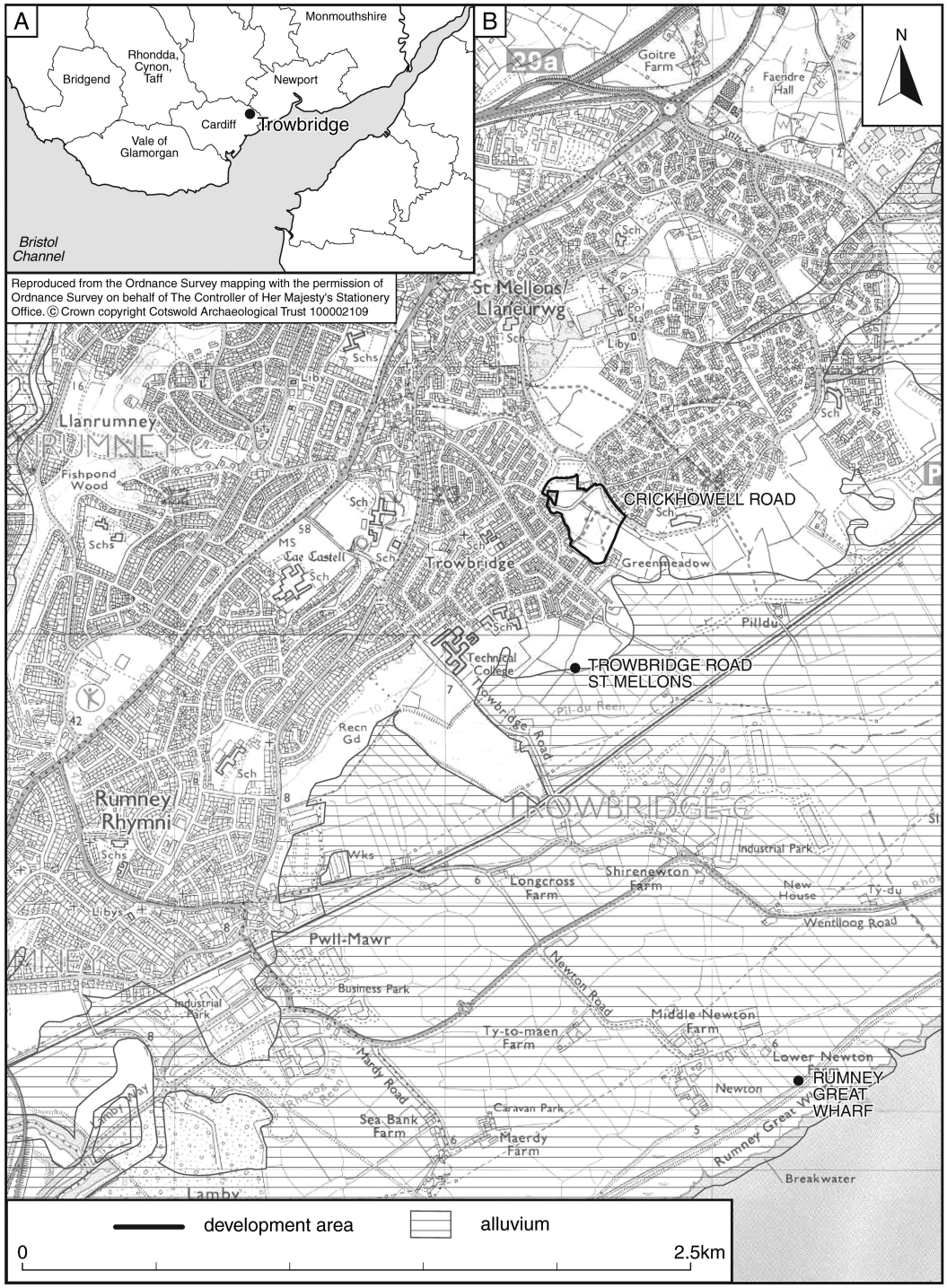

Fig. 1. Crickhowell Road, Trowbridge, Cardiff, site location. Scale 1:25,000.

City Council. At least 50 per cent of the fills of all discrete features, such as postholes and pits, and 20 per cent samples of all ditches and gullies were excavated, focusing on intersections, overlaps and terminals.

The excavation area lay on a slight spur of land that dropped off slightly to the south-west and north-east, and more considerably to the south and south-east. The ground level at the highest part of the excavation, in the northern corner, was at 9.75m AOD, with the lowest point in the southern corner at 7.95m. The evaluation trenching confirmed the underlying geology as mapped and also identified the presence of alluvial layers sealing the archaeological horizon in the southernmost part of the site.

EXCAVATION RESULTS

The identification of key relationships, and the allocation of individual features to periods, was achieved through the combined analysis of the site stratigraphy, spatial patterning of features, fill characteristics, the ceramic evidence and other categories of artefactual material. Three broad chronological periods were identified.

Period 1: Early Bronze Age (*c*. 2400–1600 BC)
Period 2: Roman (mid first to early fourth centuries AD)
Period 3: Post-Roman/modern

The overwhelming majority of features have been assigned to the Roman period (Period 2). The long-lived nature of the majority of the ceramic assemblage did little to enhance chronological distinction between contexts associated with this period but sub-phasing has been elucidated by key stratigraphical relationships.

The alluvial sequence

The results of the evaluation indicated that the focus of archaeological activity lay at the interface of the solid geology and alluvial deposits. Most of the archaeological features were cut into the glacial till, but the two southernmost evaluation trenches (Fig. 2; 19 and 20) demonstrated that the natural bedrock sloped quite steeply towards the south-west. The natural substrate in this part of the site was covered by a thin layer of organic material (1909) at a height of *c.* 7m AOD and a series of five layers of alluvium, accumulatively up to 1m thick. The latest alluvial deposit within this sequence comprised a distinctive pink clay which sealed a possible trackway (1911) within trench 19 and Roman features within trenches 13 and 23 (Fig. 2). This late or post-Roman alluvium is distinct from the earlier alluvium and may be a product of deposition from a minor watercourse containing freshwater and/or colluvium eroding from the rising ground to the north.

Period 1: Early Bronze Age (c. 2400–1600 BC)

Pit 3254 (Fig. 3)

This oval pit was located towards the northern corner of the site. It was 1.6m long, 1.4m wide, 0.25m deep, and contained a single homogenous fill, suggestive of deliberate backfilling. A broken flint scraper and 32 sherds from a single Beaker fineware vessel were recovered from the pit and it is possible that such a vessel may have accompanied a burial. No human remains were present within the pit, but it is possible that these had been destroyed by the acidic subsoil.

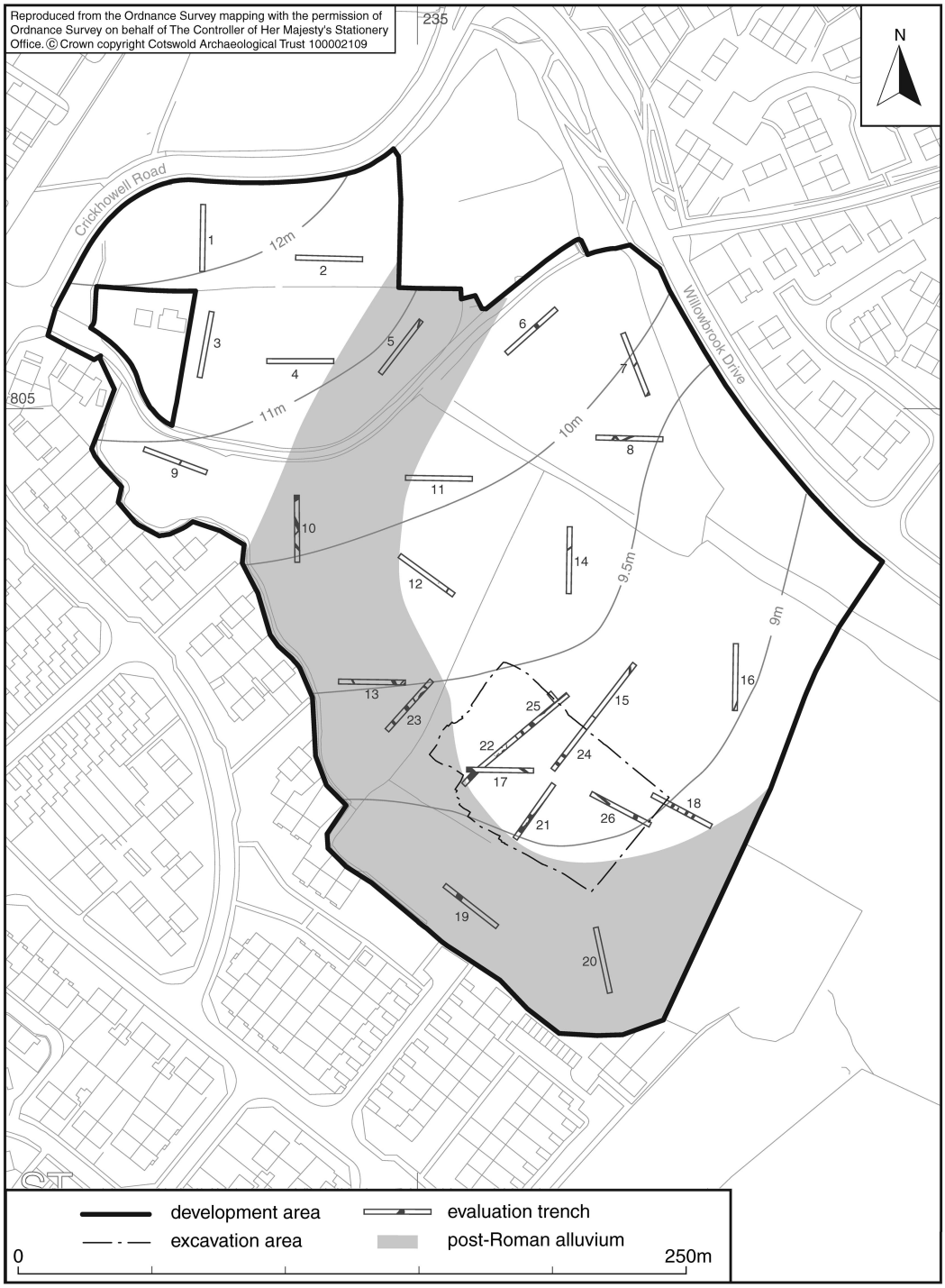

Fig. 2. Site location. Scale 1:2,500.

Period 2: Roman (mid first to early fourth centuries AD)

Period 2a: drainage features (?late first/early second – early/mid third century AD) (Fig. 3)
Parallel ditches 5010 and 5011 represent the initial elements of a drainage system laid out in line with the fen edge on the edge of the wetland. Ditch 5010 varied between 0.5m and 1.5m in width and survived to a depth of between 0.2m and 0.5m. Ditch 5011, the more substantial of the two ditches, widened from 1.5m to 3.5m towards its north-western extent as a result of at least three episodes of recutting. Following the contour of the land, it became deeper from north-west to south-east, increasing from a depth of 0.15m at its north-western extent to 1m where the south-eastern section cut across it (Fig. 4, section AA). Both features extended beyond the south-eastern limit of excavation and terminated towards the north-western end of the site. They were filled by various alluvial deposits comprising silts, sands and clays in varying proportions. The large majority of the finds associated with this period were recovered from ditch 5011. This included 484 sherds of pottery, 473 fragments of animal bone, including butchered and/or burnt examples, and two conjoining fragments from the complete upper stone of a rotary quern (Fig. 10, no. 1). Pottery dating to no later than the early to middle third century AD was found in the ditch infill, and a pit was dug into the infill before ditch 5011 was recut.

Subsequently the drainage system was augmented by the addition of further ditches 5004, 5005 and 5006, which were arranged roughly perpendicular to the earlier ditches (5010 and 5011). They were less substantial than the earlier ditches, measuring up to 0.9m in width and 0.55m in depth. Ditches 5005 and 5006 appear to have drained into ditch 5011, whilst ditches 5004 and 5005 truncated ditch 5010, which must by now have fallen out of use. These three later ditches were filled with similar silty fills and contained only a small assemblage of pottery and animal bone.

Period 2b: large enclosure (third century AD) (Fig. 3)
The drainage ditches had fallen out of use by the early-mid third century and the site was then occupied by an enclosure defined by ditches 5012 and 5013 (Period 2b). Both ditches extended beyond the limits of excavation, indicating that they formed part of a much larger enclosure. A gap marks an entrance approximately 4m wide in the north-western side of the enclosure, but was partially obscured by later ditches 5002 and 5003. Both ditches had a broad, V-shaped profile and rounded base. It was evident that ditch 5012 had been recut at least twice (Fig. 4, section BB). The recut ditch terminated 4m to the south-west of the original terminal, thus creating a wider entrance, approximately 8m wide, between ditches 5012 and 5013. This event may have been associated with, or preparatory to, the subdivision of the enclosure by ditch 5003 in Period 2c, (Fig. 5). A series of ditches revealed in evaluation trench 18 suggests the alignment of the south-east side of the enclosure, but there is no evidence for a north-west return which must be assumed to lie beyond the northern end of trench 15.

The enclosure ditches survived to a width of between 2m and 2.7m. Ditch 5013 had a maximum depth of 0.75m, whilst 5012 became deeper along its south-western length, dropping from 0.7m from its north-eastern extent to a maximum of 1.2m. The ditches were filled by various deposits of clay, silt and sand, mostly indicative of episodic alluvial inundation. Intermittently, large cobbles were present towards the base of ditch 5012, possibly the result of clearance within the enclosure. A fill derived from the natural dark pink clayey sand substrate suggested slumping from an internal bank.

