A Late Roman Well or Cistern and Ritual Deposition at Bretton Way, Peterborough

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Illustrations by Séverine Bézie, Gillian Greer and Stephen Upex

'*We venerate the sources of important streams … springs are objects of worship; the darkness of unfathomable depth of pools has made their water sacred*'

Lucius Annaeus Seneca, *Letters from a Stoic*, Letter XLI (Trans. Campbell 1979, 87)

Excavation of a small Romano-British settlement at Bretton Way, Peterborough was unexceptional apart from one extraordinary feature – a well or cistern, dating from the late 3rd to early 4th century and constructed from massive stone blocks re-used from a monumental building. The labour required to construct such a structure strongly suggests more than a purely utilitarian function. The late 4th-century deposits it contained indicate various possible 'ritual' elements, alongside more conventional rubbish disposal, but a definitive interpretation remains elusive.

Location, Geology and Topography (Fig. 1)

Archaeological investigations were conducted on a 0.35ha site located in Bretton, on the western side of Peterborough (TF 1600 0770; Fig. 1). The site lies to the west of Bretton Way, with Grimeshaw Wood to the north and farmland to the west. Temporary offices had occupied the area during the early 1990s, although prior to excavation it was disused and under scrub.

The site lies at approximately 22m OD, to the north of the River Nene and west of the Cambridgeshire Fens. The underlying geology is Cornbrash limestone (British Geological Survey 1984, sheet E158).

Project Background

Oxford Archaeology East undertook an archaeological excavation during October and November 2010 in advance of the construction of a neurological care unit for P.J. Care Ltd. These works followed an archaeological evaluation conducted by Northamptonshire Archaeology which had revealed ditches and gullies dating to the 3rd to 4th centuries AD. The evaluation also identified concrete strip foundations and evidence that the site had been levelled, resulting in the truncation of the subsoil and in places the natural substrate (Taylor 2010).

The site archive is currently held at OA East's offices under the site code PETBET10 and will be deposited with Peterborough Museum Archives in due course.

Archaeological and Historical Background (Fig. 2)

Extending along the Nene Valley, approximately 5km to the south-west of Bretton Way, are the best known Roman archaeological remains of the area. These were serviced by a network of Roman roads, including Ermine Street and the Fen Causeway, with river crossings identified at *Durobrivae*, Gunwade Ferry and Longthorpe. Another probable crossing point may have existed near Botolph Bridge (Upex 2008, fig 13; Spoerry and Atkins, in press).

The Roman town and fort at *Durobrivae*, Water Newton (Scheduled Ancient Monument (SAM) 130) lay to the south of the River Nene on the line of Ermine Street. The town's industrial zone was located during excavations at Normangate Field (SAM PE127). Extensive Roman remains found at Castor include the 'palace' or *praetorium* (Artis 1828; Upex 2011; SAM PE93). The military forts at Longthorpe (Dannell and Wild 1987, SAM PE135) and Sutton Cross (SAM PE138) lay relatively close to the subject site. Strung out along the River Nene and Ermine Street to the south-west of Bretton Way were various villas, including those at Mill Hill, Castor (SAM PE128), Sibson Hollow (SAM PE126) and Sutton Field (SAM PE125). Limited investigation has also been conducted on another villa to the north of Oxey Wood, Upton (Challands 1975; SAM PE132).

In terms of the subject site itself, topsoil stripping in the 1990s found Iron Age and Roman coins and pottery (Peterborough Historic Environment Record (PHER) 51164), providing good evidence of a settlement on or adjacent to the development area. Traces of various high status buildings have been found relatively close to the site. These notably include a large Iron Age enclosure and subsequent Roman villa at Itter Crescent, just over 2km to the north-east of

Figure 1. *Site location.*

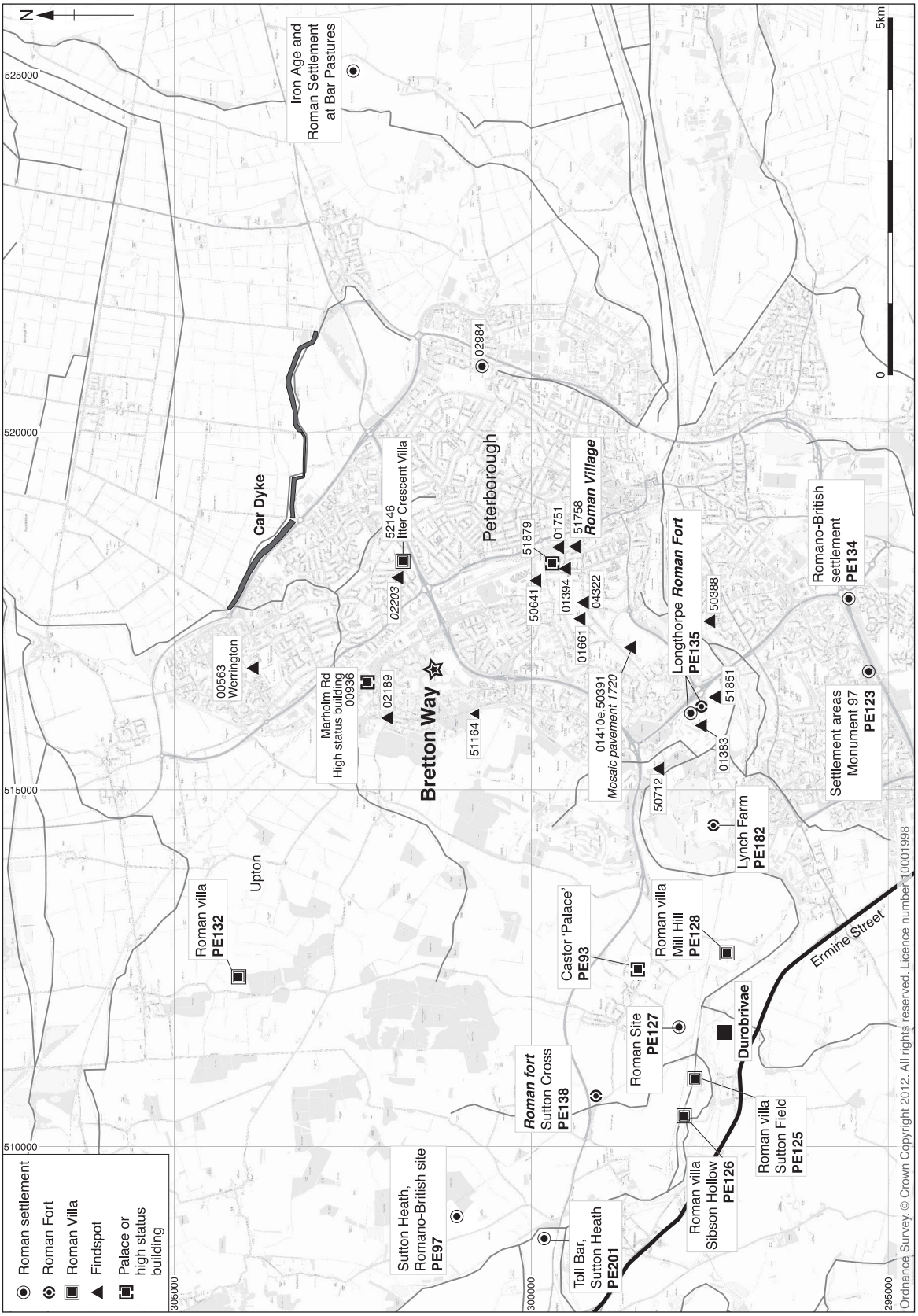

Figure 2. The site in relation to other Roman sites in the locality.

Bretton Way (Pickstone 2011, PHER 52146). Expansion of Peterborough in the 1970s led to two rescue excavations at Marholm Road, approximately 1.5km to the north of the subject site (Challands 1972, PHER 02189; Jones 1974, PHER 00936). Here a Roman farmstead was found, together with tesserae, ashlar masonry and hypocaust tile, suggesting the presence of a substantial building nearby.

To the south-east of Bretton Way lies the substantial yet little understood Iron Age and Romano-British complex at Westwood (PHER 01751), which was investigated predominantly during the latter half of the 19th century. This extensive settlement, covering approximately 80ha, may have represented a 'Roman village' at the very least (Walker 1899). The area immediately south of Westwood Bridge provides much of the evidence, notably including two stone-lined wells, tiles and stone slabs from buildings and a cemetery of about forty inhumation burials. Further elements of this settlement have now been identified at Westfield Road and Mayor's Walk (Palmer 1998, PHER 51879; Hatton 2003, PHER 51758). At the more northerly site (PHER 51879), the remains of a high status Roman building were represented by fragments of flue tiles, mortared floors and plastered walls. At Mayor's Walk, the presence of tile and limestone rubble suggests that another substantial building lay nearby.

Extensive evidence for rural Iron Age and Roman settlement has been discovered due south of Bretton Way. Sites include Lynch Farm (SAM PE182), adjacent to Longthorpe fort (PHER 01383), and at two sites in Orton Longueville (SAM PE123; SAM PE134). Excavations at the Werrington Enclosure, *c.* 2km to the north, also revealed traces of Iron Age and Roman rural settlement and enclosure systems (Mackreth 1988; PHER 00563).

The Settlement (Figs 3–5)

The earliest evidence for occupation of the Bretton Way site consisted of a possible Late Iron Age roundhouse drip gully (Fig. 3), surrounded by the remnants of other gullies, curvilinear features and pits. Most of the related pottery is Late Iron Age Shell Gritted Ware, although one sherd may be attributed to the Longthorpe military kilns, which would place it in the mid 1st century AD. A shift away from the Iron Age settlement occurred in the later 1st century AD, when two enclosures, a few ditches and a pit were present. One ditch yielded pottery similar to that from both the Longthorpe military works depot and the settlement complex at Lynch Farm II, which also has a military installation. This may suggest some linkage between the military and sites such as Bretton Way which appear to be largely native in tradition. Perhaps supporting this suggestion, albeit of later date, is a fragment of an auxiliary cavalry harness pendant, found unstratified. Its distinctive elongated and curved form is matched by examples from mid to late Roman contexts at the forts on the German *limes* (Oldenstein 1976, 124–7, tafn 29–30). It therefore provides evidence for continental incomers on the site, suggesting that some at least may have been military personnel.

The early Roman (*c.* AD 43 – late 2nd century) enclosure system on the western edge of the development area (consisting of a curving ditch aligned broadly north to south) was altered in the late 2nd to early 3rd century with the establishment of a significant boundary ditch aligned east to west. In the southern part of the site lay a ditch with a bend part way along it which was to become the location of the subsequent stone-lined well/cistern.

By the middle of the 3rd century AD a rectilinear field system extended across the western part of the site, with the main focus of settlement evidently lying elsewhere. Much of the associated pottery is abraded and residual. Two coins from the upper fill of one ditch date to the late 3rd and late 4th centuries (a worn irregular radiate *antoninianus* and a worn AE3 of Gratian respectively). One field housed a waterhole (measuring *c.* 5m in diameter and 1.5m deep). Its basal waterlogged fills contained pottery dating to the 2nd and 3rd century, while 3rd- to 4th-century pottery came from the upper fills. It also yielded an armlet fragment with a cast multiple-motif armlet of probable late 4th century date. A sample from fills of the waterhole contained only a few charred cereal grains.

The late 3rd to early 4th century saw an intensification of activity, focused on an aisled barn and adjacent stone-lined well or cistern. Two ditches flanked the barn, while a line of five pits containing a little pottery lay to the north-west (Fig. 3).

The large aisled building (measuring 21m from east-west and 8.5m from north-south, Fig. 4) was formed by seven pairs of large postholes, spaced between 2.2–2.4m apart. Just to the east, a possible beam slot and small posthole were the only features potentially associated with the external superstructure of the building, while four other postholes sited within the building's footprint are of uncertain date. Approximately 4kg of pottery was recovered from the postholes, most of which is abraded and probably residual. The latest sherds date to the late 3rd or early 4th century: the presence of a large sherd of an imitation samian form 31 in Lower Nene Valley Colour Coated ware (posthole 306) suggests a possible date of *c.* AD 300 and *c.* AD 350 for the construction of the building. Most of the metalwork associated with the barn consists of nails (x 14). Other items include an iron punch (from posthole 64), a composite box stud (posthole 80), and a copper-alloy sheet fitting, possibly a crude strap-end (posthole 105).

