

## **Evaluation of Beckfoot Roman Cemetery, 2006**

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The Roman cemetery at Beckfoot, *c.* 350m to the south-west of the auxiliary fort (NY 0876 4868), and in the proximity of Milefortlet 15, was subject to evaluatory excavation in 2006 by Oxford Archaeology North, in advance of increasing coastal erosion. Although relatively well known, the site had hitherto seen only small-scale rescue excavation, as burials were exposed by erosion and dune collapse. The 12 evaluation trenches revealed general evidence for a prehistoric presence, and more detailed information on three phases of cremation burials dating to the 2nd and 3rd centuries AD, artefact evidence suggesting that the cemetery had been in use as late as the 4th century. There was, however, no evidence to confirm the position of Milefortlet 15. Importantly, the finds, environmental evidence and scientific dating were able to elucidate funerary practice at the site, and add significantly to the still scant information for this in Cumbria and the wider region.

### **Introduction**

**T**HE remnants of a Roman cemetery, associated with the auxiliary fort at Beckfoot, to the south of the western end of Hadrian's Wall, some 19km from Bowness, is situated on a low sea-cliff, *c.* 350m to the south-west of the fort (NY 0876 4868), and 1.3km to the south of village of the same name (Fig. 1). It lies to the west of the road leading south from the fort, in the postulated vicinity of Milefortlet 15, part of the Cumberland Coastal system (Bellhouse 1989). Whilst the cemetery is not afforded statutory protection, the milefortlet is a Scheduled Monument (Cu258; National Heritage List for England 1007171), although much of the land has been lost to erosion. These coastal defences are part of the Frontiers of the Roman Empire: Hadrian's Wall World Heritage Site. Most of the site also lies within the Silloth Dunes and Mawbray Bank Site of Special Scientific Interest.

The site is within actively eroding coastal dunes, being at continuing risk of destruction. In 2005, subsequent to somewhat inconclusive geophysical investigations (Martin 2006), English Heritage (now Historic England) commissioned an evaluation (Collins 2005) to examine the extent and condition of archaeological remains in the area, since, given the current scale of the erosion, preservation was regarded as physically impossible and economically unfeasible. Given its evaluatory nature, rather than its being a detailed, research-driven investigation, cut features were only sampled (usually *c.* 50 per cent), rather than fully excavated, which has necessarily had an impact on the conclusions drawn. The project was undertaken in February and March 2006 (OA North 2006).

### **Geology and Topography**

The underlying solid geology comprises Permo-Triassic mudstones and sandstones, reduced by ice-scouring to a relatively level surface (Countryside Commission 1998,