No finds were recovered from ditch 5013, but ditch 5012 produced 169 sherds of pottery, including a substantially complete vessel made from a native-type fabric. Large quantities of animal bone fragments (over 5,800 in total) were recovered from a short length of the ditch close to the south-western corner. This assemblage, although generally in a relatively fragmentary condition, included examples of pig, cow and sheep. Finds recovered from elsewhere along ditch 5012 comprised a further 2,000 fragments of

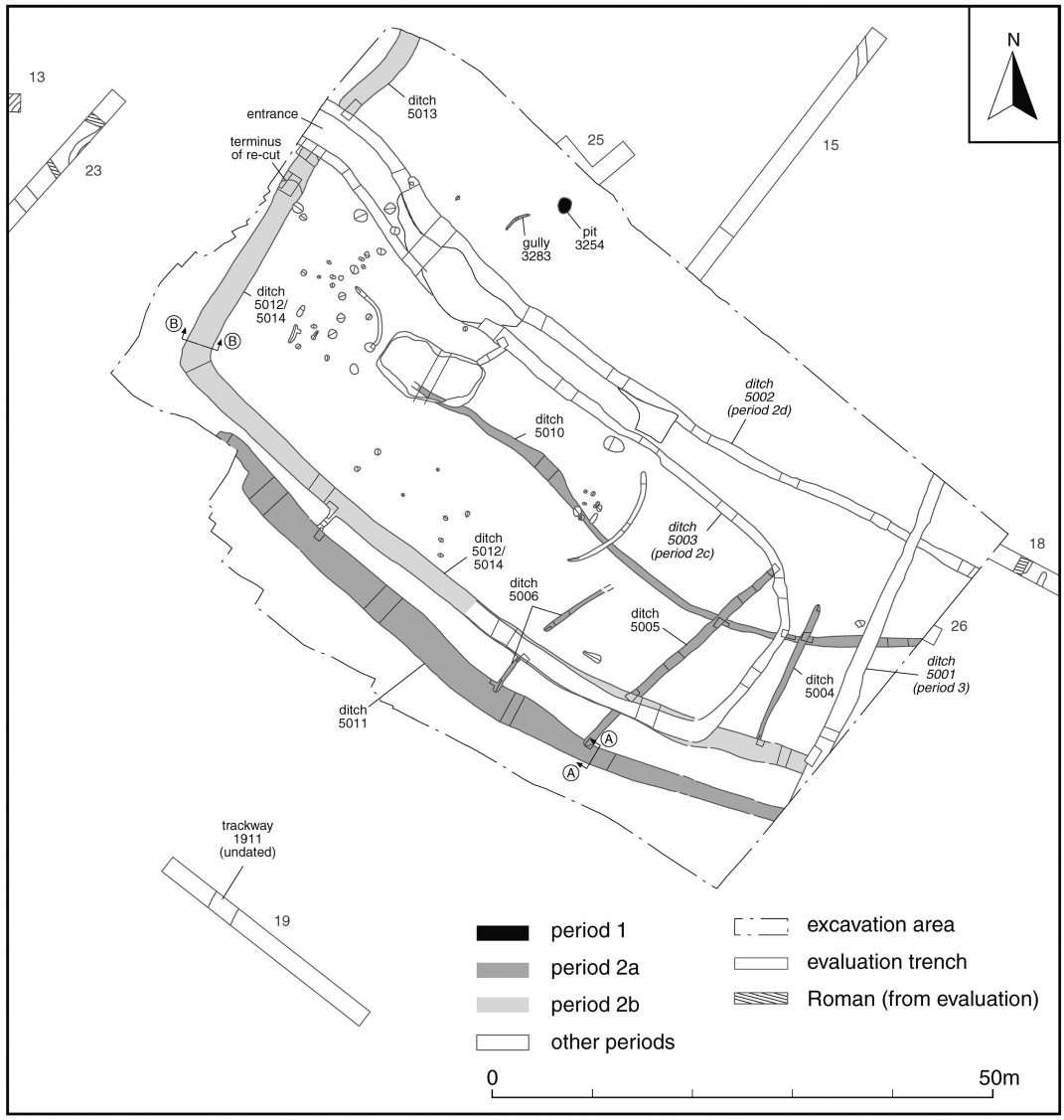

Fig. 3 Periods 1, 2a and 2b phase plan. Scale 1:750.

animal bone and a fragment of quernstone. This focus of deposition in the ditch was also recognised in later periods.

Following the partial infilling of enclosure ditch 5012, its alignment was subsequently re-established by ditch 5014. This recut was identified in a small number of sections across the enclosure ditch where it had survived truncation by later recuts. The ditch was a similar width and also had a wide V-shaped profile, but was shallower than the original ditch, surviving to a maximum depth of 0.85m. For the most part ditch recut 5014 was filled by a homogeneous fill indicative of natural silting. However, at the western corner of the enclosure five distinct deposits were identified, amongst which were a considerable number of large boulders and cobbles deliberately placed along the outer edge of the ditch, presumably

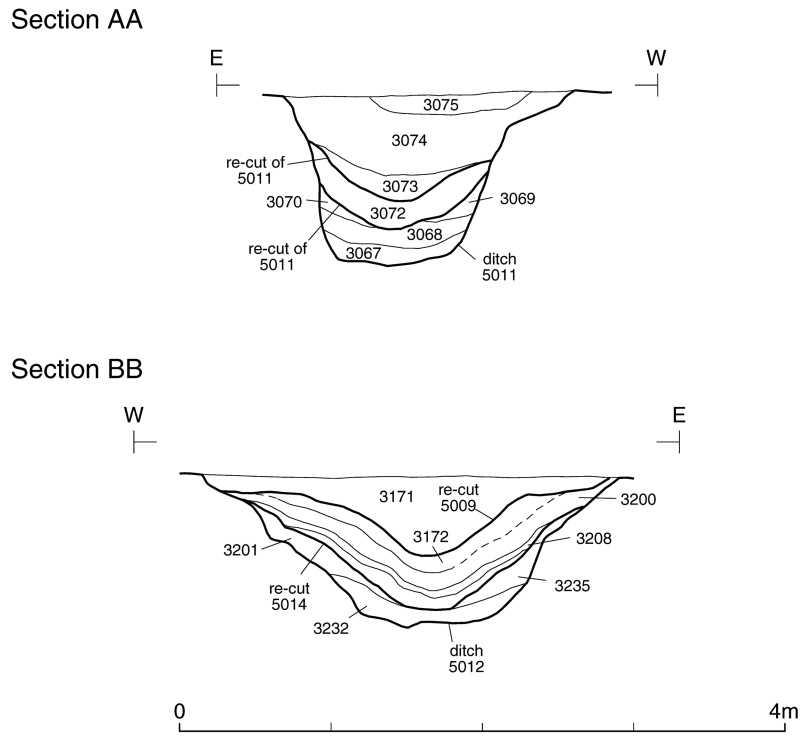

Fig. 4. Sections. Scale 1:50.

to prevent erosion of the corner. Two heterogeneous layers of material within the corner of the ditch may represent occupation debris, separated by a distinct layer of red silt. Only small quantities of pottery and animal bone were recovered from 5014, almost all from the western corner of the enclosure.

Period 2c: small enclosure (third to fourth century AD) (Fig. 5)

After the ditches of the large enclosure had silted up, a smaller enclosure was created at its western corner by the digging of a new ditch 5003 and the partial recutting of the former enclosure ditch 5012 (ditch 5009). The extent of the former enclosure was presumably still evident in the form of a surviving bank. The new enclosure was roughly rectangular in plan and was 65m long and 25m wide. Although undoubtedly constructed as one entity, ditch 5003 was much less substantial than ditch 5009 and was slightly sinuous in plan, varying between 0.7m and 1.8m in width and 0.15m and 0.35m in depth with a broad concave profile. Ditch 5009 was less substantial than its earlier counterpart 5012, with a uniform, broad profile between 1.9m and 2.65m wide and 0.5m to 0.9m deep. There was an entrance 4m wide on the north-west side, while an irregular shallow section of ditch 5003, 5m long, in the north-east side possibly marks the location of a subsidiary entrance. Gully 3111 appears to have been contemporary with enclosure ditch 5009 and may have provided overflow drainage downslope. The gully was 2m long, 0.5m wide and survived up to 0.2m deep. No finds were recovered from its sandy fill.

The artefact-rich fills of the smaller enclosure ditches, in contrast to the largely alluvial fills of the Period 2a and 2b features, appear to be directly derived from activity within the small enclosure. Ditch 5003 contained a single pebbly fill indicative of natural silting and yielded 100 sherds of pottery, and

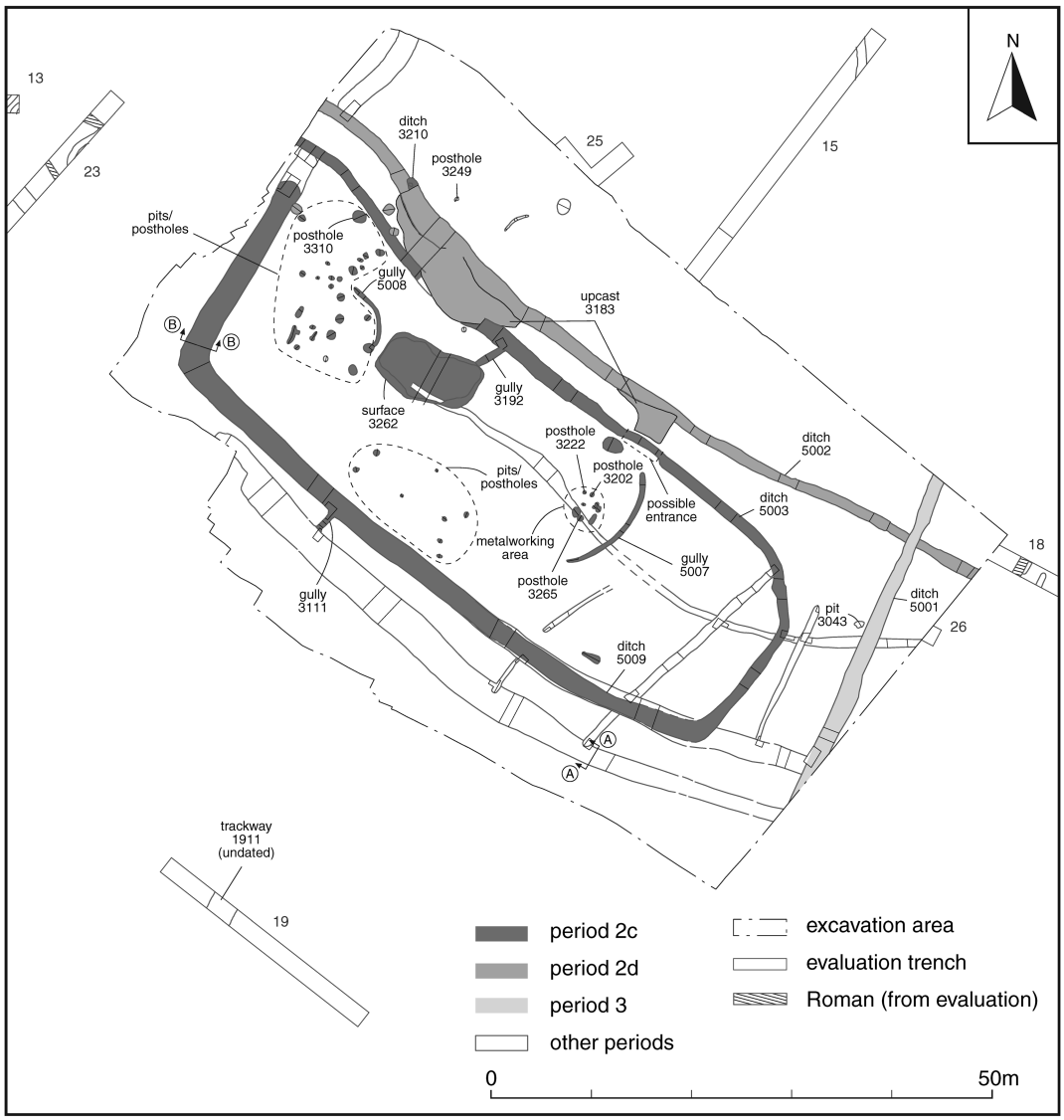

Fig. 5. Periods 2c, 2d and 3 phase plan. Scale 1:750.

small quantities of brick and tile. The large majority of the artefacts from ditch 5003 were found towards the western limit of excavation, with very little material recovered from elsewhere along its length. Ditch 5009 was for the most part filled with homogeneous grey silts. However, in places, charcoal-rich deposits containing animal bone and metalworking slag were encountered. These deposits probably represent discrete dumps of waste material thrown into the ditch, but no spatial patterning was apparent. Evidence of episodes of slumping was also identified, but confined to short, localised stretches of the circuit. Finds recovered from ditch 5009 included 426 sherds of pottery, slag from iron smithing, animal bone, a possible whetstone or polisher, a probable metalworker's iron punch (Fig. 11), fragments of possible copper-alloy binding and an enamelled umbonate (bossed) disc brooch (Fig. 11). Fragments of brick and

tile were also recovered, including one with an incised tally mark in the form of the numeral 'VI' scored prior to firing. Although pottery sherds were found along the entire length of 5009, there was a concentration of 256 sherds 16m south-east of the western corner of the small enclosure in the uppermost fill along with 63 fragments of ironworking slag.