Late 3rd- to 4th-century pottery dominates the site assemblage, with a total of 1087 sherds weighing 20,100g (31.8% of the total sherd count and 47.2% of the total weight of pottery from the site). The assemblage largely consists of lower Nene valley grey ware and lower Nene valley colour coated wares. Roman shell-gritted wares and lower Nene valley cream and white ware are also present in significant amounts. The mass production of the lower Nene valley prod-

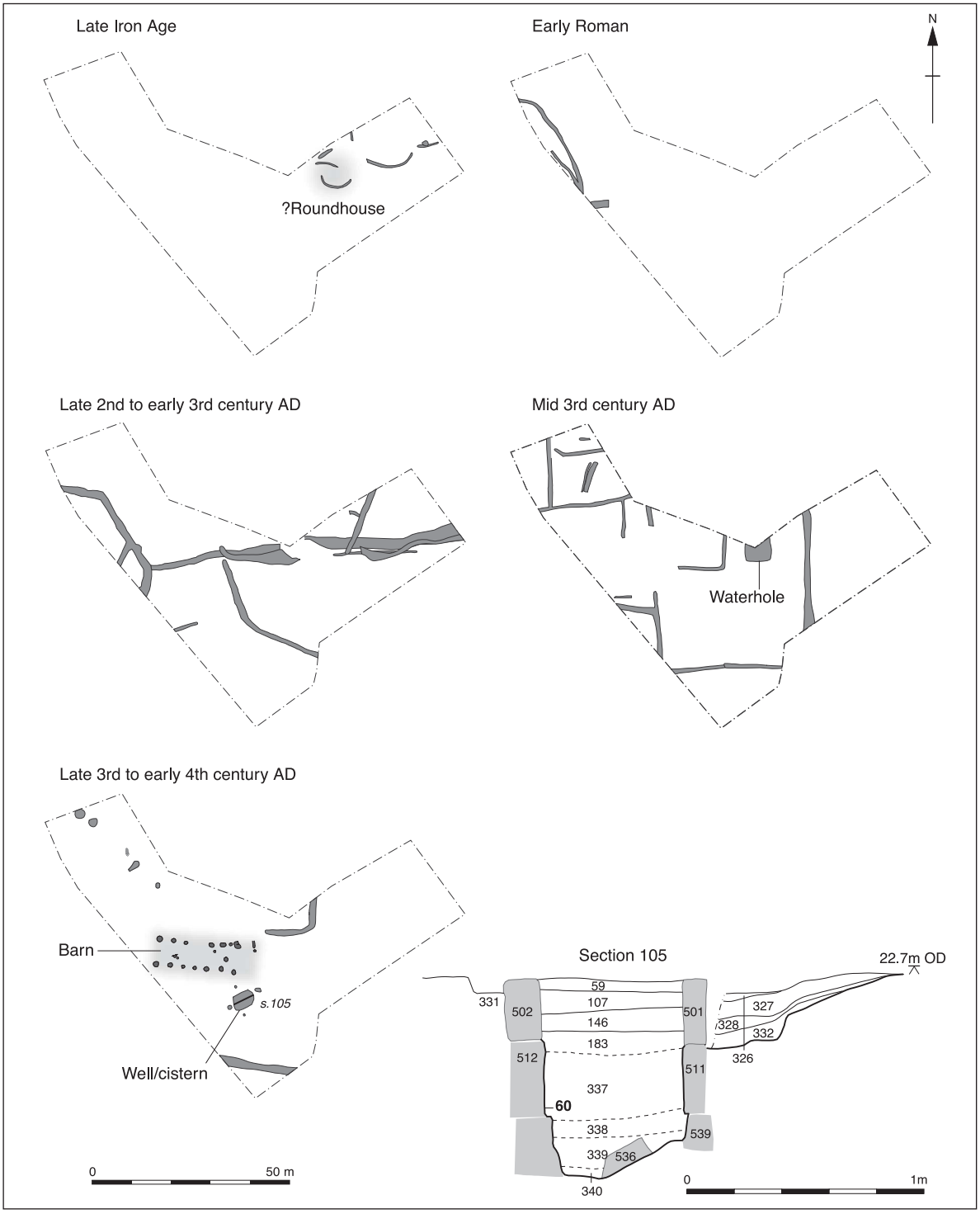

Figure 3. *Phased plan, showing section across the well/cistern.*

ucts at this period is evident, with little pottery being present that was not made within perhaps a 16km radius of the site. There is a total exclusion of wares derived from upper Nene valley production centres and the only imports that appear within the assemblage are products from the Oxford kilns, which are now recognised as common place on rural sites in the area at this period.

The Well/Cistern (Figs 3 and 5–7)

Just to the south-east of the barn lay the stone-lined well or cistern (henceforth referred to as a well). Prior to excavation, it was visible on the ground surface as a sub-rectangular feature measuring approximately 5m by 3.5m which was filled with a dark brownish grey silty clay (59). This upper fill was initially di-

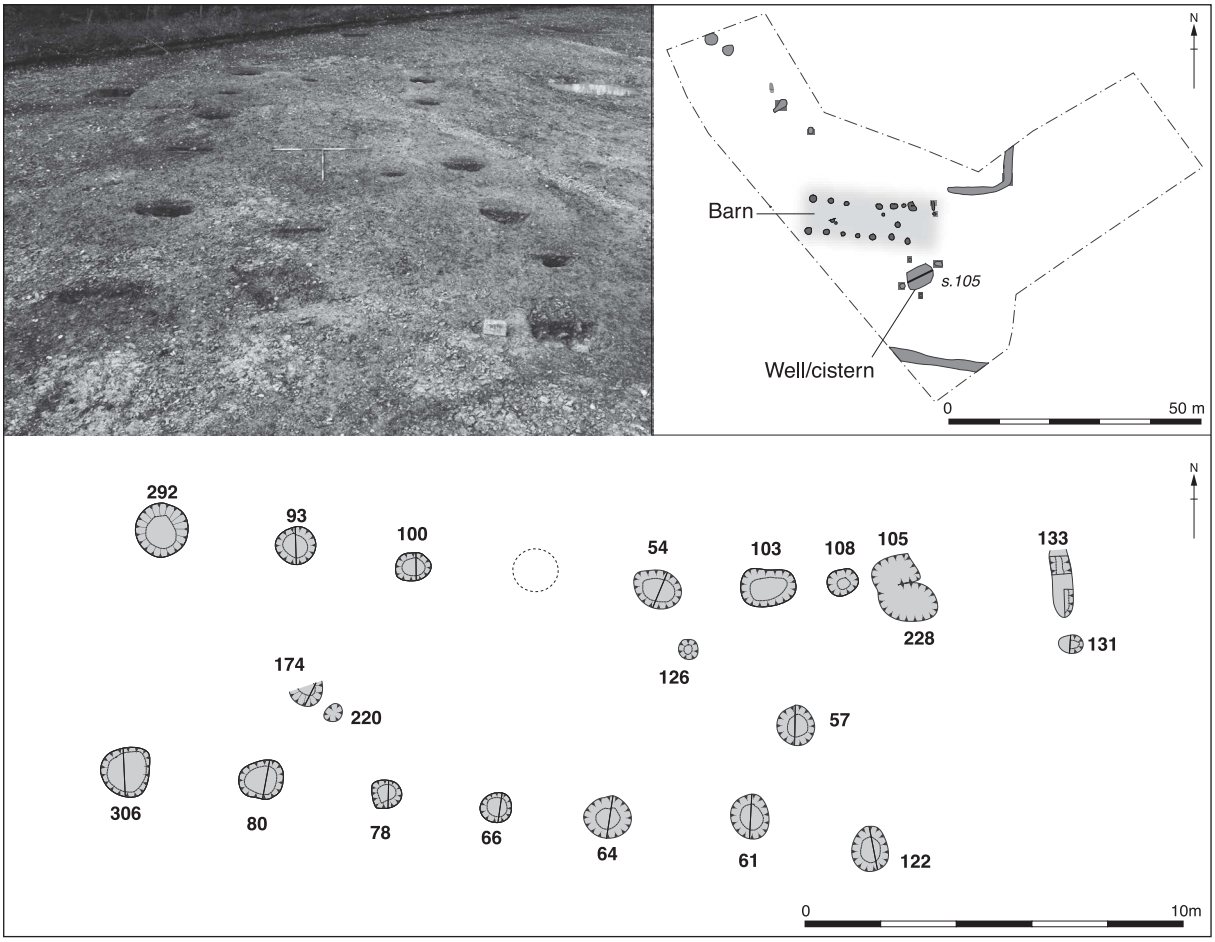

Figure 4. *Detail of the aisled barn.*

vided into quadrants for excavation, although this approach ceased on discovery of the masonry lining, when 100% excavation of the fills commenced. Fill 59 contained various items including a late 3rd-century minim and two whetstones.

The construction cut (60) measured 6.5m from north-east to south-west and 3.5m from north-west to south-east, with a maximum depth of 2.5m at the centre of the feature. Its eastern edge was gradually sloping for a distance of 2.5m before becoming vertical, with the remaining three sides being near vertical (Fig. 3, Section 105). The small quantity of pottery recovered from fills of the construction cut suggests that it was built no earlier than the late 3rd and more probably the early 4th century. Also recovered were two pottery discs/bases (see Upex, below). In addition, an iron awl was recovered from these fills.

Sunk into the natural 'cornbrash' limestone geology, the base of the well itself reached to the level of the underlying clays. During construction, access to the feature would have been provided by its sloping north-eastern side. Large masonry blocks were then placed around the three vertical sides, with clay and rubble packing used as a waterproofing layer between the blocks and construction cut. Water gushed into the feature during excavation, perhaps as the result of a locally high water table, or the presence of a previously unknown spring.

The masonry used to create the lining consisted of 36 huge limestone blocks. These had clearly come from a local monumental structure. There is no evidence to suggest that the stones had been shaped to fit the construction cut; rather, the blocks were chosen to 'best-fit'. The faces of the largest stones measured *c.* 2.30m wide by 0.84m high, with a great variety of forms being observed. The blocks are of sufficiently similar petrology to have come from the same primary source. The stone is a Middle Jurassic oolitic limestone containing a small number of other fossils. An obvious source for the stone should have been the Barnack Rag, extensively quarried just outside the village of Barnack, about 10km north-west of Bretton Way at the famous 'Hills and Holes'. However, the ooliths in the Bretton Way stones are crumbly and fragile, giving the stone the appearance of limestones from the Great Oolite, which are spar-prominent (Palmer 2008). Lincolnshire Limestone types tend to be mainly formed of ooliths with a less significant matrix and this stone is not typical of the grain-prominent local Barnack Rag. However, the lengthy burial of the stone, as demonstrated by many of the weathered faces, has affected its appearance, making

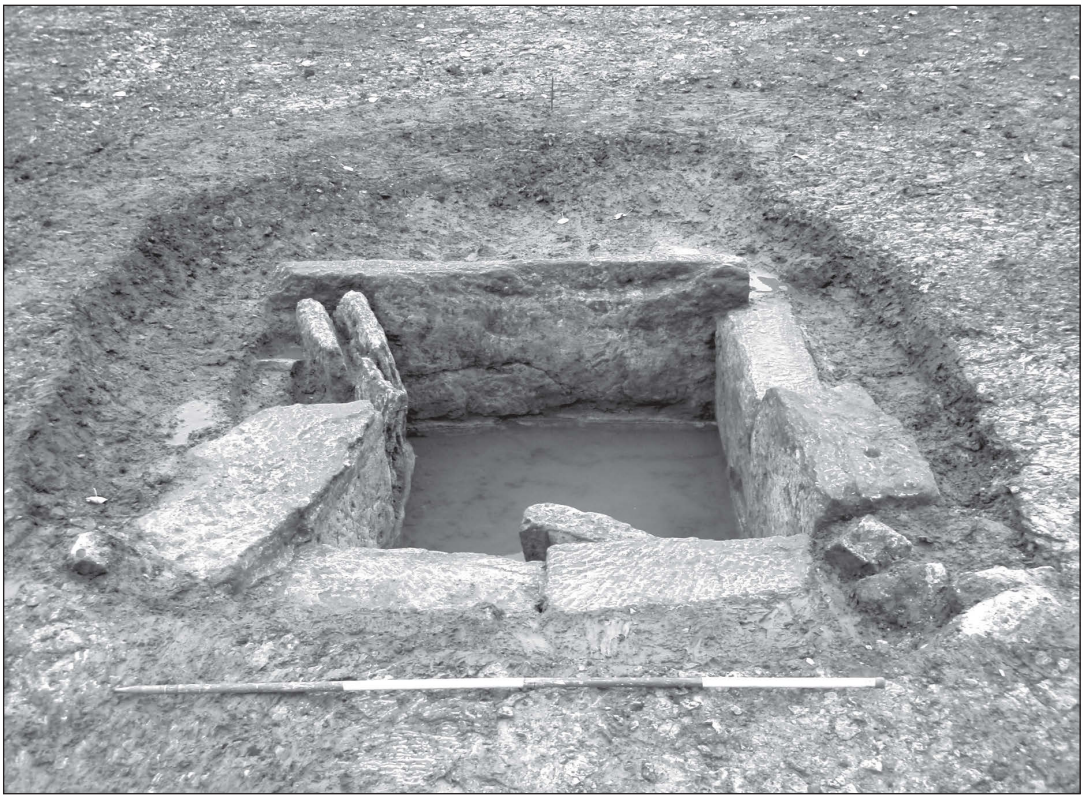

Figure 5. *The well/cistern before excavation.*

Figure 6. *The well/cistern during excavation.*

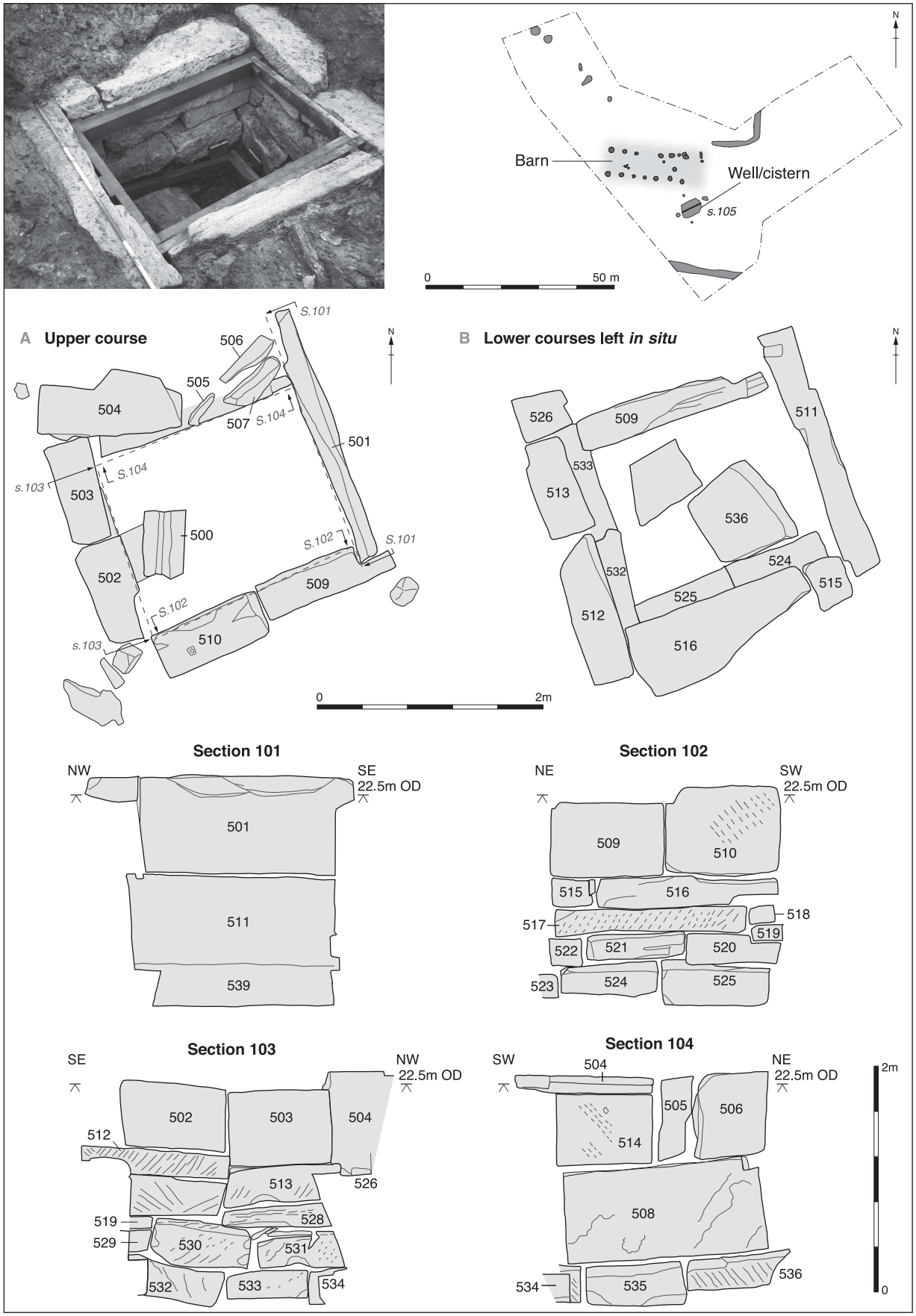

Figure 7. Constructional details of the well/cistern.

an absolute identification impossible.

The two largest masonry slabs (501 and 511) were used to 'close' the north-eastern side of the well: these had apparently been put in place without the use of clay packing. Unlike the other sides of the feature, the masonry was not placed upon the base of the cut in this location but a gap of approximately 0.4m was left; in this void a near complete bowl was discovered (see Upex below, No. 27), possibly deposited at the time of construction. This vessel is in a long-lived ceramic form (imitation samian form 38), that was produced in the Nene Valley kilns between the second half of the 2nd century and the late 4th to early 5th century.

Four postholes surrounding the well may provide evidence for a lifting device which would have enabled the masonry blocks to be lowered into place, or for a surrounding building or covering. The postholes occurred in two pairs on opposing sides of the well. The first pair measured 1m in diameter and up to 0.03m deep, while the second pair measured 0.50m in diameter and 0.15m deep. Pottery recovered from the postholes dates to the late 3rd to mid 4th century.

Once the lining was in place, the shallower north-eastern side of the construction cut was backfilled with a series of deposits (Fig. 3, Section 150, fills 332, 328 and 327). Of these, layer 328 appeared to be a possible construction surface, since it contained a high proportion of degraded limestone.

Due to the depth of the feature and associated health and safety considerations, the upper levels of masonry were removed carefully by machine prior to commencement of the excavation of the lower fills which were excavated as 'spits' to enable any possible patterns of finds deposition to be identified. The lowest 2m of the fills were waterlogged (340, 339, 338, 337 and 183). Water ingress at the time of excavation made the identification of any subtle colour changes in the deposits impossible. These waterlogged fills were very dark grey, organic clayey silts and contained large and varied finds and environmental assemblages (Table 1). The upper fills (146, 107 and 59) were not waterlogged, but were also finds-rich. The diagnostic finds indicate that infilling of the well took place in the late 4th century.

Table 1. *Finds from the well/cistern, by fill.*

Fill	Pottery (kg)	Pottery details	Animal Bone (kg)	Animal bone details	Small finds	Details	Qty	Illustration
59	7.225	3rd-4th century	2.459		Pottery discs/bases Coin (SF 522) Nails Whetstones (SF 31a and b)	 Minim AD 270–94	2 1 2 1	
107	1.010	3rd-4th century	0.889		Coin (SF 326) Copper alloy belt-plate (SF 24)	Constantinian/ Valentinian. ML 4th century	1 1	
146	2.000	Late 4th century	1.328		Coin (SF 28) Nails Pottery disc/base	Constantine AD 330-360	1 2 1	
183	0.403	3rd-4th century	2.738		Bone sledge runner (SF 72) Pottery disc/base		1 1	Fig. 14
337	4.100	3rd-4th century. Complete RSGW jar Complete LNVCCW jar	36.112	Drilled cattle skull (Fig. 17) Dog skull (partial) Red deer antler burr (tines removed) Worked cattle scapula Worked cattle mandible Articulated cattle (x 2)	Pottery discs/bases Lead eyelet (SF 56) Iron bucket hoop frags (SF 46/62) Iron hobnails Leather shoes		9 1 2 3 5	Fig. 13, Nos. 35 and 36 Fig. 9
338	1.903	Late 4th century Complete LNVCCW imitation samian bowl (No. 27)	8.039	Cattle crania	Pottery discs/bases Iron bucket hoop frag (SF 61) Iron hobnails Bone sledge runner (SF 87) Leather shoes Folded birch bark 'curses'		5 2 3 1 6 3	Fig. 13, No. 37 Fig. 9 Fig. 15 Fig. 14
339	1.570	3rd-4th century	2.294		Iron hobnail Leather shoe Pottery disc/base		1 1 1	
340	1.403	Late 4th century	1.524		Iron and organic pendant (SF 57) Iron hobnail Leather shoes Pottery disc/base		1 1 4 1	Fig. 8
Total	**19.614**		**55.383**					

Finds and Environmental Evidence from the Well

Coins
Nina Crummy

Three coins were recovered from the upper well fills (146, 107 and 59). Two are worn 4th-century issues. One is an irregular copy of the House of Constantine, probably with falling horseman reverse (which would date it to *c.* AD 350–60). The other, with its reverse image and legend completely worn away, cannot be positively identified but belongs to either the House of Constantine or the House of Valentinian (maximum date range *c.* AD 330–78). Given the degree of wear on these coins, both were in circulation for some time before being lost, implying a date no earlier than the late 4th century for the formation of the upper fills. The worn late 3rd-century coin found in the uppermost fill (59) was clearly residual.

The use of coins as votives in watery contexts is particularly well demonstrated at the Sacred Spring at Bath and at Coventina's Well in Northumberland, where large numbers were deposited over many generations (Walker 1988; Allason-Jones & McKay 1985), but with such a low number present at Bretton Way and no coins at all in the lower fills of the well, it seems unlikely that the items in the upper fills were deposited during ritual activity.

Metalwork (Figs 8–9)
Nina Crummy

Most of the metal objects from the well came from its lower fills, although an undiagnostic copper alloy belt-plate came from fill 107 (SF 24, not illustrated). From the lowest waterlogged level (340) came a hobnail (SF 66) from leather footwear and an unusual pendant amulet (Fig. 8, SF 57). The latter consists of a decayed ovoid mass of organic material, probably mineral-replaced leather, that had been moulded around an iron bar. The top of the bar is rolled over to form a loop, into which is fitted a copper-alloy suspension ring. This item falls within at least two, and possibly four, of the five amuletic groups defined by Pauli: first, noise-making objects; second, objects of meaningful shape; third, objects with special external qualities; fourth, curiosities and remarkable objects; and fifth, objects made of a material valued for special qualities (1975, 116–35). At the very least the pendant belongs to the first and fourth group, and at the most into the first, second, third and fourth. Further consideration on this issue is given in the general discussion below.

From the waterlogged layers above the amulet (339, 338, 337 and 183) came more hobnails from leather footwear, a lead eyelet and an iron hoop from a wooden stave-built bucket. The bucket may have been attached to a wooden superstructure represented by the postholes set around the well. The bucket hoop (Fig. 9, SF 46/61/62) is slightly splay-sided and was found in several pieces in contexts 337 and 338. There are patches of distinctive blue vivianite corrosion on its surface,

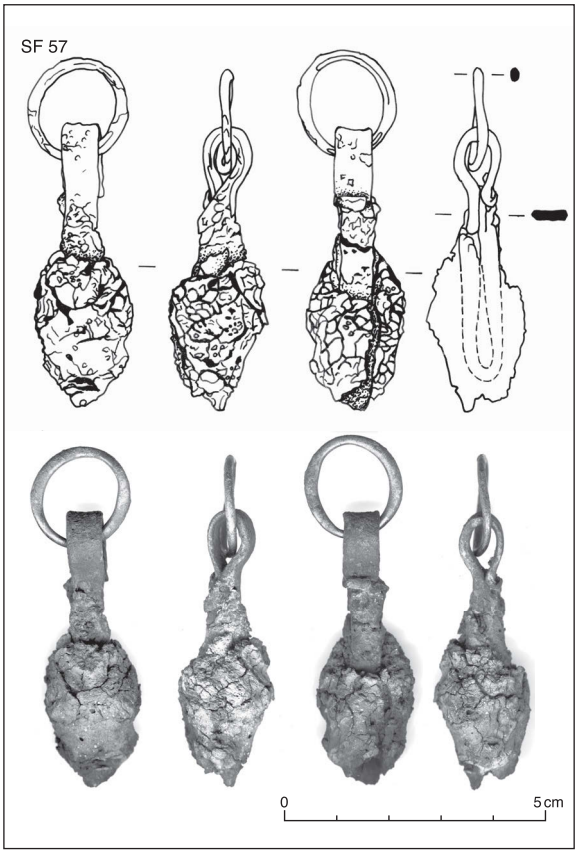

Figure 8. *Pendant amulet from the well/cistern. SF 57. Pendant consisting of a decayed ovoid mass of what may be burnt and mineral-replaced leather moulded around an iron bar that is rolled over at the top to form a suspension loop with everted terminal. A copper-alloy ring is fitted through the loop. Total length 65mm, maximum diameter 19mm, maximum diameter of ring 19mm. (340), lower fill of well 60.*

and on two of the hobnails; this substance is formed on iron objects in wet soils in the presence of phosphate ions, perhaps derived from decaying animal bone (Scott and Eggert 2007). Hoops of this type were made as continuous bands of iron, then hammered down over the staves, with the splaying allowing for the bucket's gradually increasing diameter from bottom to top. They often also served to fix in place two iron side plates with pierced tops into which the handle was fixed. The lead eyelet (SF 56) probably came from such a plate and may be a repair. The Bretton Way hoop, with an internal diameter of about 305mm, would have come from a comparatively large bucket. Two well-preserved buckets from Newstead, Scottish Borders, measured 204mm and 267mm in diameter at the top, two hoops from Blakeney, Gloucestershire, had maximum internal diameters of 183 and 216mm, and several Romano-British bucket hoops in the collections of the British Museum have diameters of between 195 and 355mm (Curle 1911, 310; Crummy 2000, 46; Manning 1985, 103).

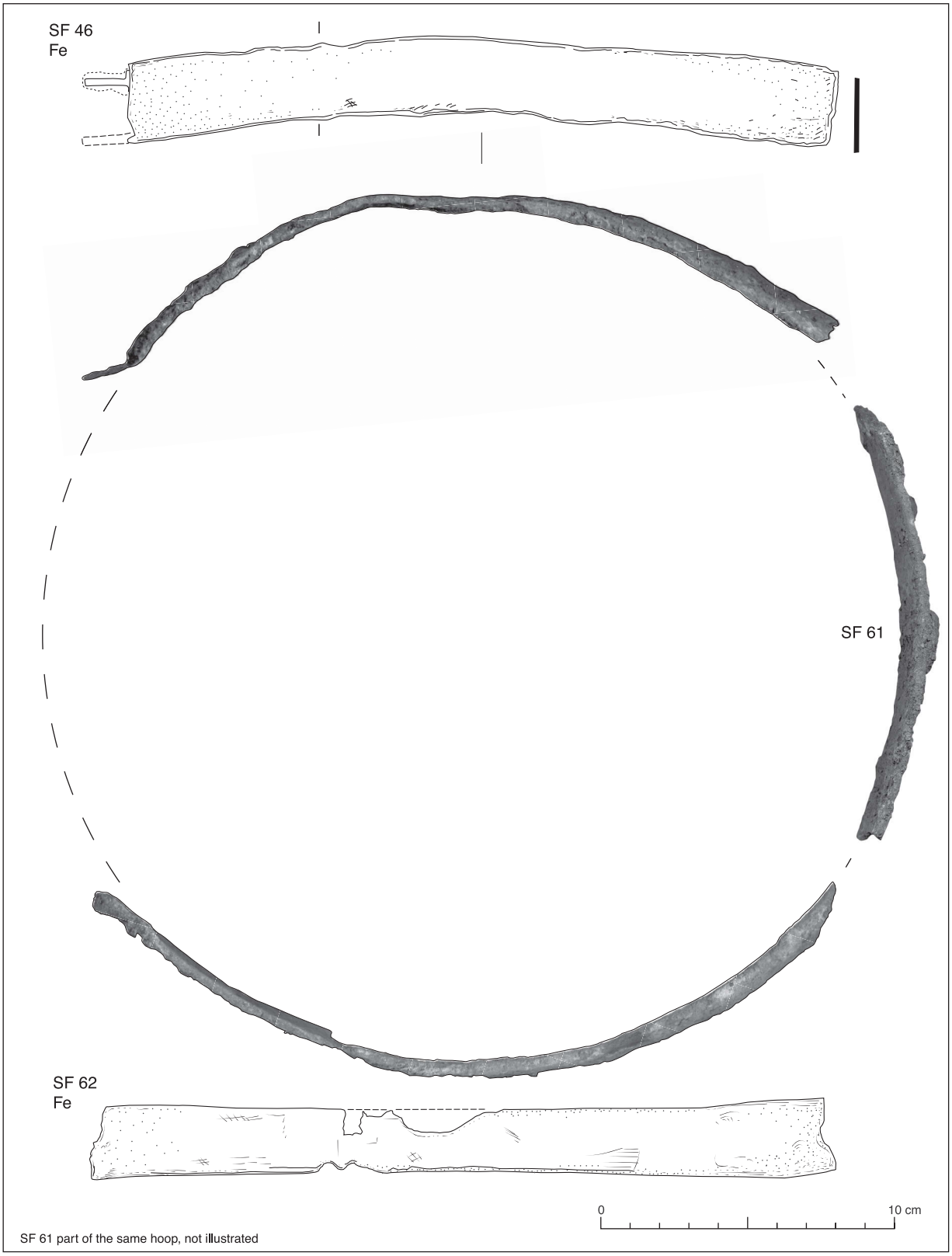

Figure 9. *Iron bucket straps from the well/cistern.*

SFs 46/61/62. (337) and (338), lower fill of well 60. Three fragments from a slightly splayed iron bucket hoop. Width 21-24 mm, thickness 2-3 mm. Internal diameter approximately 305 mm. When complete, the hoop would have been welded into a continuous band that was held in place around the wooden staves not by nails but by knocking it down until it fitted securely.