Internal features (Fig. 5)

Features present within the interior of the enclosure included pits, postholes, gullies, an area of metalling and a concentration of features rich in metalworking debris. The collective evidence indicates that the enclosure was occupied by a smithy, with other activities such as butchery occurring within specific zones. There is no evidence that the enclosure served as a settlement.

A curved feature 5007 in the south-eastern part of the enclosure appears to be associated with the metalworking activity represented by a cluster of features immediately to the west. It was 13m long, 0.4–0.5m in width and survived to a maximum depth of only 0.1m. It was filled by a single deposit of silt which contained frequent charcoal inclusions as well as small quantities of coal and slag. The feature conceivably served as a trench for a fence or screen, or a drainage gully immediately outside such a feature.

Within the area defined by gully 5007 were ten pits, which varied in size and shape from 0.1m to 1.25m in plan. Their depths varied from 0.05m to 0.2m. Most contained fills that were rich in metalworking debris, notably slag and hammerscale, with other inclusions of fired clay, charcoal and coal. The natural substrate around a number of these features was visibly scorched, indicating *in situ* activity involving hot materials. None of the features appear to represent hearths, and it is more likely that they represent subsidiary features associated with small-scale blacksmithing using a coal-fired forge. Charcoal samples suggest that hazel and blackthorn/cherry may have been used as kindling, while the slags demonstrate that iron was not smelted on site (see report by Young below). Fragments of smithing hearth cakes, provide further evidence for smithing on site.

There was a general accumulation of floor material within the shallow features suggesting that they went out of use during the life of the forge. A small number of the features were intercutting, intimating a limited degree of phasing within the metalworking activity. Three of the features associated with this activity truncated the Period 2a ditch 5010. A single posthole 3202 accompanying these features contained 400 fragments of burnt bone from unidentified species, as well as a single eel bone.

Situated within the north-western part of the enclosure was surface 3262, a roughly rectangular area of metalling approximately 10m by 5m. The surface was up to 0.3m thick, and was composed of two layers of stones which appear to have been sourced locally since they occur in abundance within the natural glacial till on which the site is located (Fig. 6). It was laid directly onto the natural substrate and also overlay the western end of Period 2a ditch 5010. Several sherds of pottery and a small quantity of tile were recovered from the metalling itself. The surface was sealed by a thin layer of dark brown silt, from which 226 sherds of pottery, fragments of ceramic building material, glass, coal and a small number of fragmentary iron objects were recovered. There was no specific evidence within this assemblage to indicate the use of the surface and no indications for a structure surrounding it. This suggests that it lay either within an insubstantially-founded building, or that it was external hardstanding. Gully 3192, 3m long, appears to have acted as a drainage channel between the metalled surface and enclosure ditch 5003.

Another curving feature 5008 (7m long, 0.3m wide and surviving to a depth of 0.25m) lay adjacent to the north-western end of the metalled surface. A post-pit at the southern end of the feature may indicate a structural function, such as a slot for a windbreak, but contemporaneity between the two features was unproven. The feature contained a single fill, indicative of general silting, from which small quantities of

Fig. 6. Surface 3262, looking south-east. Scales 2m.

animal bone, fired clay, an iron nail, a fragment of quernstone and a substantially-complete greyware jar were recovered.

A cluster of pits, scoops and postholes towards the north-western end of the enclosure were partially enclosed by 5008. These features varied in size and depth, with a maximum depth of 0.55m, but the majority were 0.1m or less. This group included five postholes/post-pits, some relatively substantial in size, that contained *in situ* stone packing. Two broken halves of a quernstone had been utilised as packing in posthole 3310 (Fig. 7). Spatial analysis of these features and in particular the locations of the postholes did not identify any discernible structures, but that is not to rule out their existence. Apart from the five post-pits which had packing material, all of the features within the cluster had single fills indicative of general silting after the features had gone out of use. Two exceptions were located at the south-western periphery of the cluster. These pits contained abundant charcoal and other burnt material, including fragments of building material, and as such, appear to have been intentionally backfilled. Finds from these features were sparse.

To the south of the metalled surface, adjacent to ditch 5009, was a dispersed group of eight shallow, mostly circular, pits or postholes up to 0.6m in diameter or length, and up to 0.15m deep. One of these features could be securely identified as a posthole for stone packing survived around the edge of the cut. All of the features were filled with homogeneous silts. Although collectively these features do not appear to represent a structure, they may represent an area inside the small enclosure where a specific activity was undertaken.

Activity outside the enclosure (Fig. 5)

A small number of excavated features lay outside the enclosure. Ditch 3210, which was aligned parallel

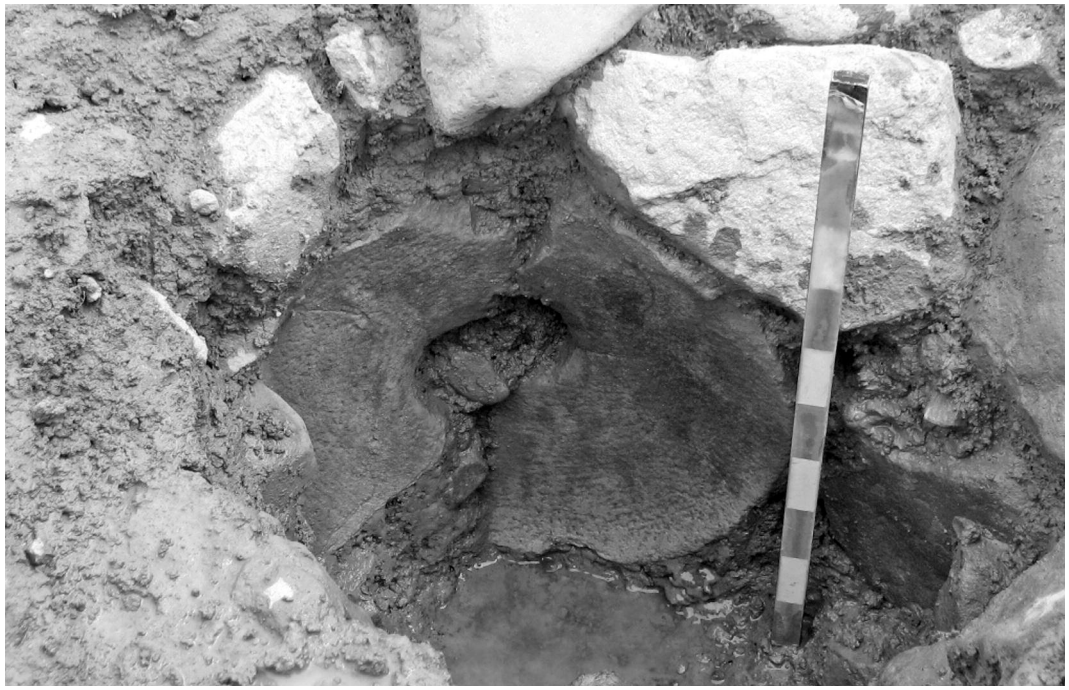

Fig. 7. Period 2c posthole 3310 with broken quern in packing. Scale 0.5m.

to, and to the north of, enclosure ditch 5003 and could be traced for a length of approximately 8m. Although its north-western terminus was revealed, for the most part it appears to have been almost completely truncated by Period 2d ditch 5002, for which it may have been a precursor. Where surviving, ditch 3210 was up to 1.1m wide and 0.75m deep and contained two stony fills, the latest of which produced 22 sherds of pottery. The north-western terminus of ditch 3210 truncated a small undated posthole.

Period 2d: final Roman activity (Fig. 5)

Ditch 5002 was on the same general alignment as the earlier drainage ditches. It cut the south-western entrance terminal of the infilled ditch 5013 of the Period 2b enclosure and extended north-westwards beyond the limit of excavation. The relationship with the ditch terminal cannot be coincidental and presumably the ditch was not fully infilled and the internal bank was still visible. Ditch 5002 was generally 1.3m wide, with a broad concave profile, but towards the north-west it widened to 2.5m. It survived to a depth of 0.55m immediately to the north of metalled surface 3262 but became shallower towards the north-west and south-east.

Deposit 3183, interpreted as upcast from the digging of ditch 5002, partially overlay the infilled Period 2c ditch 5003. Ditch 5002 was filled with homogeneous stony material derived from the natural till substrate. Finds included 112 sherds of pottery, fragments of ceramic building material, and a small quantity of ironworking slag. Although artefacts were present in small quantities along the entire exposed length of ditch 5002, there was a definite concentration to the north of metalled surface 3262, which may have derived directly from the activities carried out there. This would suggest that activity continued after at least partial infilling of ditch 5003.

Two pits cut the infilled enclosure ditches 5003 and 5009 near its north-west corner. Together with a further pit located outside the northern part of the small enclosure, these features appear to respect the alignment of ditch 5002, but they contained no dating evidence.

Roman field system and trackway (second to fourth centuries AD) (Fig. 2)
Some of the ditches identified in the evaluation trenches had very similar profiles: relatively steep sides and flat bases with fills composed of silts or alluvium. A number of ditches in trenches 12, 13, 14, 18 and 23 correspond with the alignment of the enclosure, but from their distribution it was not possible to define any field system pattern, if indeed the features are all contemporary. The undated ditches in trenches 5 and 9 bear similarities to the Roman ditches and may belong to that phase of activity. If so, it would appear that a boundary survived on the same alignment as ditch 907 in trench 9 until at least the post-medieval period, for it can still be seen from earthworks that ploughing took place on one side and not the other.

More concentrated areas of activity outside the enclosure are indicated by features identified in trenches 13 and 23, including ditches aligned to the main enclosure ditch, while an undated curvilinear ditch in trench 23 cut by a gully containing Roman pottery may relate to an earlier period of activity.

Feature 1911 in trench 19, 2.4m wide comprising rounded cobbles laid up to two stones deep, was sunk into the alluvial layer below. Although undated, the size and form of this feature is similar to the Roman trackway recorded at Church Farm, Caldicot (Insole 1997, 72–3). The alignment of 1911 suggests a pathway leading to the enclosure, but its continuation was not present within the excavated area.

Period 3: Post-Roman/Modern

Post-Roman alluvium (Fig. 2)
A distinct layer of pinky-brown clay alluvium, up to 0.4m thick, was identified within the evaluation trenches throughout the central and southern parts of the site. This material sealed the Roman features within trenches 10 and 13 and probable Roman features within trenches 19 and 23, and is therefore of late or post-Roman date.

A single ditch, 5001, located within the south-eastern part of the site (Fig. 5), as well as a series of land drains can be dated to the modern period from finds of glass and pottery.

Undated (Figs 3 and 5)
Three features remain undated; gully 3283, pit 3043 and posthole 3249. Based solely on its location close to Period 1 pit 3254, it is surmised that gully 3283 may also be of Early Bronze Age origin (Fig. 3). Pit 3043 and posthole 3249 (Fig. 5) comprise the only remaining features situated outside the Period 2c enclosure (although they do lie within the larger Period 2b enclosure).

THE FINDS
By E. R. McSloy

Beaker Vessel

Thirty-two sherds (312g) from a single Beaker fineware-type vessel were recovered from pit 3254 (Fig. 8). It is possible that this vessel may have accompanied a burial, but no human remains were present within the pit. The fragmented and incomplete nature of this vessel presents problems of interpretation

and some aspects of its original form are uncertain. The raised and slash-decorated cordon appears to have been located at the base of the vessel's neck. Decoration, which occurs on all sherds above the basal zone, consists of repeated linear and geometrical motifs which are incised, and rows of impressed circular 'dimples'. Such vessels are broadly dated to the period *c.* 2400–1600 BC.

1. Period 1 Pit 3254 (fill 3255). Base and body-sherds from a fineware Beaker. Decorated. Fabric: Beaker grog-tempered type. Light reddish-brown exterior surface. Grey-brown internal surface and margin. Soft with soapy feel and finely irregular fracture. Contains common medium grog (1–2mm), typically brown or buff in colour and sparse mineral inclusions including quartz and plate-like grey slate(?). Hand-made.

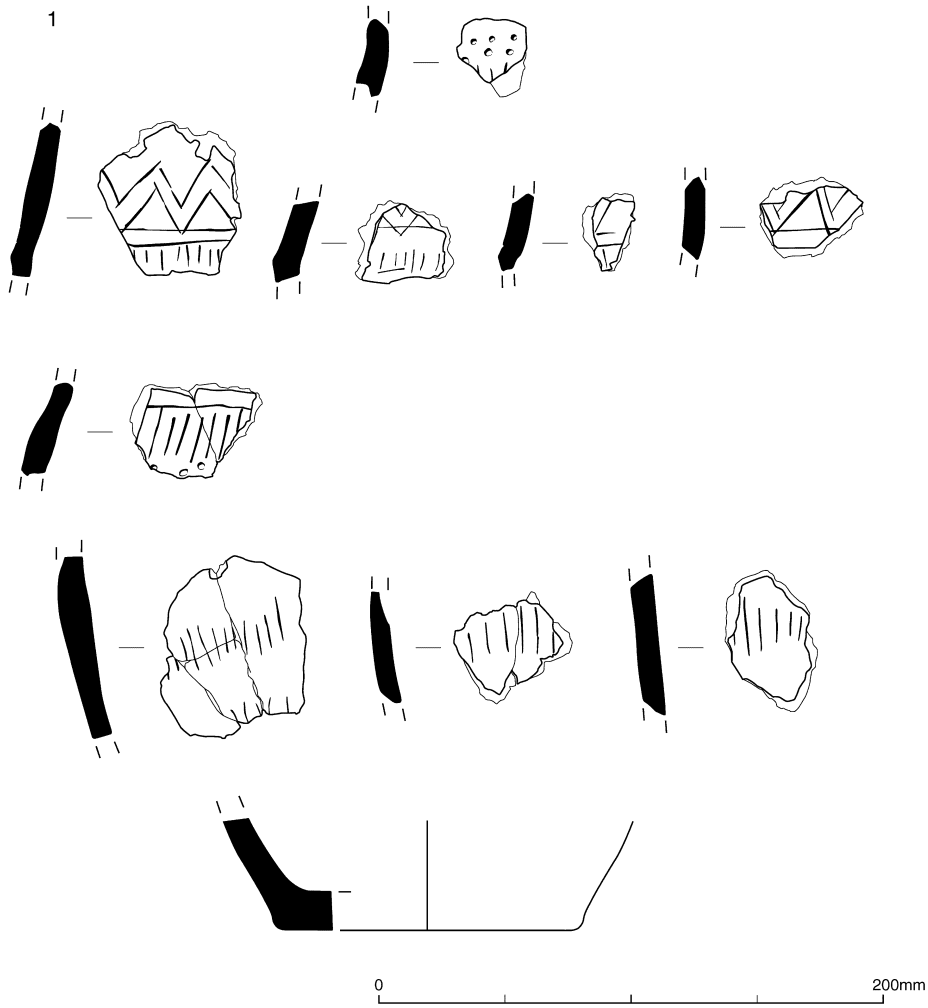

Fig. 8. Sherds from Beaker vessel. Scale 1:3.