*Pottery ((*Figs 10–13)
Stephen Upex

The ceramic assemblage from the well and fills of the construction cut was 934 sherds, weight 23,105g, estimated vessel equivalent (EVE) 71.25 (Table 2). It represents 28.6% of the total number of sherds from the site: the average sherd weight for the site as a whole is 13.05g, but from the well it is 24.7g.

Table 2. *Quantification of pottery from the well/cistern, by fill. * = construction layers outside of the main stone lining.*

Context	Sherds		Weight (kg)		EVE	
	Number	% of site total		% of site total		%
59	458	14.0	7.225	16.98	30.28	
107	45		1.010		0.70	
146	159	4.8	2.000		2.20	
183	12		0.403		4.15	
184*	7		0.260		0.32	
324*	64		2.722	6.39	1.50	
326*	2		0.022			
327*	6		0.290		0.10	
334*	8		0.197		1.30	
337	86		4.100	9.63	24.90	
338	46		1.903		0.60	
339	25		1.570		5.10	
340	16		1.403		0.10	
Totals	**934**	**28.6**	**23.105**	**54.3**	**71.25**	**84.8**

Most of the fills contained Lower Nene Valley Grey Wares (LNVGW), Lower Nene Valley Colour Coated Ware (LNVCCW) and Lower Nene Valley Cream and White Ware (LNVCWW). In addition pieces of amphorae were recovered from fill 146, and samian from fill 340 while fragments of Oxford Red Ware (OXRW) came from fills 59, 146 and 338.

There appears to be very little difference in the dating of the pottery from the upper fill (59) to that of the lowest (340). Several pieces are probably residual. The handle, in a grey hard fabric with grit inclusions and a sandy feel (No. 1), should probably fall into this category and is paralleled at Orton Hall Farm and dated to the 3rd century (Perrin 1996, fig. 98, no. 437). There are several large storage jars in both Roman shell-gritted ware (RSGW) and LNVGW that may be slightly earlier than the main body of the assemblage. The jars (Nos 2–5), all in grey ware and from fills 59, 337 and 340, may well have been made in the 3rd century. Numbers 2 and 3 have characteristic ridges on the shoulder which can be paralleled at Chesterton in the late 3rd century (Perrin 1999, fig. 51, no. 18) and No. 4, a wide mouthed jar, would fit easily into a similar date range and matches vessels from Fengate and Chesterton (Hayes 1978; Perrin 1999, fig. 57). Similarly several large jars in shell-gritted fabrics from the layers within the well are very difficult to date precisely and may be residual, however, the undercut rims on Nos 5–7 are similar to late 4th-century jars from Great Casterton and may well date to this period (Gillam 1951, fig. 8, nos 17–20 & fig. 21, no. 21). Incised and cut decoration (No. 9) is also a common 4th-century characteristic (Perrin 1996, fig. 162, no. 486; 1999, 120) and appears in various forms on large jars of this period from Stibbington (Perrin 2008, fig. 31, no. 215), Water Newton (Perrin 1999, fig. 65, no. 274) and Orton Hall Farm (Perrin 1996, fig. 104, no 583).

Of the LNVCCW jars, almost all are from the 4th century, although 4th-century jars in general exhibit a tremendous variation in form (vessels having short, medium or tall necks and curved round or square rims) and size (from small to large and short and tall; see for example Perrin 1999, 106; Howe *et al.* 1980, fig. 7, 75–77). The jars from the well fit comfortably within the range of 4th-century vessel types and vary from having rounded rims (No. 10) to rims that are curved, slightly undercut and with a short neck (see for example Nos 11–13). The key to the late date of both the large and the small jars (Nos 14 and 15) is the colour coating which is in the typical repertoire of colours from this period – reddish browns and browns, often fired to a lustre (see Howe *et al.* 1980, fig. 7, nos 75–77). The vessels from Bretton Way can certainly be matched to those recorded from the late 4th-century deposits at the kiln site at Stibbington and may actually be Stibbington products (Perrin 2008, fig. 21, nos 76–80). The narrow mouthed jar from Bretton Way (No. 16) is identical to one from the Stibbington well deposit which is dated to the late 4th or early 5th century (Perrin 2008, fig.29, no. 199).

The Bretton Way well also contained numbers of flanged bowls and straight or slightly curved sided, plain rimmed dishes (see Nos 17–23). Apart from No. 21, which is in a reddish brown crisply fired fabric with grit inclusions, the illustrated flanged bowls are all colour coated fabrics. Vessel No. 20 is certainly similar in fabric and form to a vessel recovered from a 'sump' at Lynch Farm II and dated to the late 4th century (Upex forthcoming A). The flanged colour coated bowl (see Nos 17–18 and 22) is by far the most common form of late vessels made in the Nene valley. These were produced in huge numbers and exported widely and may have been used as tureens. There is little to date precisely this form of vessel at present. The grey ware predecessors of the colour coated versions tend to be fairly shallow and have high flanged rims and this may have been the case with early forms of the colour coated versions of this form of vessel (Hartley 1960, 26, fig. 4, 16). However, as a general rule a late date appears to be linked with deeper and larger colour coated vessels. The really deep versions (see No. 17) are probably late 4th century and appear in the destruction layer deposits dated to after *c.* AD 375 at Great Casterton (Gillam 1951, fig. 9, no. 35). Such a date also is matched by the range of vessels from Stibbington (Perrin 2008, fig. 19).

Plain rimmed dishes (such as Nos 19–20, 23 and 24) were made from the later 2nd century onward although most are 4th century in date and there is little to distinguish any chronological differences between the vessels, other than that the earlier ones often

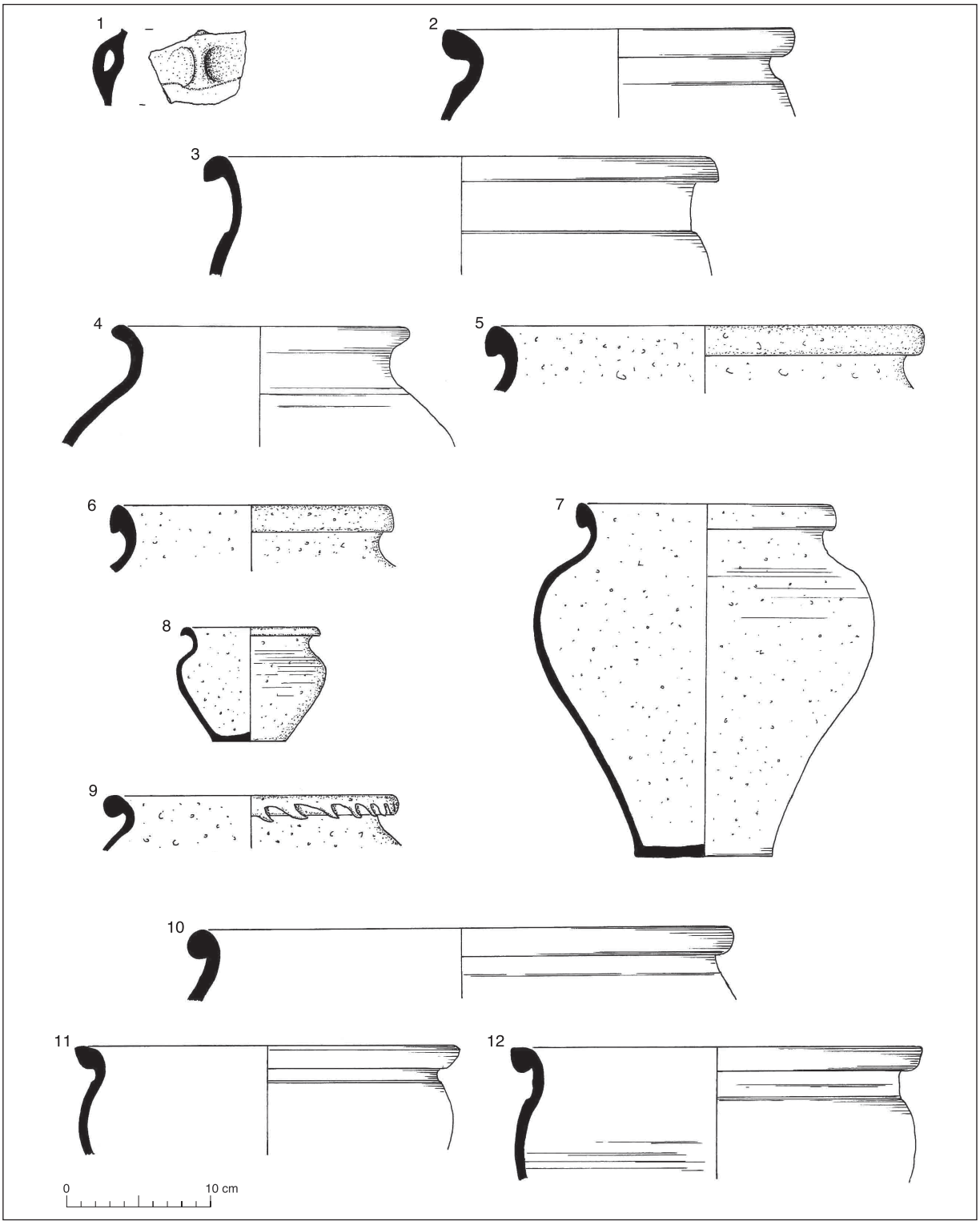

Figure 10. *Pottery from the well/cistern (Nos. 1-12).*

1. Grey/hard /grit inclusion /sandy feel. Handle from a jug or cup (59)
2. LNVGW. Jar. (59)
3. LNVGW. Jar (337)
4. LNVGW. Jar (340)
5. RSGW. Jar (337)
6. RSGW. Jar (337)
7. RSGW. Jar (340)
8. RSGW. Sooting to outside surface. Complete jar, unworn base (337. SF 54)
9. RSGW. Jar. Another fragment from layer 337 which is burnt. (184)
10. LNVCCW. Jar. (59)
11. LNVCCW. Jar (146)
12. LNVCCW. Jar (146)

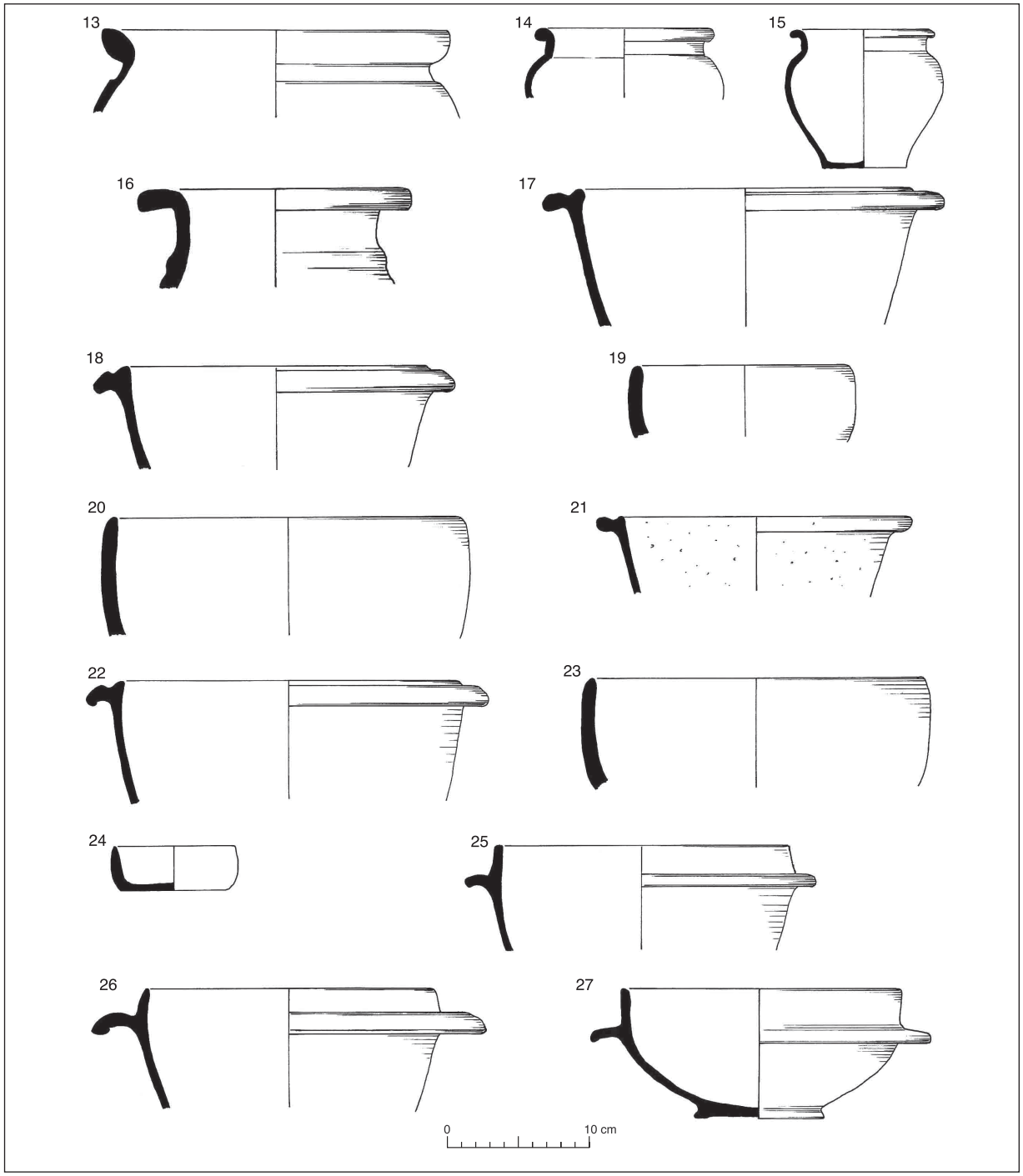

Figure 11. *Pottery from the well/cistern (Nos. 13-27).*

13. LNVCCW. Jar (338)
14. LNVCCW. Jar (337)
15. LNVCCW. Near complete jar with slight external lustre, unworn base. (337. SF 53)
16. LNVCCW. Narrow mouth jar (59)
17. LNVCCW. Flanged bowl (59)
18. LNVCCW. Flanged bowl (59)
19. LNVCCW. Dish (59)
20. LNVCCW. Dish (59)
21. Crisply fired with grit inclusions, reddish brown throughout. Flanged bowl (107)
22. LNVCCW. Flanged bowl (337)
23. LNVCCW. Dish (337)
24. NVCCW. Dish. Complete vessel in two halves, one found in fill 59. (183)
25. LNVCCW. Bowl- imitation samian form 38, with slight internal lustre (337)
26. OXRW. Bowl- imitation samian form 38 (337)
27. LNVCCW. Near complete bowl- imitation samian form 38 with very worn foot ring, (338. SF 101)