Roman Pottery

A total of 1,821 pottery sherds (24.9kg) was recovered (Table 1). The pottery was sorted into fabric types and quantified by sherd count, weight, and estimated vessel equivalent (EVE) for each excavated context. An average sherd weight of 14.5g (13.3g with amphorae sherds excluded) is moderately high for a Roman assemblage and does not suggest high levels of subsequent disturbance. Surface preservation tended to be poor, with slipped fabrics including samian and Oxfordshire red-slipped wares suffering moderate or high levels of surface loss.

The majority of the pottery was recovered from ditch features (80 per cent by sherd count), primarily ditch 5011 of Period 2a and the ditches of the Period 2b and 2c enclosure 5012/5013 and 5003/5009. A moderately large group (13 per cent by count) was also recovered from layers, mainly occupation layer 3261 overlying metalled surface 3262. Only 1.4 per cent by count of the pottery was derived from pits.

Table 1: Roman pottery quantification by fabric

	Sherd count	Weight (g)	Rim EVEs	%Rim EVEs
Native-type wares				
LI	62	718	0.90	4.02
QZ	1	4	0.02	<1
sub-total	63	722	0.92	4.11
Local Romano-British wares				
LOC BS	191	2,717	2.70	12.06
LOC GW	37	792	0.47	2.10
SWG	874	12,359	10.77	48.10
LOC OX	104	1,163	1.05	4.69
OXIDcs	1	2	–	–
CAER	1	10	–	–
LOC MORT1	1	57	0.07	<1
LOC MORT2	1	166	0.05	<1
sub-total	1,210	17,266	15.11	67.55
Regional Romano-British wares				
DOR BB1	463	5,149	4.92	22.00
OXF RS	39	532	1.15	5.14
OX WH	1	18	0.07	<1
SAV GT	3	152	0.12	<1
SVW OX	5	122	0.08	<1
GROG	2	22	–	–
WH	1	1	–	–
sub-total	514	5,996	6.34	28.34
Imported wares				
SAMcg	1	15	–	–
SAMsg	22	162	0.35	1.56
BAT AM	11	785	–	–
sub-total	34	962	0.35	1.56
Total	1,821	24,946	22.72	

Where appropriate (primarily for continental types and Romano-British traded wares), reference is provided to National Roman Fabric Reference Collection coding (Tomber and Dore 1998).

Native-type wares

The quantities of limestone-tempered fabrics are representative of a class that is well known from South Wales and the subject of two studies (Spencer 1983; Allen 1998). The tradition shares characteristics of form with similar wares from the Mendips/Bristol region, although recent work suggests a local origin for at least some of the Welsh material (Webster *et al*. 2006, 80). It is dated mainly to the early and mid first century AD on the basis of its occurrence at military and other sites in South Wales. At Crickhowell Road material of this type was largely residual in second-century and later-dated contexts. This type mostly occurs as body-sherds from thick-walled vessels, possibly 'hammer-head' storage jar forms described by Spencer (1983, fig. 3). A pedestalled bowl in this fabric from Period 2b enclosure ditch 5012 (Fig. 9, no. 3) is reminiscent of first-century AD 'Belgic' forms and is a notable occurrence in a fabric type more often seen as jars.

A single sherd (Fig. 9, no. 2) in a hand-made, coarse quartz-tempered fabric may be equivalent to Native ware fabric B at Usk (Webster 1993, 230–2).

LI *Limestone-tempered*. Hand-made and wheelthrown. Soft. Dark-grey throughout, with common voids from leached calcareous inclusions.

QZ *Quartz and sandstone-tempered.* Hand-made. Hard. Dark grey-brown throughout. Common coarse quartz and granular (sandstone?) inclusions.

Local Romano-British wares

This group accounts for the majority of pottery recovered (67.5 per cent EVEs total). The assemblage from Rumney Great Wharf, a site less than 2 kilometres distant, was similarly dominated by local wares, which included a comparable range of grey, black and oxidised-firing variants (Fulford *et al*. 1994, 189). The bulk of material present consists of reduced coarsewares in the South Wales greyware tradition. This type has been discussed fully by Webster in relation to large groups from Usk (Webster 1993, 232–55). Kiln sites manufacturing comparable material are known from Caldicot (Barnett *et al*. 1990) and Llanedeyrn, Cardiff (Vyner and Evans 1978).

The material in standard South Wales greyware fabric SWG conforms closely with previously published material: most abundant are jars (85 per cent of identifiable vessels by EVEs), primarily of the medium or wide-mouthed classes, commonly with scored wavy line decoration. Other forms include bowls (8 per cent) mainly of wide, flat-rim form possibly derived from Severn Valley ware types; flat-rim forms copying Black-Burnished ware classes, and one example of a foot-ring bowl apparently in imitation of samian form Drag. 37. One wide, curved-sided bowl (Fig. 9, no. 8) is unusual in featuring an applied U-shaped handle, a feature not known from published examples in South Wales greywares but found occasionally with Severn Valley ware (Evans 2000, fig. 26, BT9). Plain-rim dishes, lids and detached handles (probably from handled jars) make up the remainder of identifiable forms. Reduced ware variants (LOC BS) occur largely in forms (jars, dishes and lids) comparable to those among the more common greyware type SWG. The occurrence of forms including platters (Fig. 9, no. 7), hemispherical flanged bowls and a jar sherd with rusticated decoration are suggestive of a second-century AD date for some material of this type.

Coarser and un-slipped oxidised wares (LOC OX) make up a small proportion of the local pottery component. Some vessels occurring in this fabric comprise versions of the medium and wide-mouthed jars and utilitarian dishes (Fig. 9, no. 6) found among the reduced wares. This supports Webster's suggestion for occasional firings of South Wales 'greywares' in oxidising conditions (Webster 1993, 233). Some forms (Fig. 9, nos 5 and 7), however, are outside of the typical greyware repertoire and

suggest attempts to produce 'fineware' type forms. Bowl no. 5 is reminiscent of vessels in Caerleon ware loosely copying samian forms Drag. 38 or Drag. 44 (Webster 1993, fig. 119, nos 10.1–3). Caerleon ware, which is dateable to the Hadrianic-Antonine period occurs as a single sherd, recovered as a residual find in Period 2c layer 3262.

Dateable elements from among the South Wales greywares are few. The type forms the majority of pottery in most larger groups associated with ditch fills of Periods 2a–c. It may be significant that the relatively large assemblage from the Late Roman occupation deposit 3262 included only sparse quantities of South Wales greywares (20 sherds from a total of 224 or 9 per cent). Sherds with clay rustication, (from Period 2a–c ditch fills), and the previously mentioned bowl copying samian from Drag. 37 (from a Period 2c ditch fill) probably date to the second century. Jars are the most common forms, but only the small number of vessels with bifid-rims are suggestive of a particular date (they are typical of the third and fourth centuries AD). The remainder of vessels in this fabric are only broadly dateable to the later first to fourth centuries AD, though it might be expected that flat-rim forms following Black-Burnished ware share similar dating with equivalent Black-Burnished ware forms and thus probably date to the second or third centuries.

Only two mortaria were recovered, both of local origin (Fig. 9, nos 9–10). These are likely to be products of small workshops deriving inspiration from mortaria produced at the larger centres at Usk or Caerleon in the early or middle years of the second century. Aspects of the fabric and the forms (vessels with curving flange and bead level with the flange) compare with material from Cowbridge (Evans *et al.* 1996, 173–4) and from Usk (Hartley 1993, 392–3). The reduced firing of no. 10 is unusual and was perhaps unintentional.

LOC BS	*Local dark grey firing (South Wales greyware variant)*. Wheelthrown. Hard. Dark grey throughout. Sparse quartz inclusions with black-edged voids from burnt-out organics. Typically the fabric has dark grey-firing with red-brown margins and mid-grey core. This fabric exhibits a tendency to laminate.
LOC GW	*Local hard sandy greyware (South Wales greyware variant).* Wheelthrown. Hard. Mid or lighter grey throughout. Common fine quartz inclusions, with sparse dark grey or purple-brown granular inclusions (sandstone?).
SWG	*'Standard' South Wales greyware fabric.* Wheelthrown. Hard. Mid grey throughout or with brown margins. May have darker grey wash. Sparse quartz inclusions. Typically slightly micaceous.
LOC OX	*Local oxidised type.* Wheelthrown. Hard. Orange throughout or with grey or buff-coloured core. Sparse quartz inclusions and sparse red-brown sandstone. May be slightly micaceous.
OXIDcs	*Local(?) oxidised flagon fabric with cream-coloured slip.* Wheelthrown. Red-brown margins with cream-coloured surface slip. Sparse quartz inclusions.
CAER	*Caerleon ware.* Fine orange-slipped fineware fabric (Webster 1993, 255–63).
LOC MORT(1)	*Local oxidised (cream-slipped) mortaria.* Wheelthrown. Hard, buff-orange throughout with some traces of pinkish surface slip. Sparse fine quartz; sparse pinkish sandstone(?) and sparse red-brown iron oxide inclusions. Little of the trituration grit, which consists of opaque white quartz, 4mm, survives on the one sherd of this type recovered.
LOC MORT(2)	*Local grey-firing mortaria.* Wheelthrown. Hard, mid grey throughout with darker grey surface wash. Common fine quartz and sparse dark-grey or purple-brown clay pellet or mineral (?sandstone) inclusions, 2–3mm. Trituration grit consists of white or pinkish quartz, 2–4mm.

Regional Romano-British wares

Romano-British wares originating outside of the South Wales region make up 28.3 per cent (EVEs total) of the assemblage. As is commonly the case for southern Wales, Dorset Black-Burnished wares (DOR BB 1) have a significant presence (22 per cent of the total by EVEs). The type occurs throughout the main phases of activity, but appears more numerous among late groups, in particular Period 2c occupation layer 3262 where it constituted 70 per cent of the pottery by sherd count. 'Durotrigian' type forms in Black-Burnished ware, which are characteristic of early production, were not identified, and most or all material dates to the main 'export' period for this type, after *c*. AD 120. Identifiable forms comprise mostly jars (57 per cent by EVEs), bowls with flat or dropped flanged rim and dishes with plain or plain with grooved rims. The majority of jars are those characteristic of later production phases, after the mid third century, and consist of vessels with wide-flaring rims and obtuse-angled lattice decoration. The other forms are mainly of later type consisting of plain-rim dishes and conical flanged bowls. Possible exceptions, probably dating before the mid third century AD, are flat-rim bowls from Period 2a, 2c and 2d ditch fills.

Oxfordshire type wares are well-represented among later Roman groups, in particular among material from layer 3262. Mortaria occur as at least three examples of wall-sided mortaria (Young 1977, form C97) in red-slipped ware and as one example of indeterminate type in whiteware fabric OXF WH. Identifiable forms in red-slipped type OXF RS, comprise bowls in imitation of samian types (Young 1977, forms C45 and C51). All are dateable broadly to after *c*. AD 240.

Types less well represented include Severn Valley wares and grog-tempered fabrics; the latter is not a tradition current in Wales during this period. Three thick-walled sherds in a distinctive grey-firing fabric closely resemble Savernake ware from north-east Wiltshire. This fabric is not a common find on South Welsh sites; none being recorded from Usk. This is perhaps surprising given its occurrence both at Gloucester (Ireland 1983, 99) and Sea Mills, Bristol (Timby 1987, 85) and it seems likely that small quantities may have travelled to the area during the mid/later first or early second centuries AD. Severn Valley ware forms a minor component in this assemblage, which is typical for the area and is probably the result of the availability of South Wales greywares. The sole form identifiable is a wide bowl with flat rim (Webster 1976, 31–3; Type F).

DOR BB1	Black-Burnished Ware Category 1 (BB1). Fabric described by Tomber and Dore (1998, 127). Welsh material discussed by Webster (1993, 264–85).
OXF RS	*Oxfordshire Red-slipped ware.* Fabric described by Tomber and Dore (1998, 174). Welsh material discussed by Webster (1993, 311–15).
OXF WH	*Oxfordshire whiteware (mortaria).* Fabric described by Tomber and Dore (1998, 174).
SAV GT	*Savernake type ware.* Fabric described by Tomber and Dore (1998, 191).
SVW OX	*Severn Valley ware.* Fabric described by Tomber and Dore (1998, 148).
GROG	*Unsourced grog-tempered fabric.* Dark grey-brown throughout. Soft, with soapy feel. Common grog or clay pellet, 1–2mm, and sparse quartz.
WH	*Unsourced white-firing fabric.* White/cream-couloured throughout. No visible inclusions. Thin-walled sherds, possibly denuded Lower Nene Valley or Cologne colour-coated ware.