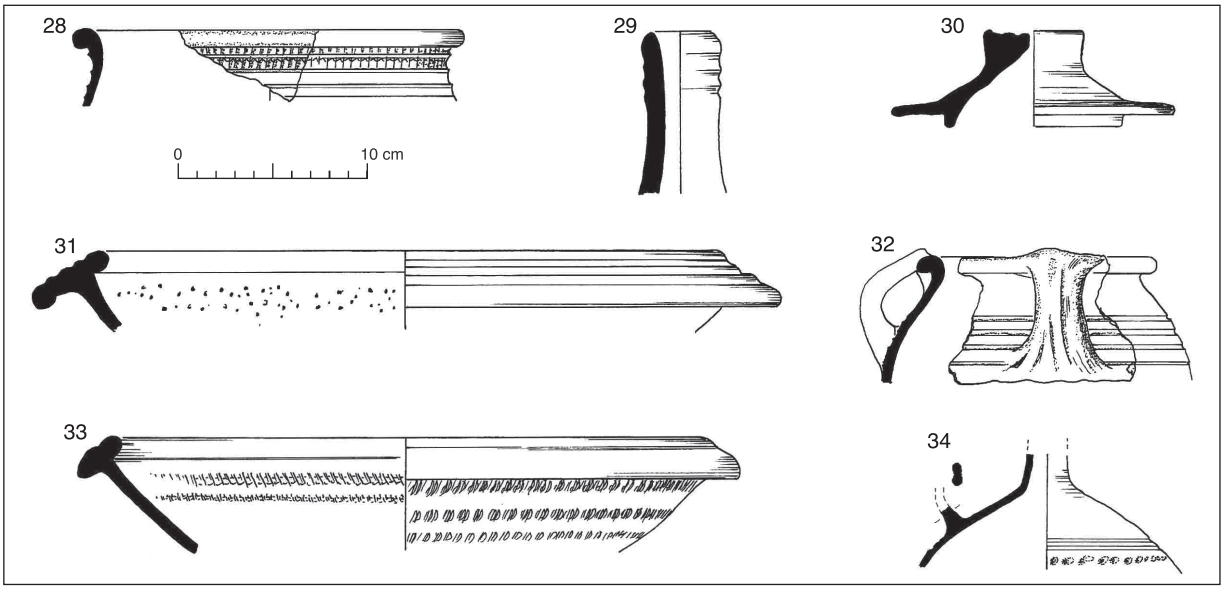

Figure 12. *Pottery from the well/cistern (Nos. 28-34).*

28. OXRW. Jar (146)
29. LNVCCW. Neck of a flask (59)
30. LNVCCW. Lid with steam hole (some sooting on rim) (337)
31. Hartley Fabric 1. Mortarium (337)
32. LNVCCW. Bowl with handle(s) (146)
33. LNVCCW. Large dish with both external rouletted decoration in three bands and internal rouletted decoration in two bands (338)
34. LNVCCW. Upper part of flask with white over-painted dot decoration (340)

have a chamfer between the wall and the base of the vessel – also common on grey ware dishes (see for example Gurney 1985, fig. 88, no. 159; fig. 89, no. 180 and fig. 91, no. 230; Gillam 1970, nos 322–335). Thus, No. 24 is typical of the late form of vessels without any chamfer and the remaining basal sherds from the well deposits are all similar to this and date to the 4th century. All of the illustrated LNVCC vessels again have typical colour coats that match the repertoire from the Stibbington kilns and are fairly certainly dated to the late 4th or early 5th century (see Perrin 2008, fig. 21, nos 70–75, Howe *et al.* 1980, fig. 7, no. 87).

Vessel Nos 25–27 are all imitation samian form 38 which started to be produced in Nene valley kilns in the second half of the 2nd century and continued in production until the end of the pottery industry in the late 4th and early 5th century. They were being made at Stibbington at this late period and the examples illustrated (Nos 25 and 27) may well be Stibbington products with a characteristic lustre, typical of this late date in kiln firing technology (Perrin 2008, fig. 20, nos 60–63; see also Gillam 1951, fig. 9, no. 30 for a vessel from the post- *c.* AD 375 deposit at Great Casterton). An Oxford red ware jar (No. 28) came from context 146 – such vessels are typical late imports into the Nene valley.

Of the remaining illustrated colour coated vessels, the flask neck (No. 29) is similar to examples from Orton Hall Farm, Chesterton, Stibbington and Orton Longueville, all of which derive from late 4th-century contexts (Perrin 1996, fig. 101. no. 503; 1999, fig. 62, no. 191; 2008, fig. 22, no 99; Dakin 1961, fig. 7, no. 64). The lid with what could be a steam hole (No. 30) would have been used in conjunction with narrow mouthed jars and would have fitted, for example, the lid of an illustrated jar (No. 21). The lid flange in this example is comparatively wide and it would have fitted a range of jars from 9 to 13cm wide. This form of lid is mainly of 4th-century date and appears in many of the latest deposits – at Great Casterton after *c.* AD 375, from the well deposit at Stibbington (lids with and without steam holes), and from the museum collection at Peterborough (Gillam 1951, fig. 10, nos 49–50; Perrin 2008, fig. 31, nos 208–209, Howe *et al.* 1980, fig. 6, nos 72–73). The illustrated mortarium (No. 31) is almost certainly a Stibbington product and from the late kiln site excavated in 1969 (Perrin 2008, fig. 23, nos 115–121). The rim is a common form on such late vessels and falls within the typological 4th-century grouping outlined by Hartley (1996, see for example nos M36–M46).

Vessel No. 32 is a bowl or jug with a single handle remaining but which may have had two or even three handles originally. Such vessels are very late in the production repertoire of the local potters and occur commonly with brown or reddish brown colour coats with white, cream or pinkish white fabrics. Vessels with handles seem common in late 4th-century contexts and occur as jars, bowls or large cups (see, for example, Perrin 2008, nos 183–186 and 205) and can be decorated with bands of rouletting, bosses, barbotine paint or just left plain. The Bretton Way vessel is decorated simply with four grooved bands, over which the handle has been attached. A complete vessel from

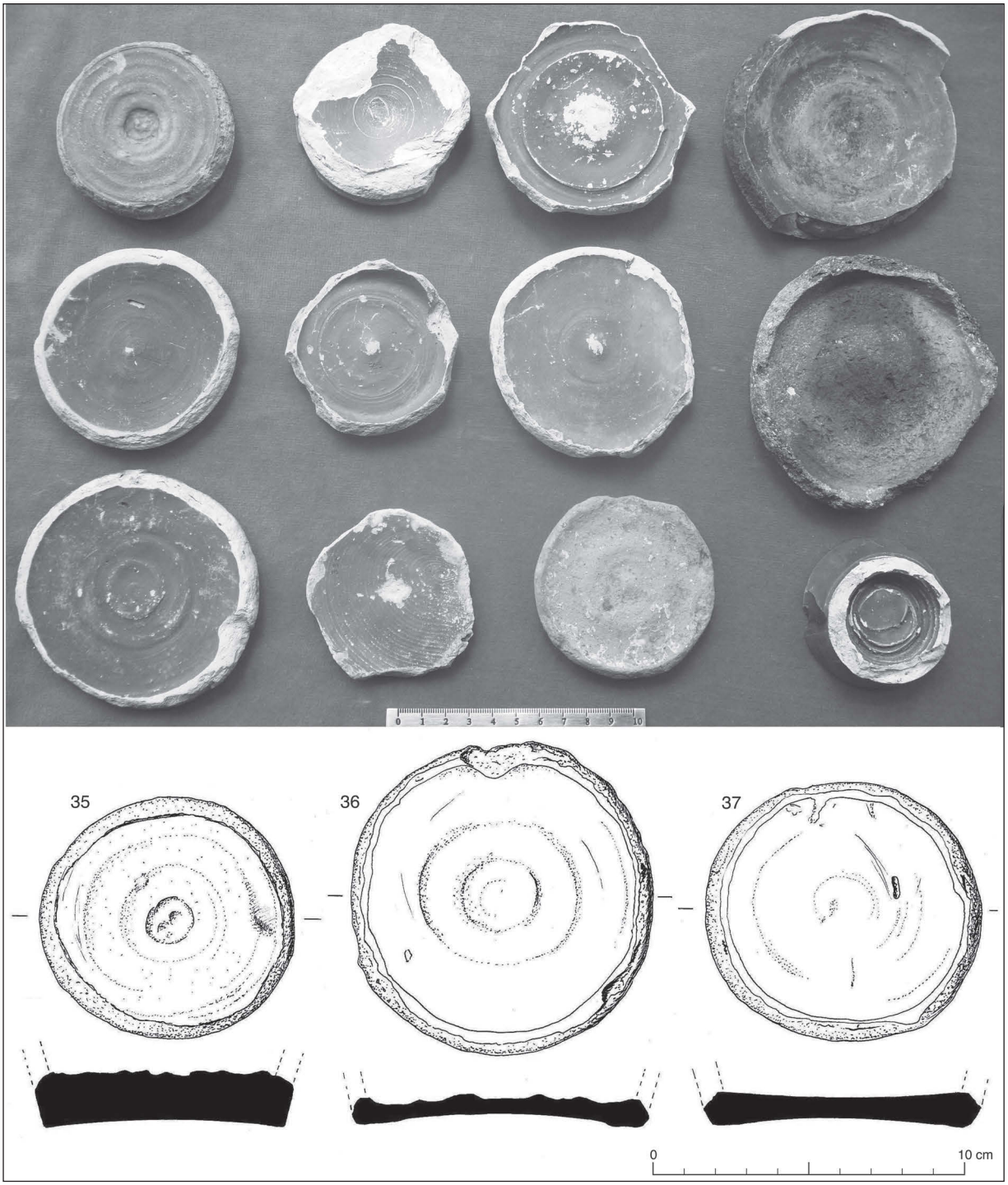

Figure 13. *Pottery bases/discs from the well/cistern (Nos. 35-37). The photo shows the range and variety of pottery discs from the well. Selected examples are drawn.*

35. Base formed into a disc. LNVGW. (337)
36. Base formed into a disc. LNVCCW. (337)
37. Base formed into a disc. LNVCCW. (338)

Barnwell, found in a deposit with three other complete vessels, is similar to the Bretton Way example and dates to the late 4th or early 5th century (Upex, forthcoming B), while vessels from Stibbington are all of a similar date, especially a three-handled bowl from a well deposit (Perrin 2008, fig. 31, no. 205).

Two vessels (Nos 33 and 34) from the lower well fills (338 and 340) are also dated to the late 4th century. The wide platter (No. 33) has three rows of rouletted decoration on the exterior and two rows on the

inner surface. The rouletting wheel used is different on both these surfaces. Platters of this form and in dark brown and chocolate colour coats on a white fabric were found at the Stibbington kiln site and at Great Casterton in the deposit dated to after *c.* AD 375 (Perrin 2008, fig. 22, nos 103–6; Gillam 1951, fig. 10, nos 43–5). In both cases internal and external scored lines formed the only decoration but the style, similarity of colour coating and fabric of the vessels from these two dated sites is so similar to the Bretton Way example that they are clearly contemporary.

The shoulder of a small flagon (No. 34) from the very bottom of the well (fill 340) is one of the single-handed forms that appear to be common in the 4th century. The vessel has a dark brown exterior colour coat with a row of white/cream over painted dots below two scored lines. The rim is missing but the narrowness of the neck makes it likely that it was a disc necked vessel (see Perrin 1999, fig. 62, nos 188–9; 2008, fig. 28, no. 181) or something very similar. Flagons of this form were being produced from the 3rd century onwards but the style of decoration is so similar to later vessels that it would be sensible to see this flagon as belonging to the mid to late 4th century. A fragment of a similar colour coated vessel from Stonea (Cameron 1996, fig. 152, no. 24) has the same handle form but the decoration consists of a single line of rouletting and an over-painted curved design (see also Gillam 1970, fig. 3, no. 19). The Great Casterton 'destruction layer' also produced flagons of similar type dated to after *c.* 375 (Gillam 1951, fig. 8, no. 1) while the range and variation of design and decoration from Stibbington, including late 4th- and early 5th-century examples from the well, now push the production of this type of vessel to the end of Roman commercial production in the Nene valley (Perrin 2008, fig. 28).

Of particular interest in the ceramic assemblage from the Bretton Way well is a series of 24 pottery bases (Table 3), formed from jars, bowls and beakers, which can be classified into three groups. Firstly, those bases which are very rough and appear simply to be the broken bases of pottery vessels (x 9). Secondly, a series of twelve bases (Fig. 13) which appear to have been partly chipped or trimmed, to remove some of the wall part of the vessel. Lastly, there are three examples which show evidence of being deliberately worked by having the junction between the base and the wall of the vessel trimmed down to form a chamfer (Nos 35–37). This trimming would appear to have involved two processes. First the chipping away from the base of the remaining wall part of the vessel and then the rubbing of the inside of the base onto some form of abrasive surface (which occurred on sherd Nos 35–37). This produced a narrow, smooth, flat surface on the inner side of the base.

The fabrics of the relevant vessels vary with single examples in a crisply fired reddish brown fabric, Roman Shell Gritted Ware and Lower Nene Valley Grey Ware. The remaining examples are all in lower Nene valley colour coated wares. The diameters of the bases vary from 46mm (cut down from a beaker?) up to 125mm which was cut from the base of a large Roman shell gritted jar – the average diameter was 78mm. The possible function(s) of these objects is of some interest and debate and is fully discussed below.

Leather Shoes (Plate 2, Fig. 14)
Quita Mould

Roman leather was recovered from four of the lower well fills (337, 338, 339, 340), which together produced more than forty-six fragments of footwear. More than three quarters of the assemblage consists of small pieces broken from shoes made of multiple components and it is difficult to be certain how many shoes are represented by the fragments recovered. Consideration of the individual components from each context suggests that at least fourteen shoes and potentially as many as sixteen were present. All the leather came from footwear, no waste leather from

Table 3. *The pottery discs and vessel bases from the well/cistern.*
LNVCCW = Lower Nene Valley Colour Coated ware; RSGW = Roman Shell-Gritted ware

Context	Total No. of Bases	Fabrics	Rough Base	Part-Chipped Bases	Chipped and Smoothed Bases
59	2	1 = Crisply fired with grit inclusions, reddish brown throughout. 1 = LNVCCW	1	1	
146	1	1 = LNVCCW	1		
183	1	1 = LNVCCW	1		
324	2	2 = LNVCCW	2		
327	2	2 = LNVCCW	1	1	
337	9	7 = LNVCCW 1 = RSGW 1 = LNVGW		8	1
338	5	5 = LNVCCW	1	2	2
339	1	1 = LNVCCW	1		
340	1	1 = LNVCCW	1		
Totals	**24**		**9**	**12**	**3**

the manufacture or repair of shoes or other leather goods being found. Shoes for both the left and the right foot are present, although the group contains more left footed shoes than right (of the shoes sufficiently complete for the foot to be determined 6 are left, 1 possibly left, and 2 are right) and sizes to fit adult, small adult/adolescent and children are represented. At least one shoe had the upper cut from the shoe bottom before it had been thrown away. It would be anticipated that the footwear from the lower fills would be in better condition than that from the upper fills; but this was not the case. The material from the lowest fill (340) was badly broken, with the better preserved examples occurring higher up the sequence in fill 338.

One nailed and stitched shoe (Plate 2, Fig. 14, SF 60) from this particular fill survives in good condition, with much of its upper preserved. It has a line of tunnel stitching running from the broken throat area down toward the toe marking the former position of a row of decorative stitching. The shoe is of Portchester-J style dated to the last quarter of the 3rd and first half of the 4th centuries (Volken 2012, 126 and 122, fig. 105). To date, other examples of this shoe style that have been recovered have lacked any indication of a method of fastening and sadly this is also the case with the Bretton Way shoe. Once rather a rarity, a growing number of shoes of this style have been recorded from this country including an example from a basal fill of a Roman well at the Tower Works, Peterborough (Mould 2005). The Bretton Way shoe appears to have decorative tooling, darkened lines made by impressing a heated iron tool known as a creaser, that take the form of slightly diverging lines on the back part (heel area) of the upper; a feature that also decorates the toe area of the shoe from the Tower Works. The shoe style appears to have been widely worn being found on rural sites in Bedfordshire, Buckinghamshire, Northamptonshire and Lincolnshire as well as London, Portchester in Hampshire (Ambrose 1975, 250–1, fig. 133, no. 267), Ickham in Kent (Mould 2010, 210, no. 520) and Skeldergate, York (MacGregor 1978, 31, fig. 28 no. 353).

As a whole, the group contains a notably high proportion of nailed and stitched shoes (ten of the 14/16 shoes represented). Of the 328 nailed shoes from Drapers' Gardens in the City of London, for example, only five nailed and stitched examples were recognised, all coming from deposits dating to the first half of the 2nd century, although 3rd- and 4th-century footwear was present in the assemblage, albeit not well represented (Mould 2012). One might speculate on the relatively high number apparent at Bretton Way: it is conceivable that the nailed and stitched construction was more favoured in the provinces than the city or that it might be a feature period specific to the 4th century. Questions of this nature may only be addressed by the recovery of large, well-dated groups (closely dated to the 4th century) particularly from rural settlements, something that appears to have been lacking thus far.

Figure 14. *Leather shoe from the well/cistern. See also Plate 2.*
SF 60. Leather shoe of nailed and stitched construction, left foot, small adult/adolescent size. Near complete shoe with closed upper of one-piece construction joining with a single side seam; bottom unit and upper attached so some details obscured. Sole with oval toe and natural tread tapering slightly to a wide seat, no distinct waist. A line of widely-spaced nailing around the edge with a single nail at the centre of the seat, none present at the waist or tread, nailing type 1 variant. Tacking thong running parallel to the edge between the nailing exposed where the grain side is heavily worn. Insole has a row of constructional thonging running down the centre from waist to seat (tread area cannot be seen because of the upper) type 1. The upper has a single overlapping side seam on the right side with a vertical line of paired large stitch holes; a broken piece from the same seam has the widely-spaced tacking thong 4mm present. Much of the top edge and the throat area is broken. A row of decorative tunnel stitching runs vertically from throat to toe, the paired stitches 3mm apart. There are also decorative, radiating crease lines (linear tooling) present on a fragment of upper. Remains of a heel stiffener present at centre back, surviving height of upper at centre back 53mm.Upper leather bovine 2.56mm thick. Estimated size Adult 1(33). Sole length 240mm, insole can be no longer than 220mm, insole width at tread 75mm (estimated), waist 60mm, seat 50mm. (338), lower fill of well 60.

Bone Sledge Runners (Fig. 15)
Nina Crummy

The two bone sledge runners from fills 338 and 183 can be distinguished from the very similar skates by having vertical rather than horizontal holes for the attachment straps (MacGregor 1985, 144). The complete example from Bretton Way (SF 72) is made from a horse radius and shows less wear than the fragment (SF 87), which has the longitudinal scratch marks on its underside that typify use on ice. In Britain, bone sledge runners and skates usually come from Late Saxon and early medieval contexts, with perhaps the earliest introductions being Middle Saxon, and there are substantial groups of skates from sites such as Thetford, London and York (MacGregor 1985, 141–6; Rogerson and Dallas 1984,179, figs 195–6; MacGregor 1976, 65; MacGregor *et al.* 1999). The Bretton Way runners are therefore the earliest stratified examples of these objects from Britain, pushing the date of their use here back by several hundred years. Were it not for the recovery of other Roman period finds from the well, this would inevitably cast doubt on the validity of the dating of the backfill, much as a horse bone skate found in late 4th-century dump in London has previously been assumed to be medieval and

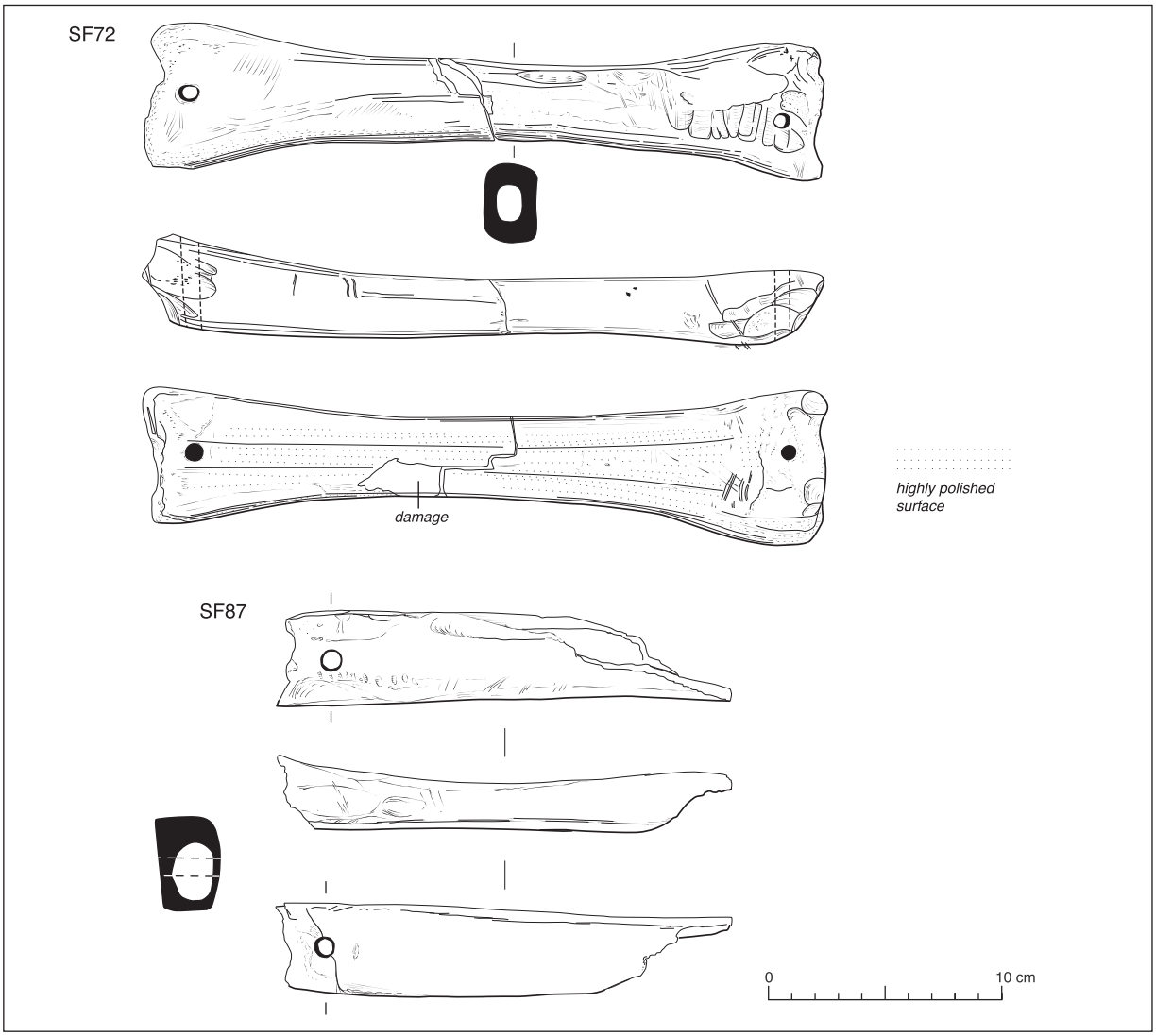

Figure 15. *Bone sledge runners from the well/cistern.*
SF 72. Sledge runner made from a horse radius. The proximal articulation has been cut down to form a blunt end, the distal articulation (unfused) shows only slight cut marks. A hole has been drilled through each end. The ulna has been trimmed off but left rough and that side of the bone (the upper face in use) is little worn. The flat central area of the underside, in contrast, is highly polished but has few of the longitudinal scratch marks seen on well-used runners and on bone skates. The curved sides are also polished, though less markedly so. Length 290 mm. (183), lower fill of well 60.

SF 87. Fragment of a sledge runner as SF 72 above. The upper face is well worn and slightly polished. The underside is very highly polished on all surfaces and has many scratch marks along its length. Both ends are broken, one close to the attachment hole. Length 193 mm. (338), lower fill of well 60.

intrusive (Cardiff 2006, 11). However, both runners and skates were used in the prehistoric period on the continent, and there are many skates from Roman period contexts in Germany, Austria and Hungary (Barthel 1969, 211–12, 222–4; MacGregor 1985, 145; Choyke 1996, 307–19; Kunst 2002, 263–269; Groh and Sedlmayer 2006, 909). Set against the continental evidence, a Late Roman date for the Bretton Way runners and the London skate is assured. Such an early introduction date for these objects can be seen as an aspect of the increasing northern continental influence on the material culture of Britain in the Late Roman period, and that both sites lie in eastern England accords with the influxes, both official and uninvited, of northern European troops and other settlers to this area.

Folded Bark Objects (Fig. 16)
Caroline Cartwright

Three small folded wooden objects from fill 338 have been identified as birch bark (Fig. 16). This material can be detached relatively easily from the tree in spring or early summer by slitting the bark lengthwise and pulling it away from the trunk or branches of the tree. The resultant bark, which should be spread open and kept pressed flat during storage to prevent it rolling up, is strong and water-resistant and can readily be bent, cut, sewn or perforated. In order to create sharp folds or bends in fresh birch bark, the material should be scored with a blunt stylus. Dried or stored birch bark may be steamed or water-soaked to soften it before modification. The fungicidal properties within birch bark may help preserve the artefact itself as well as its contents. No evidence for stitching or pegging could be detected microscopically in the items from Bretton Way, and, coupled with their very fragmentary nature, it cannot be established conclusively whether these folded birch bark artefacts are to be classified as containers, vessels or votive objects. However their small size argues against a type of vessel or container, making votive deposition the most likely interpretation. They may perhaps once have held written 'curses', no traces of which remain: further discussion on this issue is given below.

Animal Bone (Fig. 17)
Chris Faine

The substantial faunal assemblage from the well (55.383kg) is dominated by cattle (237 bone fragments). At least thirteen individuals are represented in the form of two articulated skeletons, eleven partial crania and a number of horncores. There is preponderance (68.4%) of left hand sided elements, although interestingly there is little evidence of butchery on the complete skeletons or disarticulated material. Some 80% of elements are from adult animals, i.e. over 2 years of age, with two instances of juvenile crania. Eleven ageable mandibles were recovered, suggesting that animals were killed once physically mature. Although a small sample, morphological analysis of the horncores suggests a largely male population with three females and one possible castrate. A number of the horncores are grooved, a condition also noted in cattle at nearby Haddon Lodge (Baxter 2003) but not seen elsewhere in the area. Withers heights were available from 17 elements with an average of 1.19m.

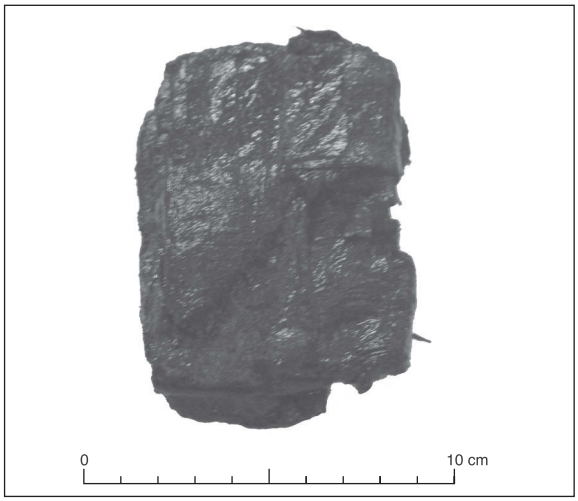

Figure 16. *One of the folded birch bark objects.*

Several elements recovered from the assemblage show evidence of bone working, with a scapula and mandible having had square sections cut from the blade and ramus respectively. A cattle skull from context 337 shows a series of eight holes drilled down the length of the parietal suture (Fig. 17), with several smaller groups of drilled holes on the parietal bones themselves. Whilst this has been interpreted as an attempt to weaken the suture prior to splitting, the presence of the other holes on the cranium suggest it may represent a 'trial piece' of some kind. At the time of writing, no comparable examples of such marks have been found.

A naturally shed red deer antler burr was also recovered from fill 337: all of its tines had been sawn off. Five dog bones from the same fill comprise fragmentary humerii, inominate and partial crania. Although no measurements were possible, one skull comes from a relatively large animal, most probably male due to the size of the sagittal crest.