Imported wares (identification and comment on the samian by P. V. Webster)

Continental material from the site is restricted to finds of samian and Baetican (Southern Spanish) amphorae, the latter occurring only as body-sherds. There are 22 sherds of samian (175g) (Table 2). The number of vessels is small and restricted almost entirely to vessels from Central Gaul, an indicator of a largely second-century date for the assemblage. With the exception of a probable Drag. 68 jar from Period 2c occupation layer 3262 and a probable Drag. 37 bowl rim from a Period 2d ditch, the samian occurs as

plain forms. Common second-century forms predominate. It is unwise to draw too many conclusions from such a small collection, but the proportion of decorated to plain ware is low as would be expected at a rural site of relatively lowly status.

The presence of forms Drag. 31R and Drag. 43 indicate activity well into the second half of the century. The absence of pieces certainly from the manufacturing centre at Les Martres-de-Veyre, active principally *c*. AD 100–120, may be noted, but in such a small assemblage which includes only a single sherd of South Gaulish samian, this may be fortuitous. In general, the samian would suggest activity at the site from the early second century, while the coarse pottery demonstrates that activity continued beyond the end of the samian importing period.

Stamped vessel

Form 33, Central Gaulish, six joining fragments. The basal sherds include part of a stamp reading ADVO, probably originally Advocis for Advocisus of Lezoux. For a complete version of this stamp, see Jackson and Potter 1996, fig. 142, 1–2 (Stonea). *c*. AD 160–190. Period 2c Pit 3375 (fill 3376).

LGF SA South Gaulish (La Graufesenque) samian. Fabric described by Tomber and Dore (1998, 28).
LGF SA *Central Gaulish (Lezoux) samian.* Fabric described by Tomber and Dore (1998, 31–2).
BAT AM *Baetican (Southern Spanish) amphora.* Fabric described by Tomber and Dore (1998, 84–5).

Discussion of the Roman pottery (see Table 3)

Period 2a: drainage features

Deposits allocated to this period produced 553 sherds, weighing 6619g, the majority from ditch 5011 and its recuts. Possible indications of activity as early as the later first or early second century are provided

Table 2: Samian quantification

Context*	Samian source	Form	Max. no. vessels	Sherds	EVEs rims	EVEs bases	Weight (g)	Probable date AD
E809	SG	?18/31R	1	1	–	0.2	15	90–110
E2113	?CG	31R	1	1	–	–	1	160–200
E2207	CG	31R	1	1	–	–	12	160–200
3033	CG	?18/31R	1	1	–	–	1	120–150
	CG	bowl	1	1	–	–	5	120–200
3095	CG	?31	1	1	–	0.15	37	150–200
3151	CG	?31R	1	1	–	–	17	160–200
3171	CG	33	1	1	–	–	2	120–200
3207	CG	sherd	1	1	–	–	1	120–220
3211	CG	?37	1	1	0.05	–	7	120–200
3261	CG	?43	1	1	–	–	7	170–200
3262	CG	18/31	1	1	0.05	–	5	120–150
	CG	?68	1	1	–	–	13	140–200
	CG	sherds	1	1	–	–	9	120–200
3376	CG	33**	1	1	0.25	0.50	43	160–190

* contexts prefixed with E relate to the evaluation

** stamp ADVO] – Advocisus of Lezoux

by sherds of Savernake-type grogged ware (SAV GT) and limestone-tempered ware (LI). South Wales type greyware sherds (SWG) with clay rustication from second recut deposit 2113, probably date to the first half of the second century. Central Gaulish samian occurs in forms (Drag. 31R), suggestive of dating *c*. AD 160–200 from two deposits, recut fills 2113 and 3151. Black-Burnished ware forms include bowls with flat rims and dishes with bead-rims or plain forms with groove below the rim, all of which probably date before the mid third century.

Viewed together the pottery suggests dating up to the early/middle third century AD. Jar forms in Black-Burnished ware with obtuse-angled lattice decoration are the latest pieces. The absence of Oxfordshire red-slipped ware (OXF RS) is a good indication of dating before the later third century.

Period 2b: large enclosure

Only 169 sherds (2977g) of pottery were recovered from the fills of the large enclosure ditches. Composition and dating are for the most part comparable with that from Period 2a, but with rather better indications for activity between the first or early second centuries. The largest group, from fill 1708 of

Table 3: Distribution of Roman pottery fabric types by period (shown as sherd count / rim EVEs)

	Period 2a	Period 2b	Period 2c	Period 2d
Native-type wares				
LI	7 / –	43 / 0.9	9 / –	2 / –
QZ	– / –	– / –	1 / 0.02	– / –
Local Romano-British wares				
LOC BS	69 / 1.10	42 / 0.64	78 / 0.86	10 / 0.33
LOC GW	18 / 0.07	– / –	15 / 0.25	3 / 0.15
SWG	286 / 3.90	70 / 1.26	400 / 4.32	73 / 0.94
LOC OX	31 / 0.27	5 / –	61 / 0.78	3 / –
OXIDcs	– / –	– / –	1 / –	– / –
CAER	– / –	– / –	1 / –	– / –
LOC MORT1	– / –	– / –	– / –	1 / 0.07
LOC MORT2	– / –	– / –	1 / 0.05	– / –
Regional Romano-British wares				
DOR BB1	129 / 1.20	9 / 0.08	298 / 3.39	11 / 0.27
OXF RS	– / –	– / –	38 / 1.06	– / –
OX WH	– / –	– / –	1 / 0.07	– / –
SAV GT	2 / –	– / –	1 / 0.12	– / –
SVW OX	3 / –	– / –	1 / 0.08	– / –
GROG	1 / –	– / –	– / –	1 / –
WH	1 / –	– / –	– / –	– / –
Imported wares				
SAMcg	3 / –	– / –	17 / 0.30	2 / 0.05
SAMsg	– / –	– / –	– / –	– / –
BAT AM	3 / –	– / –	1 / –	7 / –
Total	553 / 6.54	169 / 2.88	924 / 11.30	113 / 1.81

ditch 5012 comprises a mix of local reduced and Black-Burnished wares and includes flat-rim bowl suggestive of second to third-century dating. Also from ditch 5012 is a substantially complete vessel in native-type limestone-tempered fabric (Fig. 9, no. 3).

Period 2c: small enclosure

Pottery relating to the small enclosure represents the largest group from any of the periods, with a total of 924 sherds recovered, the majority (426 sherds) from ditch 5009.

The large assemblage from ditch 5003 contains Oxford red-slipped ware, suggestive of dating after *c*. AD 270. Comparably late jar forms in Black-Burnished ware are also present. The composition of the large group from ditch 5009 differs from ditch 5003 and is closer in character to material from Period 2b, while Black-Burnished ware conical flanged bowls, date to after *c*. AD 250. Oxfordshire red-slipped wares are entirely absent. An earlier emphasis, prior to the mid third century, is apparent in some deposits, which may be owing to the redeposition of material, although the coherent dating of some of these groups should be noted. These produced Central Gaulish samian, a mortarium of local type (Fig. 9. no. 10) and South Wales greyware forms including clay-rusticated jars and a bowl in imitation of samian form Drag. 37. A complete disc brooch is also consistent with a second-century date (Fig. 11).

A further 226 sherds were recovered from the silt layer overlying the metalled surface 3262. In composition this group differs markedly from the others, comprising mainly Black-Burnished ware (157 sherds or 69.5 per cent) and with Oxfordshire red-slipped ware having a significant presence (33 sherds or 14.6 per cent). Forms in Black-Burnished ware are the typically Late Roman (after *c*. AD 250/70) suite of cooking pots with wide, flaring rims, conical flanged bowls and plain-rimmed dishes. Oxfordshire red-slipped wares occur as bowls (Young types C45 and C51) and wall-sided mortaria (Young C97), forms produced continuously between *c*. AD 240–400 (Young 1977, 158; 160; 173).

Period 2d: Final Roman Activity

A total of 112 sherds (2539g) was recovered from ditch 5002, the majority consisting of body-sherds in local reduced or Black-Burnished wares, providing only broad dating, between the second and fourth centuries. Sherds of samian, Baetican amphora and limestone tempered fabric must be considered residual.

Conclusion

The composition of the Roman assemblage appears fairly typical for the region. Local wares predominate as South Wales greywares and related ware types. Regional Romano-British wares were also common in the form of Dorset Black-Burnished wares and fineware/specialist wares from Oxfordshire. Aspects of the composition match that of the nearby site at Rumney Great Wharf, an assemblage drawn primarily from a ditch dated *c*. AD 250–300 (Fulford *et al*. 1994, 192). The similarities, in particular the prevalence of Dorset Black-Burnished ware, are greatest among the later (Period 2c) groups and in particular the sizeable group associated with occupation layer 3262. The representation of Dorset Black-Burnished ware across Periods 2c/d is however significantly less than for the Rumney Great Wharf ditch group, and must be owing to the discrete character of the latter and its date range which coincides with the major period of expansion for this ware (Gillam 1976, 59).

Chronological separation of the pottery proved to be difficult, owing to the long-lived and fairly conservative nature of the local coarseware types and also as the result of the nature of the deposits and evidence for repeated recutting of ditches. The chronological markers present in the pottery assemblage provides evidence for activity spanning the later first century AD to the late third or fourth centuries, perhaps with the main emphasis between the later second and third centuries. The moderately abundant

presence of Oxfordshire red-slipped ware, a type not recorded at Rumney Great Wharf, suggests continuance of activity into the fourth century. There was, however, no evidence for activity extending into the second half of the fourth century, which elsewhere in the region is indicated by Late Roman shell-tempered wares and/or certain Oxford red-slipped ware bowl forms.

The Roman assemblage is heavily dominated by jars (64 per cent rim EVEs) with the remainder including bowls (19 per cent); dishes (9 per cent), lids (7 per cent) and mortaria (2 per cent). This reflects an assemblage of utilitarian character and the overall the impression is of a lower-status site with apparently limited requirement for serving or 'display' vessels. It should be noted, however, that this analysis is drawn from what is likely to be a peripheral area of a more extensive site.

Catalogue of illustrated Native-type and Roman pottery (Fig. 9)

2. Period 2c ditch 3031 (fill 3032). Hand-made native-type jar with short-everted rim. Fabric QZ.
3. Period 2b ditch 3060 (fill 3062). Wheelthrown Belgic-style bowl with short pedestal.
4. Period 2a Generic Ditch 5010 (fill 1705). Bowl possibly imitating samian Drag. 38 or Drag. 44. Fabric LOC OX.
5. Period 2c ditch 3063 (fill 3054). Hemispherical flanged bowl. Fabric LOC OX.
6. Period 2c ditch 3018 (fill 3017). Dish with flat rim and chamfered base angle. Fabric LOC OX.
7. Period 2c ditch 3063 (fill 3054). Platter or bowl with cavetto zone and internal moulding. Rouletting to body. Fabric LOC BS.
8. Period 2d ditch 3187 (fill 3211). Wide, curved-sided bowl with flat rim and applied, U-shaped handle. Fabric SWG.
9. Period 2d ditch 3187 (fill 3211). Mortarium with bead and curved-flange. LOC MORT1.
10. Period 2c ditch 1707 (fill 1704). Mortarium with grooved bead and curved-flange. LOC MORT2.

Worked Flint

Five pieces (35g) of worked flint were recovered. A single broken scraper came from Period 1, Pit 3254 in association with Beaker pottery. A second scraper or retouched flake was an unstratified find from the evaluation. The remainder, consisting of unutilised flakes occurred residually in Roman features. Raw material consists of unpatinated grey and honey-coloured flint from an unknown, though clearly non-local source. None of this material is inherently dateable, though there is no reason to doubt that the broken scraper from Pit 3254 is contemporary with the associated Beaker pottery.

Stone Artefacts

Three items of worked stone, all of which derived from Roman (Period 2) contexts, are described below. Further quantities of possible stone roofing comprise six flat fragments of Old Red series sandstone, and two burnt sandstone fragments. The provisional identifications of stone type are by Fiona Roe.