Whilst it is tempting to consider the material from the well and the surrounding features separately, species/body part distribution and ageing data all show close similarities with each other (aside from the large number of crania from the well). Although the material from the latter is no doubt a separate episode of deposition, there is no evidence to suggest that animals were particularity selected or culled for the purpose, being instead drawn from livestock already present in the settlement. Further discussion on the well assemblage appears below.

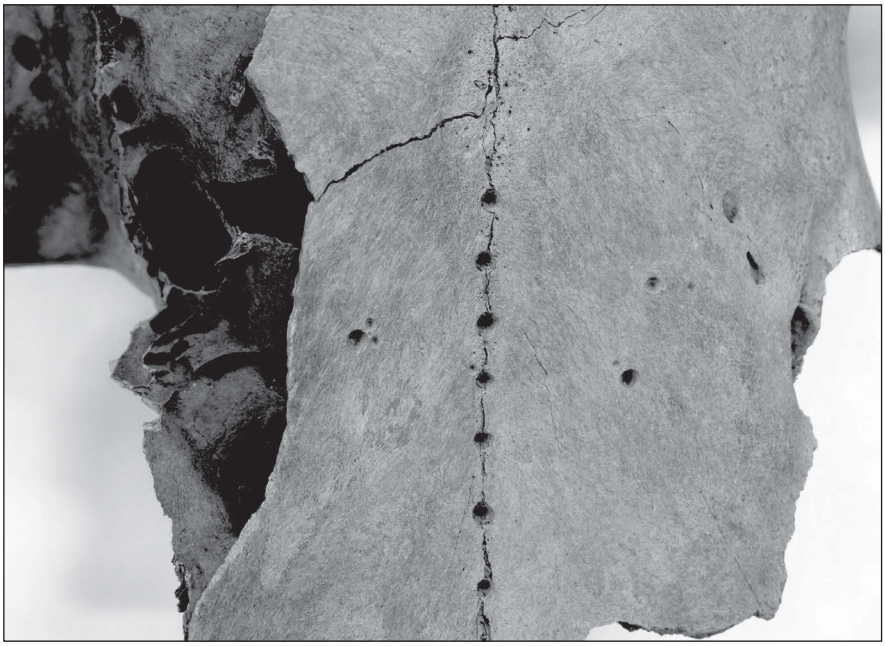

Figure 17. *Cattle skull from well/cistern fill 337, showing the holes drilled along the parietal suture.*

Plant Macrofossils
Rachel Fosberry

The charred plant assemblage from the well consists of cereal grains of wheat and barley and chaff items including barley rachis fragments, glume bases and rachis fragments of spelt and emmer wheat and occasional indeterminate awn fragments. The charred remains were dispersed throughout the well deposits, being slightly more abundant in the top fill (107). Charcoal was present in the three of the upper fills (107, 146 and 183). The waterlogged plant remains recovered from the samples represent a number of species from a variety of habitats of which disturbed/waste ground and grassy places are the most common, particularly in the lower fills.

Only a few of the plant species represented at Bretton Way are usually found in crop fields on cultivated land. Notably these include corncockle (*Agrostemma githago*), thought to be a Roman introduction (Godwin 1984), Bromes (*Bromus* sp.) and stinking mayweed (*Anthemis cotula*), a plant that grows on clay soils and became more common during the Roman period when improved cultivation techniques allowed agricultural expansion onto marginal soils.

By far the most numerous and diverse group of plant remains recovered indicate ground that had been disturbed by human activity or left to waste. Seeds of nettles of both the stinging and small nettle variety (*Urtica dioica*, *U. urens*) occurred in large numbers in all of the well fills other than the top one and were particularly abundant in the lower fills. Nettles produce enormous quantities of seeds but they must have been growing close to the well or were otherwise deliberately placed into it. Abundant seeds of knotgrass (*Polygonum aviculare*) were also present in the lower fills of the well. This is a scrambling plant that rapidly colonises open ground. Other plants of open disturbed ground that were recovered include Orache (*Atriplex prostrata/patula*), Goosefoot (*Chenopodium* spp.), henbane (*Hyoscyamus niger*), thistles (*Carduus/Cirsium* sp.) and mallows (*Malva* sp.) together with grasses (Poaceae). Many of the seeds recovered represent plants that have more diverse habitats and can be found on arable or waste ground, such as field penny cress (*Thlaspi arvense*), black-bindweed (*Fallopia convolvulus*), poppy (*Papaver* sp.), fumitory (*Fumaria officinalis*), docks (*Rumex* sp.), parsely-piert (*Aphanes arvensis*), dead nettles (*Lamium* sp.) and chickweed (*Stellaria media*).

Several plants that grow in grassland communities were represented and may suggest local pasture. They include fairy flax (*Linum catharticum*), agrimony (*Agrimonia eupatoria*), hawkbit (*Leontodon* sp.), ox-eye daisy (*Leucanthemum vulgare*), self-heal (*Prunella vulgaris*), meadow buttercup (*Ranunculus* cf. *Repens*) and grasses. Again, there are several plant species that overlap with other habitats such as greater plantain (*Plantago major*), red bartsia (*Odontites vernus*) and sainfoin (*Onobrychis viciifolia*).

A number of the plants present grow in wet/damp soils and are commonly found near ponds and rivers. These include bittersweet (*Solanum dulcamara*), meadow-rue (*Thalictrum flavum*), rushes (*Juncus* sp.), gypsywort (*Lycopus europaeus*), sedges (*Carex* sp.), spike-rush (*Eleocharis palustris*), Great fen sedge (*Cladium mariscus*), yellow flag (*Iris pseudacorus*) and hemlock (*Conium maculatum*). A number of these species were found as charred specimens in the upper fills of the well. It is possible that they were growing on the margins of wet fields and were harvested with a cereal crop. Alternatively they may have originated from burnt flooring, fuel or thatch material.

Comparisons with contemporary sites in the area, such as *Durobrivae*, Castor, and Orton Hall Farm, is limited as environmental sampling was not per-

formed when these sites were excavated. Generally, Roman wells tend to fill naturally and the preserved macrofossils often represent damp, overgrown scrub communities consistent with abandonment.

Pollen
Steve Boreham

Basal fills of the well were sampled for pollen (fills 340, 339 and 338). The sample from fill 340 contains significant quantities of pollen (113,584 grains per ml), whilst the remaining samples are almost barren. Preservation of the fossil pollen grains (palynomorphs) is in general quite good, even in the sparse samples.

Pollen from fill 340 is dominated by grass (Poaceae) pollen (32.1%), with a wide range of herbs including members of the cabbage family (Brassicaceae) (4.9%), meadowsweet (*Filipendula*) (4.9%), dock (*Rumex*) (5.6%), the disturbed ground indicator ribwort plantain (*Plantago lanceolata*) (7.4%), and cereal pollen (7.4%). Arboreal taxa include alder (*Alnus*) (1.9%), birch (*Betula*) (3.1%), ash (*Fraxinus*) (1.2%), and hazel (*Corylus*) (2.5%). Fern spores together account for 7.4%, and obligate aquatic plants are represented by the fringing emergent bur-reed (*Sparganium*) (0.6%). This pollen assemblage has a diverse selection of herb taxa typical of grassland, damp meadows (tall herb) and riparian (bank-side) habitats. However, there is also a strong signal of arable activity, with abundant cereal pollen and indicators of disturbed ground. There is also a faint signal from birch and hazel scrub, and this is an ostensibly treeless environment with apparently very little local wetland.

Discussion

The Settlement

The small Iron Age settlement was abandoned in the 1st century AD and a Roman field system developed that continued until the late 3rd century. Similar shifts in settlement location have been observed at Werrington (Mackreth 1988) and Orton Longueville, Monument 97 (Mackreth 2001), where they were interpreted as marking a change from a mixed economy to animal husbandry. This occurrence is matched by the expansion of a number of new settlements in the area in the latter half of the 1st century AD (e.g. Orton Hall Farm; Mackreth 1996). A possible decline in settlement in the 2nd to early 3rd centuries has been noted at sites including Longthorpe Farm, Werrington and Maxey, possibly because of the expanding enclosure systems at the expense of reduced settlement. The construction of the aisled barn at Bretton Way accords with the general local pattern, similar barns being constructed at Longthorpe Farm and Orton Hall Farm. This may indicate increased prosperity in the early 3rd century AD.

Had the Bretton Way finds and environmental assemblage not included the items from the well, it would have conformed to the general pattern of deposition on rural sites in eastern England – 'rural' in the strict sense of working farms or hamlets but not including villas. The numbers of small finds from such sites are low despite long and unbroken occupation. Ironwork predominates, particularly tools and structural fittings, and there tends to be an absence of the mass-produced copper alloy and bone objects typical of urban occupation, most notably female-gendered dress accessories, toilet instruments, household and recreational equipment and other small personalia. These characteristics give an overall picture of subsistence economy and a lack of engagement with the conspicuous consumption of material culture seen in towns (Crummy 2012, 109–10, fig. 7.3).

Faunal remains from the early phases of activity are typical of the period. The preponderance of cattle is well documented in the area, with similar species distribution being seen in Roman phases from Haddon Lodge (Baxter 2003), Orton Hall Farm (King 1996) and Barnack (Harman 1993). A mixed economy was probably practiced, with meat being the primary product and with older animals kept for traction. Secondary carcass processing appears to have been carried out elsewhere. Cattle are of similar size to those from the other sites mentioned above. Sheep/goat were primarily kept for meat with some evidence of breeding being observed, as is the case with pigs. Amongst the horses, the one measurable individual was at the top end of size ranges from other nearby sites (Baxter 2003).

The environmental evidence points to a change in use of the site with more evidence of crop processing activities occurring in the later Roman period, possibly in relation to the aisled barn. Comparison of the waterlogged plant remains from the waterhole and well may suggest a change in environment, with the appearance of scrub vegetation and plants of wasteland occurring in the later Roman period: these suggest that the site was becoming overgrown and unkempt.

The Well and its Contents

Constructional Parallels and the Source of the Stones (Fig. 18)

Parallels for the Bretton Way well are few and far between. A rectangular stone well dedicated to Coventina was excavated in 1876 near Carrawburgh Fort on Hadrian's Wall. This measured 2.6m by 2.4m and lay in a walled enclosure or temple located on the source of a local spring. A contemporary watercolour by F. Mossman (Fig. 18) shows it to have been constructed of large stone blocks of varying size but it is not possible from the information depicted in the painting to establish whether they were re-used. In this instance there was no doubting the attribution of the well, since there were no less than twelve inscriptions to Coventina, a little known but probably Celtic goddess (Allason-Jones and Mackay 1985). At least 13,487 coins dating between Mark Antony and

Figure 18. *Coventina's Well, excavated in 1876 near Carrawburgh Fort on Hadrian's Wall (watercolour by F. Mossman; from Clayton 1880, plate I).*

Gratian were deposited into the feature.

Further afield, there are similarities between the Bretton Way well and a feature described by Furger at Augusta Raurica in Switzerland as a votive cistern or well (Furger 1997, 143–184). Of a similar size to Bretton Way, the stones employed here were clearly re-used, given the various markings on them, but this feature has no known attribution.

The original source and function of the monumental stones that were used to line the Bretton Way well remain elusive. Although the blocks were neatly fitted together, the lack of uniformity of shape makes it clear that they were not cut and shaped to fit together. As has already been discussed, the well was constructed in such a way as to work with the shape of the blocks in what must have been something of a jigsaw puzzle. Many of the blocks also retain shaping and detailing that bears no relevance to their use in the pit, reflecting their previous function. Unfortunately, the stones do not have architectural details that could indicate their original function.

The size of the larger blocks clearly indicates that they were previously used in a massive piece of architecture and were probably brought to the site from a relatively local source, given the difficulty in moving them. It seems very unlikely that those constructing or expanding a rural villa building (such as that recently found at Itter Crescent) would have gone to the lengths required to lift such heavy pieces, or indeed to source large stones at all (Blagg 1990, 38). It was, however, clearly within the capabilities of the more wealthy Roman citizens to transfer stone some distance, even early in the period: building and architectural stone used at Fishbourne for example, was imported from various parts of the country such as Dorset and the Weald as well as from the continent (Blagg 1990, 35).

Given that the secondary use of the blocks in the well appears to date to the late 3rd to early 4th century, the structure from which they came must have been dismantled before the late 3rd century. One obvious potential source is the substantial complex of buildings at Castor, approximately 5km to the west. The largest of Castor's 'palatial' buildings were of 4th-century date (Green *et al.* 1987). The stones may therefore hint at the dismantling or alteration of an earlier massive building or structure at Castor. Alternatively, such blocks may have been surplus to requirements at the end of a major construction phase. Another possible source for the blocks is the town of *Durobrivae*, 1km to the south-west. Here, a monumental temple or other public building could have provided stonework of the appropriate scale.

Finds and Environmental Evidence

Turning to the contents of the well, the ritual deposition of objects in watery or waterlogged contexts, or on land adjacent to a spring or river, is well attested in Britain and Gaul in the Roman period, but the practice had its origins in European prehistory (Green 1997, 138–45). The deposits might be overtly ritual in nature, such as curse tablets, or they might be small everyday items of personal equipment, such as dress accessories. Such items were offered for a variety of reasons, perhaps as requests for healing, for help overcoming other personal difficulties, or as offerings

to ensure that wells or springs did not run dry. They can sometimes be linked to a particular local deity, as with Coventina at her well in Northumberland, Sulis Minerva at the Sacred Spring in Bath, and Senuna (represented as Minerva) at the River Rhee near Ashwell in Hertfordshire (Allason-Jones and McKay 1985; Cunliffe 1988; Jackson and Burleigh 2007).

Taken as a whole, the material from the Bretton Way well reflects the important role that water played in religious life of the period. Many of the objects from its fills fall into recognised categories of ritual deposition: complete pots, animal skulls, the amulet and dress accessories. However, other objects had more unusual aspects that merit further discussion, including perhaps the earliest bone sledge runners found in this country. Since the Bretton Way sledge runners are unparalleled in Late Roman Britain, there are no contemporary votive deposits of these objects that can inform their interpretation as either ritual deposits or rubbish, but as objects that allow transport over frozen water they can be seen as connected both to the well and to the shoes found within it. Moreover, as they provided a means of overcoming the power of both water and weather, it may have been considered necessary to placate the local deity or deities concerned.

Found at the base of the well, it appears that the amulet was an early deposit, perhaps associated with a rite of opening for the well, or perhaps introduced a little later as part of a cycle of ritual offerings. This latter is suggested by the recovery of footwear throughout the lower fill, but as archaeological leather only survives in wet contexts, and given that votive artefacts need not be overtly religious in form or function, distinguishing between shoes as ritual deposits and those discarded as rubbish depends upon other contextual associations (van Driel-Murray 1999, 136–7; Wilmott 1991, 61–7; Merrifield 1995; Crummy 2006, 62–6; Merrifield and Hall 2008).

The pendant is of an unusual form and is made from at least one material (iron) known to have been credited with special properties (Pliny, *Hist. Nat*. 34.44–5). The organic matter wrapped so prominently around the iron would no doubt also have been regarded as powerful and the use of more than one material would have enhanced the pendant's amuletic properties (Crummy 2010, 66–7). It may also fall within Pauli's noise-making group and that of objects of meaningful shape, although in the amulet's present condition neither can be verified. The amulet has no close parallel, but it can best be compared to pendants of various forms found in Anglo-Saxon burials, in particular to an oval wooden object, perhaps an oak-gall or piece of oak bark, that had been pierced by an iron point and enclosed in a pendant cage made from two copper-alloy strips found in a woman's grave at Little Wilbraham, Cambridgeshire (Lethbridge 1931, 73, fig. 39, 3; Meaney 1981, 61, fig. II.t). Two pendants from adult female graves at Welbeck Hill, Lincolnshire, consisted of a coiled wooden strip enclosed in a pendant cage of silver strips, and a third wooden coil from Fonaby in the same county was probably enclosed in a copper-alloy cage (*ibid*, 59, 61, fig. II.s).

The bucket hoop, and probably also the eyelet, represent the practical aspect of raising water and their recovery from higher up in the fill than the pendant allows a period of time for the bucket to be in use before the hoop fell off. It may have broken during use, but equally it may be an expression of the ritual deposition of a water container noted in wells elsewhere (Fulford 2001). Western European finds of whole or partial foot-handle jugs, for example, are concentrated in rivers, wells or springs in or near sanctuary sites rather than in midden waste or other concentrations of domestic rubbish, with one of the four British examples coming from Hauxton Mill on the River Granta, the handle of another from a well at Silchester, and the other two from features close to temples (Crummy 2011, 114–15, with references).

Another unusual aspect of the assemblage from the well is a substantial group of pottery discs made from the bases of vessels. Pottery bases do separate and survive intact from the walls of vessels fairly frequently – the base often being made of thicker material than the walls of the vessels. It is common to find such bases on Roman sites but they rarely, if ever, appear within the archaeological literature and thus there is little detail on which to form any comment regarding the quantification of such finds. However, the fact that twelve of the bases from Bretton Way appeared to have been partly chipped to remove the former side wall of the vessel and that – perhaps more significantly – three of the bases from the well had been trimmed and had the rough edges smoothed by abrasion, signifies that they were being used for a specific purpose, rather than just forming part of a rubbish deposit.

The large number of pottery bases found in the well (24 in total) could suggest that they were linked with some form of ritual practice, especially as the feature must always have held water, having been deliberately constructed for this purpose. The image of the circle, which has been associated in the past with the perceived image of the sun, may have been linked with some form of veneration (Green 1991, chap. 3). Springs and water were significant to the Roman mind and a great range of offerings have been recorded which were made to water deities (Green 1991, 109–110; Ross 1992, 245–8, see also Henig, 1989, 219–234). However, it is difficult to see from the surviving evidence how any direct links could be made between the pottery bases, the well and with any form of known religious practice. The dating is also perhaps significant as the pottery from the well suggests a date when Christianity was widespread throughout Roman Britain and certainly dominant within the local area (Thomas 1993, 113–121).

An obvious and alternative view is to view the discs as purely functional and to interpret them as the lids for other pottery vessels and used perhaps during cooking or for covering jars and bowls which contained foodstuffs or liquids. Ceramic lids are known from most local sites throughout the Roman

period where they were wheel turned and produced in a variety of fabrics, including shell-tempered, grey and colour coated wares (see Dannell and Wild 1987, fig. 45, nos 117a–f; Rollo and Wild 2001, fig. 38, no. 107; Perrin 1999, fig. 62, nos 214–5 & 69, nos 420–22; Perrin 2008, fig. 31, nos 208–9). Other lids could also have been of wood and formed from the discs of pottery from the bases of broken vessels. The use of pottery discs fabricated from broken vessels is poorly understood and confined largely to studies from Rome and North Africa, where quantities of discs have been recovered and were used as stoppers and lids. Most of these discs were cut down from amphorae but from some pottery disc assemblages 36% of their total numbers were taken from coarse ware vessels. The size range of these discs varies from 19mm–160mm and their identifiable uses were largely as stoppers for sealing amphorae but they were also used as lids for other vessels. Most of the examples recorded within the literature have irregular edges, indicating that they had been simply chipped or trimmed. However, a small number were further 'finished' and had smoothed edges suggesting that they had been additionally worked by some form of rubbing or abrasion (Peña 2007, 154–157).

At Kempston, Church End in Bedfordshire excavations recovered a late 2nd- or more probably early 3rd-century pit group consisting of several samian bases which appeared to have been cut down and showed evidence of re-working for use as either lids, palettes or in one case a spinning top. The walls of these samian vessels were chipped off at the junctions with the bases and the break rubbed down to a smooth edge (Felicity Wild, pers. comm.). Thus the best explanation at present for the assemblage of bases from the Bretton Way site is that some were used as lids or covers and would have been used in conjunction with jars or bowls. Most of the nine rough, untrimmed bases must also simply represent part of a 'normal' rubbish deposit which was discarded as part of the infilling of the well – several bases had parts of their vessel walls within the same deposit. Such discs are often classed as rough-outs for counters and in Gaul concentrations of counters have been noted on sanctuary sites and in urban workshop zones, raising the possibility that they were produced as a secondary product by artisans who sold them to worshippers for use as votive offerings (Tuffreau-Libre 1994, 128–37; Chardron-Picault 2004, 335–7). An alternative interpretation for the Bretton Way discs is that they were connected to tallying grain or other foodstuffs stored in the aisled barn, as a relief from Trier shows a man moving discs on a tray and has been interpreted as depicting the use of counters on a reckoning board (Chardron-Picault 2004, figs 15–16).

Also worthy of comment is the fact that three near complete vessels were found within the well fills. One of these (No. 27, from fill 338) appears to have been a primary/foundation deposit; it was placed in a void in the well lining, perhaps at a point of water entry, meaning that the flow of water would have gushed over it. This vessel has a heavily worn foot ring and wear on the inside where the colour coat has been worn away by use. In contrast, the two other vessels (Nos 8 and 15, both from fill 337) have unworn bases and had clearly seen little or no use. The deposition of complete vessels into pits and wells is extensively represented within the archaeological literature where their significance as votive deposits has been highlighted (Fulford 2001, 202; Black 2008, 2). However, apart from the small complete shell gritted jar (No. 8) it is difficult to say if the other two near complete vessels were intact when deposition took place. In fact, the small colour coated jar (No. 15) has part of its rim missing, appears to be partly cracked and may be a waster or more probably a 'second'; while the imitation form 38 bowl (No. 27) appears to have partial burn or scorch marks across some of its breaks and thus appears to have been broken prior to deposition. Whether such defects would have altered the significance of any 'ritual aspect' if the vessels were ritually deposited is debatable (such vessels were commonly used in Early Roman cremation burials, for example: Lyons in press). It may also be the case that the vessels were thrown away because they were already part broken or defective.

The unusual folded birch bark objects remain a conundrum. If they were made of lead, it would immediately be assumed that they were 'curses' or requests for healing, but if they had been written on, the evidence has long since disappeared. There are no known examples of curses written on birch bark but the deliberate folding of the Bretton Way bark examples and their deposition in the well hints at more than rubbish disposal. Birch bark was commonly used for letter writing in later periods, most famously in the medieval examples found at Novgorod, which include curses. In Roman Britain, lead curse tablets are often found in association with temple sites or wet places, and many examples are known from Bath and Uley, Gloucestershire. They would have been folded so that the message was hidden inside. A 3rd-century example from Uley reads: 'The sheet (of lead) which is given to Mercury, that he exact vengeance for the gloves which have been lost; that he take blood and health from the person who has stolen them' (Society for the Promotion of Roman Studies 2012, Uley 80).

Interpretation of the Bretton Way leatherwork is also problematical. Footwear, particularly left-footed shoes, was frequently chosen to be a component of structured deposition (van Driel-Murray 1999) and this possibility has been considered in the light of the nature of the other items recovered from the well. Taken at face value, there is no reason to suggest that the shoes were anything other than the result of casual domestic rubbish disposal. However, a possible connection between the shoes, sledge runners and travelling over frozen water has been noted above, perhaps suggesting a tangential connection.

Some aspects of the faunal assemblage also merit further discussion, specifically the presence of animal skulls, drilled bones and dog remains. 'Special deposits' of animal and human bone, along with a wide variety of finds, are common on both urban and

rural Romano-British sites. However, discussion of the deposition of faunal remains is hampered by the fact that many were excavated before the advent of modern archaeological techniques, with much of the animal bone either not being fully recorded or in some cases discarded entirely. This is the case with similar sites in the immediate vicinity. Features described as 'ritual shafts' containing animal bone along with pottery, various artefacts and human bone, were noted during excavations at *Durobrivae* and Castor (Perrin 1999). Such deposits were, however, recorded in detail at Castle Mound, Cambridge, where a series of 3rd- to 4th-century features were found, again described as 'shafts', nine of which contained faunal remains (Alexander and Pullinger 1999). These deposits varied in size and species distribution with shafts 6 & 11 most closely paralleling the Bretton Way assemblage; shaft 6, for example, contained 28 cattle crania. Many of the pits contained intact dog skeletons, often in association with infant burials.

Although the dog remains from the Bretton Way well may have been the result of general refuse deposition, the association between dogs and ritual is frequently apparent in Europe during both the Iron Age and Roman periods (de Grossi Mazzorin and Minnitti 2006; Fulford 2001). Dogs were associated with Roman festivals such as the Lupercalia (Fulford 2001), and the association of dogs with ritual continued on Roman religious sites with Iron Age origins such as Lydney in Gloucestershire (Wheeler and Wheeler 1932). Dogs were believed to be associated with the healer gods, including Apollo, but also had an association with the underworld: such beliefs led to the sacrifice of dogs as funerary deposits and in dedication and closure rituals (Crummy and Phillips 2008, 83). Dogs appear to have been particularly significant at certain sites, such as Godmanchester, where many pits contained their remains (Crummy and Phillips 2008, 86). Similar evidence for the burial of dogs and other animals (summarised in Fulford 2001) comes from other sites including Silchester, Baldock in Hertfordshire and Springhead and Keston, both in Kent (Grimm and Worley 2011; Black 2008). Substantial deposits of cattle bones were also found in pits at *Verulamium* (Fulford 2001).

As is evident, the type and composition of 'special' pit deposits containing animal bone throughout Roman Britain varies greatly. The Bretton Way faunal assemblage appears to parallel those assemblages in which the term 'special deposit' refers to the feature rather than to the actual faunal assemblage itself, that is to say the material becomes 'special' through the act of deposition itself.

There is little in the plant assemblage from the well to suggest ritual activity or deposition, albeit that some of the plants represented have notable properties. Henbane, for example, has recognised psychoactive properties which can induce visual hallucinations and a sensation of flight. Hemlock is extremely toxic if ingested and the philosopher, Socrates, is famously known to have died of hemlock poisoning. However, the presence of these plants is not unusual on archaeological sites of the Roman period and it is highly unlikely that these remains represent anything other than plants of waste/disturbed/damp ground.

Conclusions

The discovery of the monumental stone-lined feature at Bretton Way has raised rather more questions than it has answered. It has not been possible to locate the source of the stones, nor has it been possible to identify the structure the stones were previously used in. The absence of steps in the feature's construction rules out the possibility of a Christian baptismal function as has been suggested for similar features elsewhere (e.g. Richborough; Brown 1971) and nothing that came from the well appears to have any Christian associations to suggest interpretation as a 'holy well'. No items of military use came from the well itself to suggest a military association, although a few were found elsewhere on the site. However the scale of the feature and the effort involved suggests that the well may have had a public role rather than being the work of one wealthy individual for private use.

It remains a possibility that this was a feature connected with a Roman god, goddess or lesser figure, perhaps a water nymph or other local deity. Alas, no convenient figurine or inscription was recovered to formally identify such a dedication. Thus a rather unsatisfactory 'ritual' definition is the most precise interpretation that can be given, or perhaps, more accurately, a 'water ritual'.

It is possible that the Bretton Way well was positioned a over a 'healing spring'. The water associated with the comparable wells found at Augusta Raurica was particularly high in sulphur (Augusta Raurica 2012), a characteristic that has been attributed with healing properties since antiquity. The Roman naturalist, Pliny the Younger, for example, recommended it: '*the water is of a clear sky-blue, though with somewhat of a greenish tinge; its smell is sulphurous, and its flavour has medicinal properties, and is deemed of great efficacy in all fractures of the limbs, which it is supposed to heal*' (Pliny, *Letters*, Letter XCIII, To Gallus). A possible association between the pottery bases found within the Bretton Way well and the sun has been noted above. Apollo was the sun god and in various of his manifestations he had healing powers. '*Apollo Belenus was venerated at many curative spring shrines where miniature sun wheels were sometimes cast into the waters to placate the gods*' (Andrews 1998, 34). As discussed above, the dog was also associated with the healer gods, including Apollo and his son Asclepius, the god of medicine who is particularly associated with dogs and whose sacred dogs licked the wounds of sick petitioners at his healing shrines (Farnell 1921, 234–279).

It is probable that the Bretton Way feature served as a well or cistern until its disuse. The deposition of objects into it may then have acted as a 'closing' ceremony, rather than the feature serving as continuing receptacle for offerings throughout its life (as was

clearly the case with Coventina's Well). Most of the 'ritual' objects came from the initial backfills, with subsequent fills comprising more general rubbish. There is nothing from the rest of the site to indicate particular wealth or status, the adjacent aisled barn being of normal agricultural character, although the presence of the well itself points to some special significance. Only further work in the area may provide new evidence to place the feature into its proper context.

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