Fragments of two rotary querns (Fig. 10, nos 1–2) were made from coarse-grained sandstone of the Old Red series, possibly sourced locally from deposits at Llanishen, Cardiff. Stone no. 1 has been reused as packing material in a Period 2c posthole (Fig. 7); the domed profile and side handle socket are features of later Iron Age or early Roman dating. The second stone (no. 2) lacks a spindle perforation or other

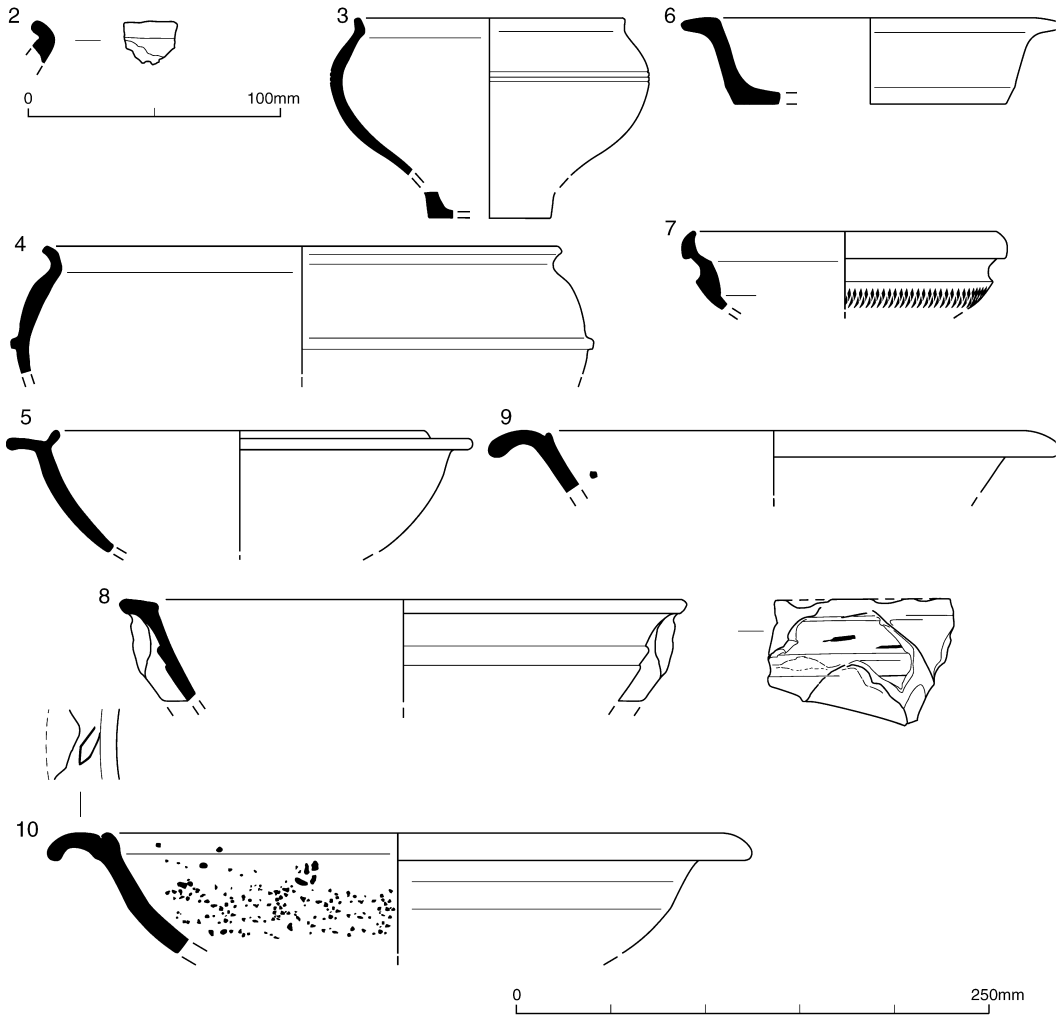

Fig. 9. Native-type rim-sherd (no. 2), scale 1:3. Roman pottery (nos 3–10). Scale 1:4.

features and probably represents an unfinished quern lower stone. Parallels may include the stone cylinders exhibiting varying degrees of working which are known from Roman quern production sites, for example from Lodsworth, West Sussex (Peacock 1987, fig. 2). The presence of this piece would appear to suggest that the quarry/manufacturing site lay reasonably close by.

Not illustrated, from Period 2c ditch 3031 (fill 3033). Fine-grained micaceous stone (possibly an erratic of uncertain derivation). Pebble-sized fragment with smoothed surface. Possibly a broken whetstone or polisher. Length 45mm; width 30mm.

Catalogue of illustrated stone artefacts (Fig. 10)

1. Period 2c posthole 3310 (fill 3311). Old Red sandstone. Two fragments joining to form complete upper stone from rotary quern of beehive-shaped form. In profile this stone is asymmetrical, with a pronounced slope to its upper face. There is a fairly shallow-set socket in

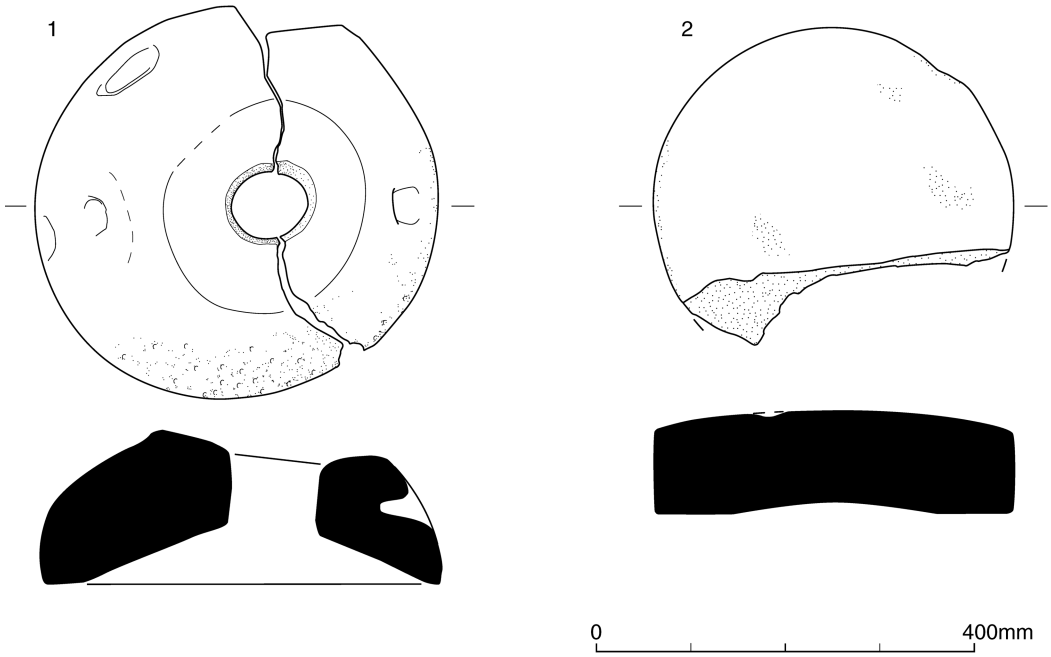

Fig. 10. Querns. Scale 1:8.

the side for a horizontal radial handle. The surfaces are pecked, worn smoother across the grinding surface, which is concave (angled at approximately 10°). Diameter: 380–400mm; thickness: 115–35mm; diameter of central perforation: 90mm.

2. Period 2a ditch 5011 (fill 3053). Old Red sandstone. Large (approx. two-thirds complete) fragment from ?lower stone from rotary quern. The surfaces are pecked. There is no central perforation, indicating that this is unfinished. It was presumably rejected during manufacture and reused. Diameter: 370mm; thickness: 95–100mm.

Ceramic Building Material

Small quantities (55 fragments, weighing 6094g) of ceramic building material were recovered from 15 deposits. The majority derives from deposits attributed to Periods 2–3, and is associated with pottery suggesting later Roman dating, after *c*. AD 250/70.

A single fabric, is represented, as follows: red-orange throughout; hard, with irregular fracture and sandy or harsh feel; heavily sanded with abundant quartz and small red-coloured sandstone lumps, 1–2mm.

Roofing tile of flanged (tegula) or curving (imbrex) forms are represented, as well as brick (Table 4). Further undiagnostic tile fragments between 15–20mm in thickness probably derive from tegulae. Very fragmentary pieces, where thickness cannot be determined, are categorised as miscellaneous ceramic building material (CBM). Of note is a brick fragment from Period 2c Ditch 5009 (fill 3056) with a probable tally mark. This takes the form of the numeral ‘VI’, which is scored prior to firing into the upper surface, close to a corner.

Table 4: Roman brick and tile quantification (shown by count and weight)

	Brick	Imbrex	Tegula	Tile	Misc	Total
Evaluation	–	–	–	11 (909g)	6 (107g)	17 (1,016g)
Period 2a	–	1 (280g)	–	–	–	1 (280g)
Period 2c	2 (918g)	3 (190g)	2 (748g)	4 (409g)	13 (678g)	24 (2,943g)
Period 2d	3 (1114g)	–	3 (392g)	–	7 (349g)	13 (1,855g)
Total	5 (2,032g)	4 (470g)	5 (1,140)	15 (1,318g)	26 (1,134g)	55 (6,094g)

Although small, the ceramic building material assemblage is homogenous in character and discretely dated. Whilst no evidence for a substantial structure in the Roman architectural tradition was identified within the area excavated, it seems likely that such a structure was located in the vicinity and was the source of the material recovered.

METALWORK

A total of 25 metal items, comprising 22 of iron and 3 of copper alloy, were recovered. A full catalogue of all items, comprising mainly iron binding strip fragments, nails and fragmentary items is included in the archive. A small number of identifiable items are illustrated.

Copper alloy (Fig. 11)
Non-illustrated copper-alloy finds include 6 fragments of copper alloy strip, 8.5mm wide, curving in section and plain from Period 2c ditch 1707 (fill 1704). Some fragments join to form part of a circlet, approximately 200mm in diameter. Possibly binding or edging for wooden or other perishable vessel.

1. Period 2c ditch 3063 (fill 3054). Enamelled umbonate (bossed) disc brooch. Complete, except for a small portion of the pin and catch-plate. Copper alloy with red and green (appearing) enamel. There are traces of tinning to the outside edge of the umbo and the outer border. This is an example of the more commonly occurring type with two concentric zones of triangular enamelled cells, radiating from the centre. There are four peripheral lugs, those on the same line as the pin being larger and that adjacent to the hinge perforated. The South Welsh distribution of this type has been discussed by Janet Webster, who notes (five) examples from Caernarfon, Caerwent, Caerleon and Usk (Webster 2003, 303–4). Hattatt suggests second-century dating for the type (Hattatt 1987, 179). Length: 32.5mm; width: 27.3mm.

Iron (Fig. 11)
Non-illustrated iron finds include a double-spiked loop, 147mm long and 37mm wide at the loop, from Period 2c Pit 3181 (fill 3182). Structural fittings of this type are common finds from Roman sites (Manning 1985, 130–1).

2. Period 2c ‘Generic’ ditch 5009 (fill 3331). Square-sectioned and tapering iron object. Probably a metalworker’s punch. There is a similar example from Carmarthen (Scott 2003, fig. 8.8, no. 5). The head rounded, though shows no signs of the battering noted on some Roman examples

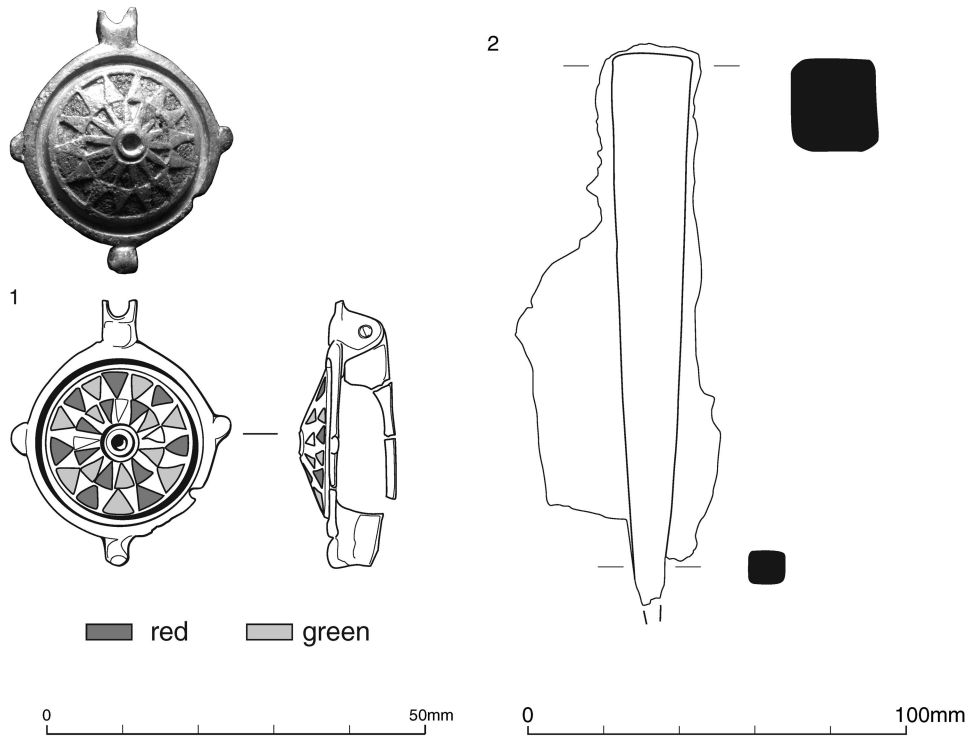

Fig. 11. Disc brooch (no. 1), scale 1:1. Iron metalworker's punch (no. 2). Scale 1:2.

(Manning 1985, 9–10). There are indications of damage (splintering) of the tip, possibly from use. Length: 153mm; width (at head): 24.5mm; (at tip): 8mm.

ARCHAEOMETALLURGICAL RESIDUES

By T. P. Young

Archaeometallurgical residues were mainly contained in deposits assigned to Period 2c, although deposits of Periods 2a, 2b and 2d also produced very small quantities of slag. Material from the enclosure ditches mainly comprised macroscopic slags, whereas the material from the internal features was dominantly microscopic residues. The residues were almost entirely derived from the working of iron (smithing) in a coal-fired forge. In addition, small quantities of microscopic residues and roasted ore were suggestive of iron smelting.

All materials were examined visually with a low powered binocular microscope. Macroscopic slag pieces were individually weighed, described and recorded to a database. Assemblages of microresidues were given a summary description and weighed in bulk. Detailed analysis was undertaken of representative samples of both macro- and micro-residues from the Period 2c smithy. A fragment of iron ore from context 3180 Period 2d was also subject to analysis. Microresidues were picked by hand from the bulk sample, and then sub-sampled for chemical analysis and for microstructural investigation on the Scanning Electron Microscope (SEM). Chemical analysis was undertaken using two techniques. The

major elements were determined by X-ray fluorescence and analysis for minor and trace elements was undertaken using the Inductively-Coupled Plasma Mass Spectrometer. Coal provenance studies were not pursued because of the small size of the coal fragments. Full details of the recorded assemblage and all methodologies are available in the archive. The bulk chemical analyses are presented in Table 5.

Iron ore

The iron ore (ditch fill 3180) was a piece derived from a thin stalactitic iron oxide ore seam. The ore fragment was red (indicating it is largely haematite), despite having a texture more normally associated with goethite ores, and had a surface broken by numerous shallow cracks. These observations indicate the ore had been roasted, a usual procedure prior to smelting. The ore shows a very high iron content with extremely low levels of all other major elements. Silica is extremely low (0.06 wt%). Certain distinction between different possible provenances for such ore material is difficult, because of significant overlap between the trace element compositions seen in the various sectors of the orefield. However, the best fit for the trace element chemistry would be from the ore bodies of the South Crop of the South Wales Coal Basin.

Iron smelting macroresidues

Iron smelting residues were confined to two small fragments of tapped slag. A very small piece of probable tapslag was recovered from ditch fill 2125 (possibly equal to ditch fill 3054, Period 2c) and a larger, certain piece of smelting slag from pit fill 3296 (Period 2d).

Table 5: Major elements analyses by XRF

Analyses shown calculated on the basis of all iron as Fe(III) with measured loss on ignition (LOI). Alternative values with iron recalculated on the basis of all iron as Fe(II) and with calculated LOI are given in bold type. A negative loss on ignition is a gain on ignition. All values in weight%.

	CHT1 smithing hearth cake	CHT2 roasted ore	CHT3 flake hammerscale	CHT4 spheroids >3mm	CHT5 spheroids <3mm
SiO_2	20.59	0.06	2.49	4.24	3.80
Al_2O	7.79	0.15	1.86	2.93	2.64
Fe_2O_3	70.00	97.65	98.24	96.47	97.18
FeO	**63.00**	**87.88**	**88.41**	**86.82**	**87.47**
MnO	0.099	0.044	0.052	0.033	0.036
MgO	0.32	0.25	0.05	0.10	0.08
CaO	0.31	0.05	0.09	0.11	0.11
Na_2O	0.27	0.10	0.18	0.18	0.19
K_2O	0.42	0.02	0.11	0.16	0.12
TiO_2	0.324	0.010	0.086	0.124	0.114
P_2O_5	0.823	0.094	0.498	0.614	0.623
LOI 100% Fe(III)	-1.41	0.34	-5.27	-6.45	-5.62
LOI 100% Fe(II)	**5.59**	**10.10**	**4.55**	**3.20**	**4.10**
Total	99.53	98.77	98.38	98.51	99.28
S	0.16	0.01	0.06	0.09	0.08

Smithing microresidues

The microresidues, including good assemblages from pits 3204, 3222, 3225, 3242, 3245, 3275, 3276, are dominated by rather fine flake hammerscale, but some spheroidal hammerscale is present throughout. Some assemblages show the presence of 'macroscopic flats', representing the shedding of thin slag films from the surface of the workpiece or tools. The ferruginous microresidues were accompanied by residues from the burning of coal and of fine unburnt coal debris.

Fines from pit/posthole 3278 (within the complex of Period 2c features of the iron working area) were sub-sampled for investigation. Three fractions were taken: flake hammerscale, spheroidal hammerscale <4mm and spheroidal hammerscale >4mm. For each sample a bulk chemical analysis was made and a selection of particles mounted for examination in polished section under the SEM.

The flake hammerscale showed a variety of microstructures, often in close proximity. The most common texture was the classic flake hammerscale texture and is equivalent to microstructure T1 at Coolamurry, Co. Wexford (Young 2008). A rather more developed neomorphic texture broadly equivalent to texture T2 in the Coolamurry assemblage is seen in the majority of the spheroidal hammerscale. A third microstructure suggests the influence of an external aluminous material (fuel ash?) in the development of this scale. As with the assemblage from Coolamurry (Young 2008), many of the spheroidal hammerscale particles bear small pieces of flake hammerscale in their margins.

Both flake and spheroidal hammerscale were dominated by iron oxide, with very low levels of both silica and alumina (2.5–3.8 wt% and 1.9–2.9 wt% respectively). The silica:alumina ratio (by weight) was very low at 1.34 in the flake hammerscale and only reaching 1.45 in the larger fraction of the spheroidal hammerscale. This ratio is interpreted as reflecting the influence of the composition of the coal ash, which is typically aluminous. Trace elements were typically present in low concentrations. The profiles for the microresidues are parallel to that of the smithing hearth cake (see below), and are also very close to the profiles of equivalent materials from the late Roman coal-fuelled smithy in the basilica at Caerwent (Young 2006a).

Smithing macroresidues

The macroscopic slag assemblage is frequently obscured by ferricrete. In general the material is dominated by rather amorphous slag lumps, but one certain smithing hearth cake (weighing 144g) and two less certain ones (240g and one encrusted in ferricrete at 290g) provide good evidence for smithing. The small size of these smithing hearth cakes suggests production during blacksmithing, rather than bloom-refining which tends to produce larger examples. Assemblages with a high proportion of amorphous hearth slag lumps are often associated with the use of coal (since the impurities in the coal provide an additional source of silicate material besides the normal source of melting of the blowing wall or tuyère).

The smithing hearth cake examined (the 292g from pit fill 3247) showed an extremely heterogeneous microstructure typical of a smithing slag. The smithing hearth cake shows a bulk composition with iron oxide (calculated as FeO) at 63 per cent, Silica at about 21 per cent and alumina at about 8 per cent. All other oxides occur at below 1 per cent.The silica:alumina ratio is low at 2.6 (by weight), although not as low as in the micro-residues. The rare earth elements show a profile parallel to those of the microresidues and to those of similar materials from Caerwent.

Distribution

Macroscopic and microscopic residues both derive from deposits of Period 2c and they appear to form a coherent group of cogenetic materials. Most of the macroscopic slag material was derived from the enclosure ditches. This is a common feature on early forge sites, where the easily moved slags are dumped away from the forge itself and in the immediate area of the ironworking activity the main finds

are of microresidues. The microresidues were recovered from a posthole (3202), 11 pits (3204, 3222, 3225, 3227, 3233, 3242, 3245, 3265, 3275, 3276, 3277) and a gully (3289).

Interpretation

Smithing

The assemblage provides remarkably coherent evidence for the smithing of iron using coal. Romano-British smithing employing coal is well-attested in the area, including local examples at Caerwent (Young 2006a) and Bulmore (Young 1999). Both the physical nature of the smithing slags and the use of coal at Trowbridge are indicators of blacksmithing rather than bloom-refining; so there is not necessarily any direct link between the evidence for smithing on the site and the very slight evidence for iron smelting.

Charcoal and coal are very different in their chemical composition, coal typically containing a much larger inorganic fraction. Iron oxide often provides up to 20 wt% of a coal ash, which may mean a coal ash is prone to forming clinker rich in iron silicate. The ability of coal fuels to form silicate melts, clinkers, within the body of fuel makes coal a much more 'dirty' fuel to use for smithing. The clinker may frequently become attached to the workpiece, since it is being generated pervasively by the fuel in the hot zone. In contrast, charcoal-fuelled smithing hearths do not have significant slag generation within the fuel bed. For traditional clay-lined hearths with simple blowholes or ceramic tuyères, the principal slag formation is that of a smithing hearth cake below the blowhole, which receives iron lost from the workpiece and a silicate component from the ceramic of the hearth. This process will be similar whether the hearth is coal- or charcoal-fuelled, but in coal-fuelled hearths there is often a great likelihood of developing other slag lumps besides the main cake

Although the sample size was very small, there are some general points of comparison with the microresidue assemblage from Coolamurry (Young 2008). Firstly both the microstructural observations and the bulk analyses show a much lower silicate component for the microresidues than at Coolamurry. The total of silica and alumina for flake scale was 4.3 wt% (Coolamurry: 5–8 wt%) and for spheroidal scale was 6.7–7.2 wt% (Coolamurry: *c*. 15 wt%). The mineralogical implication of this was the microresidue particles examined were all dominated by iron oxides.

In conclusion, the low silica:alumina ratio for the hammerscale at Trowbridge could be taken as the influence of the relatively aluminous coal ash, supporting a model where the influence of external silicate materials assists in the generation of the hammerscale. Alternatively, it is possible that the aluminous composition represent fractionation of internal slag inclusions during partial melting, with expulsion of the partial melt. It is to be hoped that this study provides a useful contribution towards the understanding of the various potential controls.

The low silica:alumina ratio of the smithing hearth cake does reflect the influence of the coal ash, albeit mixed with a major influence from the melted hearth ceramic. Compared with charcoal fuelled smithing slags the mineralogy shows a distinctive development of hercynite, a very low proportion of leucite and calcium substitution in the olivine restricted to less than 1 per cent.

Iron smelting

The single piece of roasted ore from Period 2d, a possible tiny piece of iron smelting slag from Period 2c and more substantial fragment from Period 2d provide slight lines of evidence for iron smelting in the general area, but there was no evidence that this was undertaken within the excavated site.

The iron ore was probably originally a goethite ore partially altered to haematite by roasting, and resembles ores from the Forest of Dean and South Wales. Its trace element chemistry favours, but does not prove, an origin in the orebodies within the South Crop of the South Wales Coal Basin; the nearest orebodies to the Trowbridge site. The ore has a texture common in iron ores from the Forest of Dean and

rather less common in the Glamorgan sector of the Bristol Channel Orefield. If indeed the ore is from the Forest of Dean it would be the farthest west occurrence of Dean ore recognised from the Romano-British period. Evidence to date suggests that the extensive Roman iron smelting in Cardiff employed Glamorgan ores (Thomas 2000). Although not completely certain, the provenancing evidence discussed above makes it extremely likely that the ore fragment from Trowbridge is from one of the Glamorgan orebodies.

Iron-making has been suggested at a few Roman sites in the coastal areas of South Wales including Rumney Great Wharf (Fulford *et al*. 1994) and Ely villa (Storrie 1894; Ward 1917, Wheeler 1922). Only the major iron-smelting undertaken in the area adjacent to the fort in Cardiff (Webster 1982) has yet been properly investigated. It has been demonstrated that the Cardiff smelting centre was employing ores from the Taff Valley area (probably from the Lesser Garth; Thomas 2000). In comparison to the hinterland of the Forest of Dean there has been little evidence to date for a dispersed rural smelting industry in South Wales. Much of the ore from the western part of the orefield appears to have been smelted at Caergwanaf (Young 2004) and Cardiff appears to have been the major smelting centre further east, with both centres possibly under some form of state control.

The ore find from Trowbridge is significant, for the tentative Glamorgan provenance suggests that some ore from these sources was being taken to the rural coastal area for smelting. Further work to determine the extent of this activity is clearly desirable.

ANIMAL BONE

By Sylvia Warman

The animal bone assemblage recovered from Roman deposits (Period 2) comprised 2128 fragments from 1293 hand-collected bones weighing almost 5kg and 7284 fragments from 214 bones recovered from samples weighing 1.4kg. Only 18 per cent of the hand-collected bones and 13 per cent of bones recovered from samples were identifiable to species. Much of the material was poorly preserved and too fragmented to identify to species, but horse, cattle, sheep/goat, pig and eel were identified. The size and quality of the assemblage did not warrant the presentation of quantified data in table form.

Much of the animal bone was recovered from ditches 5002, 5003, 5006, 5011, and 5009/5012/5014. The only species with a range of elements present was cattle. Sheep/goat bones comprised skulls, teeth and metapodials, with occasional upper limbs (meat bearing elements). Pig remains were restricted to teeth and jaw fragments. Evidence for butchery is seen where bones have been chopped right through. Almost all of the identified specimens were from adult animals. The poor condition and fragmentary nature of the assemblage is similar to that seen at the nearby site of St Mellons (CA 2004). The fragmented and weathered state of the bone was such that more subtle butchery evidence such as fine knife marks and pathological changes were probably obliterated, and none were observed during the analysis.

The large amounts of cattle bone deposited in ditches and the wide range of body parts present suggests that the material was partially articulated at the time of deposition. The in-filling and recutting of the ditches may have provided suitable places for the deposition of food and butchery waste and/or the disposal of diseased livestock. The deposits which produced better preserved, larger quantities of animal bone are derived from the deeper ditches to the south and west of the site; (5011, 5012, and 5009). Animal bone from the northern and eastern part of the site; (ditches 5002 and 5003), are more fragmented and show less diversity both of species and body part. This may reflect differential preservation due to feature size, and the fact that parts of the site showed different levels of waterlogging. If the cattle remains were

disposed of partially articulated there is likely to have been a positive selection for deeper holes for the disposal of the material.

The composition of the animal bone assemblage is similar to that recorded at the roadside settlement of Cowbridge, with cattle being most numerous and a smaller proportion of sheep/goat, horse and pig (Jones and Sadler 1996, 225). The Cowbridge assemblages also included birds and some wild mammal species, which were not present at Crickhowell Road. The predominance of cattle bones within the assemblage is not surprising for beef was an important aspect of the Roman-British diet and was also used for victualling military establishments (Dobney 2001). Pig is the least common of the domestic stock species; a pattern which is seen frequently in archaeological assemblages and is at variance with the documentary sources. The pattern of butchery is the classic Roman one, with many of the bones chopped right through. The Crickhowell Road assemblage also shows similarities with that from Rumney Great Wharf (Hamilton-Dyer 1994), 5 kilometres south on the Wentlooge Level. The assemblage there had a greater number of species including horse, dog, red deer, wildfowl and cod in addition to those present at Crickhowell Road. Fish was also an important part of the Romano-British diet and a larger quantity of fish bone might have been expected from both sites.

PLANT MACROFOSSILS

By Wendy Carruthers

Bulk samples were processed using standard methods for flotation and wet-sieving and a total of twenty-nine samples were assessed (Carruthers 2007).

The samples produced only traces of poorly preserved charred cereal remains. These included an emmer/spelt (*Triticum dicoccum/spelta*) glume base, rachis fragment and spikelet fork from fills in ditches 5009 and 5012, a small fragment of hazelnut shell (*Corylus avellana*) from ditch 2124, and three very badly eroded cereal grains from the primary fill of pit 1709. The fact that these were all very small, eroded fragments suggests that the material has probably been subjected to trampling and/or weathering prior to being deposited. Small assemblages of this nature are often found in field ditches, having originated from burnt domestic waste in manure being spread on fields.

The only deposit to produce a reasonably well-preserved waterlogged assemblage came from the peat deposit of the Middle Wentlooge formation. Assessment of a small sub-sample from this deposit suggested that alder carr (alder catkins and seeds; hazelnut), disturbed ground (brambles, docks, chickweed), wet ground (sedges, rushes, mint) and aquatic vegetation (starwort) were present nearby.

CHARCOAL

By Rowena Gale

Twenty samples were assessed using standard methods (Gale 2007). Preservation at the site was poor and charcoal residues were sparse, with most samples containing only small degraded fragments with poor structural condition rendering it difficult to examine. Pieces of coal and cindery/black 'cokey' material were also occasionally present.

Classification follows that of *Flora Europaea* (Tutin *et al.* 1964, 80). The anatomical structure of the charcoal was consistent with the following species: *Alnus glutinosa* (L.) Gaertner (alder); *Corylus avellana* L. (hazel); *Quercus* sp. (oak); *Fraxinus excelsior* L., (ash); *Crataegus* sp., (hawthorn); *Malus* sp., (apple); *Pyrus* sp., (pear); *Sorbus* spp. (rowan, service tree and whitebeam); *Prunus* sp., (blackthorn/cherry).

Only nine of the 20 samples examined included fragments of charcoal measuring >2mm in cross-section. The relatively narrow range of species identified probably reflects the poor preservation of the charcoal and the difficulty of examining the wood structures.

Charcoal from ditch 5012 (Period 2b) included small fragments of ash, hazel, oak, and the Rosaceae family (hawthorn, blackthorn, cherry), probably mainly from narrow roundwood. Very small quantities of hazel, ash, and cf. oak were present in samples 1 and 3, the secondary and upper fills of the ditch. Three samples were examined from the fills of ditch 5009 (Period 2c). Sample 4 from the primary fill (3058) included the largest quantity of charcoal, although this was extremely degraded. Oak and cf. blackthorn/cherry were identified. The origin of the material is unknown.

Samples 9, from a small scoop 3222, and 22, from pit/hearth 3265 (Period 2c), in the metalworking area were both small. The former included cf. blackthorn/cherry, whereas hazel was identified from the latter. No further charcoal was available for examination. Coal was recorded in sample 22.

None of the species represented is likely to have grown in permanently waterlogged soils and it is probable that fuel was obtained from woodland on the higher, drier land. Although some of the charcoal in samples 1002 and 1005 from ditch 5012 is described as roundwood (diameter <20mm) it was not possible to assess whether these were obtained from coppiced/managed woodland.

Poor preservation conditions were probably responsible for the degradation of the charcoal. The charcoal almost certainly represents fuel debris, including industrial residues (metalworking), although the origin of ditch deposits is less certain. Hazel and possibly blackthorn/cherry are included in fuel debris from the smithing activities, which is likely to represent the remains of kindling wood, the main fuel having been coal. Ditches 5003, 5009 and 5013 contained ash, hazel, oak and a member of the family Rosaceae (hawthorn group/blackthorn/cherry). Roundwood was recorded in samples 1002 and 1005 but there was insufficient evidence to assess the use of managed woodland.

DISCUSSION

By Neil Holbrook

The excavation site lay on a localised high spot covered by a spread of glacial till at the interface with the alluvial deposits of the Wentlooge Levels, which stretch along the Severn foreshore between the mouths of the rivers Rhymney and Usk. The Wentlooge Levels, and the Caldicot Levels which lie further east between the Usk and Wye, make up the Gwent Levels which have been the subject of much archaeological investigation over the last few decades, although the prehistoric sequence is less well studied on Wentlooge than on the Caldicot Levels (Rippon 1996). In the Neolithic and Bronze Ages the Wentlooge Levels were dominated by reed swamps and raised bogs, which are manifested archaeologically as one or more peat horizons. At Rumney Great Wharf, 2 kilometres to the south of Crickhowell Road, two distinct peat horizons were separated by intervening sterile silt. A radiocarbon date of the early second millennium BC was obtained from the lower peat deposit, and three late Bronze Age activity areas were associated with these horizons (Allen 1996). It is conceivable that during the Bronze Age the Levels were used for summer and spring pasture, but largely abandoned in winter. The early Bronze Age Beaker vessel, possibly associated with an inhumation burial of which all trace has decayed in the acidic subsoil, is one of very few Beakers to have been found in Monmouthshire, although such vessels are better represented in Glamorgan to the west and Gloucestershire to the east (Hamilton 2004, 868; see Lynch *et al*. 2000, fig. 3.2 for a distribution map of Welsh Beaker finds).

In the first millennium BC a substantial marine transgression flooded the Wentlooge Levels, resulting in the deposition of estuarine alluvium of the Upper Wentlooge Formation. At Great Pencarn Farm, 3

kilometres to the north-east of Crickhowell Road on the edge of the Levels, the peat deposit yielded a radiocarbon date of 495–395 cal. BC (Beta-109345: 2340±60 BP, and Beta-109346: 2440±60 BP). It was cut by an Iron Age ditch which was sealed beneath clay alluvium of the Upper Wentlooge (Yates 2000). At the beginning of the first century AD the Levels would have been saltmarsh crossed by various tidal creeks, but during the Roman period a deliberate act of reclamation occurred (see Rippon 2006, 68, 74 for a forceful rebuttal of suggestions that the Roman date for reclamation is unproven). It would appear that a sea wall was built (since lost to coastal erosion) and the higher coastal areas were divided into a planned landscape of rectilinear fields and drainage ditches. In the central Wentlooge Levels the field system can still be discerned, but elsewhere (including the area to the south of Crickhowell Road) the Roman ground surface was covered by alluvium laid down by a late fourth century AD or post-Roman marine transgression (Rippon 1996, 25–32). It is likely that the agency of the Roman army should be sought in the systematic reclamation of the Wentlooge and Caldicot Levels, and the newly won lands would have been fertile pasture, either as part of *territorium* associated with the legionary fortress at Caerleon or else as state owned land (Allen and Fulford 1986, 114–16). The process of reclamation probably began in the second century AD, to judge from pottery associated with a probable settlement out on the Levels at Rumney Great Wharf and the digging of drainage ditches at Great Pencarn Farm in the late second to early third century AD (Fulford *et al*. 1994; Yates 2000). It is in this context that the discoveries at Crickhowell Road should be viewed.

The earliest Romano-British activity at Crickhowell Road is represented by a pair of sinuous drainage ditches. The upper (slighter) ditch fell out of use first, and it was replaced by narrower ditches which drained into the lower and more substantial ditch 5011. These ditches were filled in the earlier third century, but the pottery within their fills suggests activity in the vicinity from either the late first or (more likely) early second century AD. It is tempting to suggest that this initial activity at Crickhowell Road is related to the wider initiative of reclamation on the Wentlooge Levels. The drainage ditches were replaced in the third century by a rectilinear enclosure. It is difficult to reconstruct its plan since only two sides lay within the excavation area and a north-eastern return was not detected in evaluation trench 15. Perhaps the upslope side of the enclosure was defined by a bank or fence, which in the absence of a ditch, was not detected in the evaluation trenches. No internal features can be securely associated with this enclosure, and there were only small quantities of pottery within the ditch fills. Plant macrofossils were also poorly represented, suggesting a low arable component unless their scarcity is simply a product of poor preservation of biological remains on the site. There is no reason to suppose that the enclosure functioned as a settlement, though a Roman style building may have existed in its vicinity. It is more likely to have been used for stock management, perhaps for over-wintering of animals, which in summer grazed the pastures of the Wentlooge Levels. The enclosure was replaced in the second half of the third or early fourth century AD by a smaller elongated enclosure, which was used for ironworking. The ditch on the upslope side was quite insubstantial, and postholes on the inner edge of the ditch and a gully draining into it from a metalled area suggest that there was no internal bank.

Internal features within the enclosure included small pits, postholes and lengths of curving slots which might have held timber windbreaks (5007 would have protected the metalworking area from gusts off the estuary). A rectangular spread of light metalling, 10m long by 5m wide, was covered by an artefact-rich silt. It is possible that the metalling defines the site of a small timber building which has left little other trace (it might have been of sleeper-beam or cob construction). Buildings which have left similarly little sub-surface traces have been found at Great Pencarn Farm, where a spread of loose cobbles and a hearth defined a structure more than 24m long and 7m wide. This has drystone sills, placed directly on the ground with little or no foundation, which are assumed to have supported a timber or cob superstructure (Yates 2000). The corner of an apparently similar drystone building was found in evaluation at Trowbridge Road,

St Mellons, 500m to the south of Crickhowell Road (CA 2004), and others are known further west on the margins of the Caldicot Levels at Portskewett and Rogiet (Lawler and Marvell 1995, 56; Marvell 1996, 78). On the opposite side of the Severn estuary in the Bristol region similar rectangular spreads of stone also surely indicate the sites of buildings (see Evans *et al*. 2006, 45 for references; a further probable example has been more recently excavated at Almondsbury; Hart forthcoming). The latest pottery from Crickhowell Road can only be broadly dated to the late third or early fourth century AD, and if any weight can be placed on the total absence of coins from the site, especially in the otherwise artefact-rich silt overlying the metalling, abandonment perhaps occurred earlier rather than later in that date range.

The ironworking debris associated with features within the enclosure was principally the product of blacksmithing, although a couple of fragments of smelting slag and a piece of roasted iron ore were also retrieved. The origin of the ore cannot be determined precisely, although it is thought more likely to be from the Glamorgan orefield than the Forest of Dean. The small quantity of smelting slag suggests that this activity was taking place in the general area, although not within the excavation site itself. Iron-making was a common component of the economy of rural settlements on either side of the Severn estuary (Allen and Fulford 1987; Fulford and Allen 1992), and in a local context ironworking slags have been recovered in association with the Romano-British site at Rumney Great Wharf (Allen and Fulford 1986, 106–7). It is therefore likely that the pattern of iron-making at rural sites, both villas and farmsteads, known further up the estuary, stretched as far westwards as Cardiff, where this activity was seemingly a major component of the economy of the villa at Ely (see Burnham *et al*. 2002, 276, for recent geophysical survey and Young above for references to earlier work). Iron-making on a more substantial scale, and possibly state controlled, also occurred outside of the fort at Cardiff in the second and earlier third centuries AD (Webster 1982). The enclosure at Crickhowell Road was used primarily for blacksmithing, and there is no reason to assume that artefacts were being produced on a scale above that required at the nearby settlement.

The evidence for an agricultural enclosure, field system, and an industrial working area strongly suggest that the excavation area lay on the periphery of a settlement, the focus of which may have lain 500m further south at Trowbridge Road, St Mellons, where evaluation in 2004 revealed drainage ditches and the corner of a probable drystone building at the interface with the estuarine alluvium (CA 2004). These features overlay or cut alluvium of the Upper Wentlooge horizon. The majority of Roman ditches contained a similar homogenous blue-grey clay fill which is likely to have resulted from a single major flooding event and all Roman features were sealed by a layer of alluvium which testifies to marine inundation in the late or post-Roman period. No evidence for any post-Roman land surfaces which pre-date the modern period were found. The pottery assemblage at Trowbridge Road contained a couple of sherds of probable late Iron Age type, but overall it is consistent with occupation from the second to late third or early fourth century AD. At Rumney Great Wharf a ditch was filled in the second half of the third century AD, and there is nothing in the pottery assemblage recovered from the site which need indicate fourth-century AD occupation (Fulford *et al*. 1994). At Great Pencarn Farm the pottery assemblage is also consistent with abandonment in the later third century AD (Yates 2000). These sites thus fit into the general pattern recovered from the Gwent Levels and fen edge of declining occupation in the late third or early fourth century AD, and all sites seem to have been abandoned by the mid fourth century AD at latest (see Robinson 1988, xxi–xxvi and Rippon 1996, 325 for summaries of the evidence). The reasons behind the seemingly widespread abandonment of rural settlements in south-east Wales in the first half of the fourth century AD remain to be clearly articulated. There is little evidence for fourth-century AD prosperity at the few villa sites investigated, such as might be expected if consolidation of land-holding had occurred, and equally it is difficult to envisage that all the inhabitants of these sites migrated to the town at Caerwent around this time unless flooding no longer permitted the agricultural base which

underpinned the rural economy. One final note of caution is that the abandonment of sites mentioned above is only dated by the latest pottery and coins (if present at all), and it is conceivable that access to the networks which supplied these goods became severely disrupted in the rural areas of south-east Wales in the early fourth century AD. It is therefore not inconceivable that occupation continued later than the date which the latest artefacts would otherwise suggest.

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