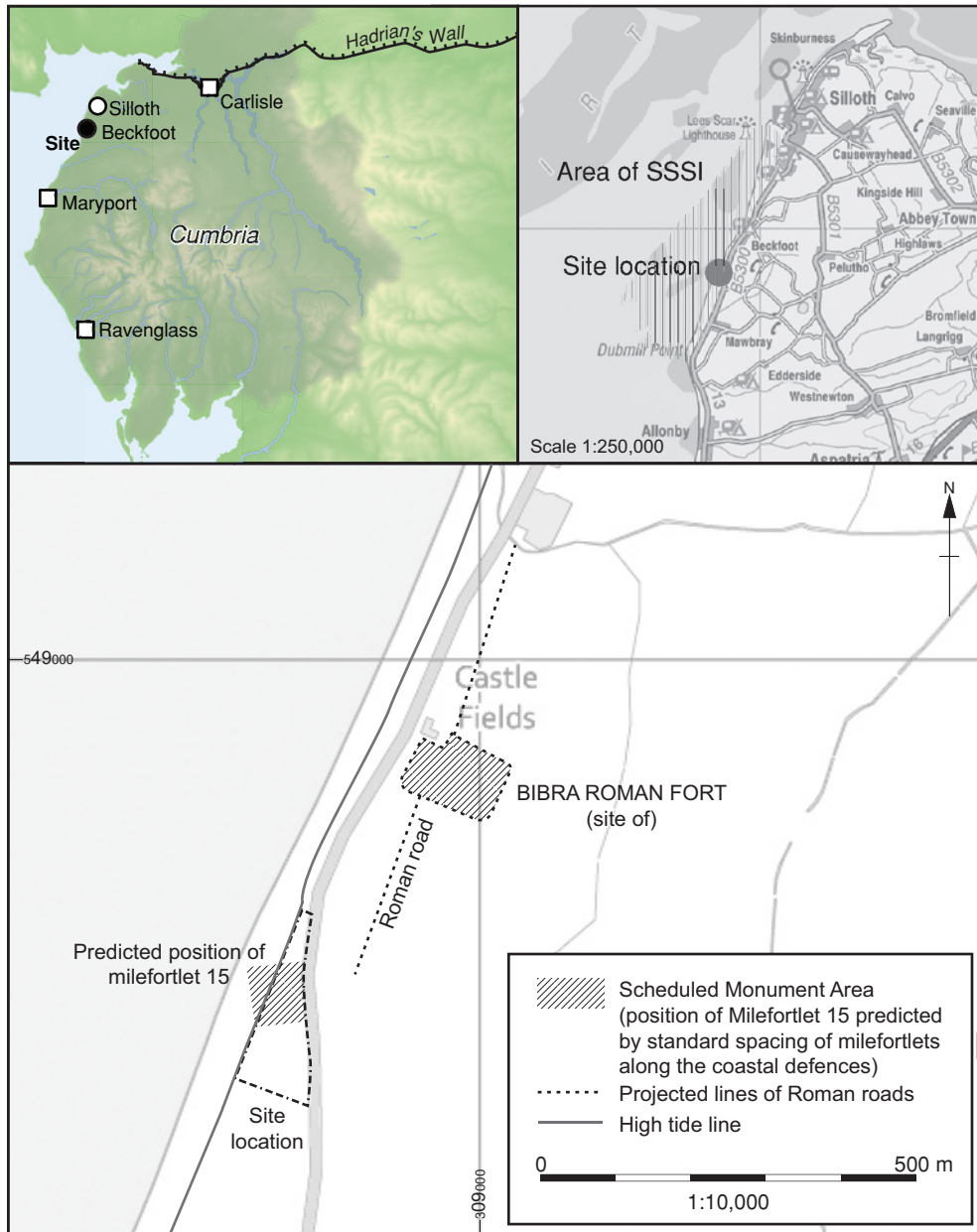


FIG. 1. Location of Beckfoot fort and cemetery.

20-1), subsequently overlain by glacial tills and spreads of sand and gravel. Successive changes in sea level, as a result of both eustatic and isostatic movement, have produced a series of raised beaches along the West Cumbrian coast (Lloyd 2010) and, during especially low tides, the remains of a submerged forest are visible in Allonby Bay, to the south (Countryside Commission 1998).

Today, coastal sand dunes extend northwards from Maryport, in an effectively unbroken line, to Silloth. These have accumulated over the last two millennia or more, engulfing, amongst other things, a substantial part of the Beckfoot site. This is currently covered by an irregular dune system supporting, and in part stabilised by, grassland (Martin 2006, 2), but tidal and riverine activity within the Solway Firth has sporadically under-cut the dunes, causing the collapse of their upper levels, resulting in a coastal loss of *c.* 0.3m a year (Collins 2005, 1), and posing an ongoing threat to the archaeological remains.

## Background

The Roman cemetery at Beckfoot has been known for over a century (Caruana 2004, 136), being recorded, from the first, as suffering considerable damage from coastal erosion. The appearance, on the beach below the low cliffs, of artefacts originating from the cemetery, and intermittent archaeological recording, have repeatedly emphasised the considerable importance of the site.

The first modern report (Hogg 1949) noted that both complete and fragmentary ceramic vessels, cremated bone, charcoal, and other Roman objects had been found on the beach, which could be assumed to have originated in a cemetery on the land above; an earlier report (Duff 1877) referred to objects having been recovered from the dunes.

Several burials exposed in the cliff section were excavated in the 1950s and 1960s (Bellhouse 1954; 1957; 1962; Bellhouse and Moffat 1958), cremation pyres, graves, and associated deposits being recorded (Bellhouse 1954). Two more rescue excavations took place in 1972 and 1973, again investigating features in the cliff, and both producing Roman finds (Caruana 2004, 137-8). From 1984 onwards, investigations have been more systematic, cremation-related features and Roman material being recorded from the cliff, culminating in 2004 in the publication of a gazetteer of the finds associated with the cemetery (*ibid*). Material continues to be reported from the beach as a result of the ongoing coastal erosion, and from the surrounding fields (see reports to the Portable Antiquities Scheme; LANCUM-413CA5 (Noon 2011); LANCUM-306098 (Whitlock 2016)).

## The Evaluation

In all, 12 trenches were excavated (Fig. 2), revealing a range of discrete cut features and deposits, mostly associated with cremation burial, and all seeming to date to the Roman period. Activity probably began in the earlier part of the 2nd century AD, resuming, after a lull, later in the same century and continuing through to end of the 3rd, and, perhaps, into the 4th century. A few finds hint at pre-Roman activity, and modern material is also present. Reliable dating evidence from artefacts was scant, however, and there were few intercutting features, most being relatively isolated. Radiocarbon dating has thus been important. Dates presented in italics in the text denote that they are derived from a chronological model (below, pp. 70-1); all are expressed at 95 per cent probability.

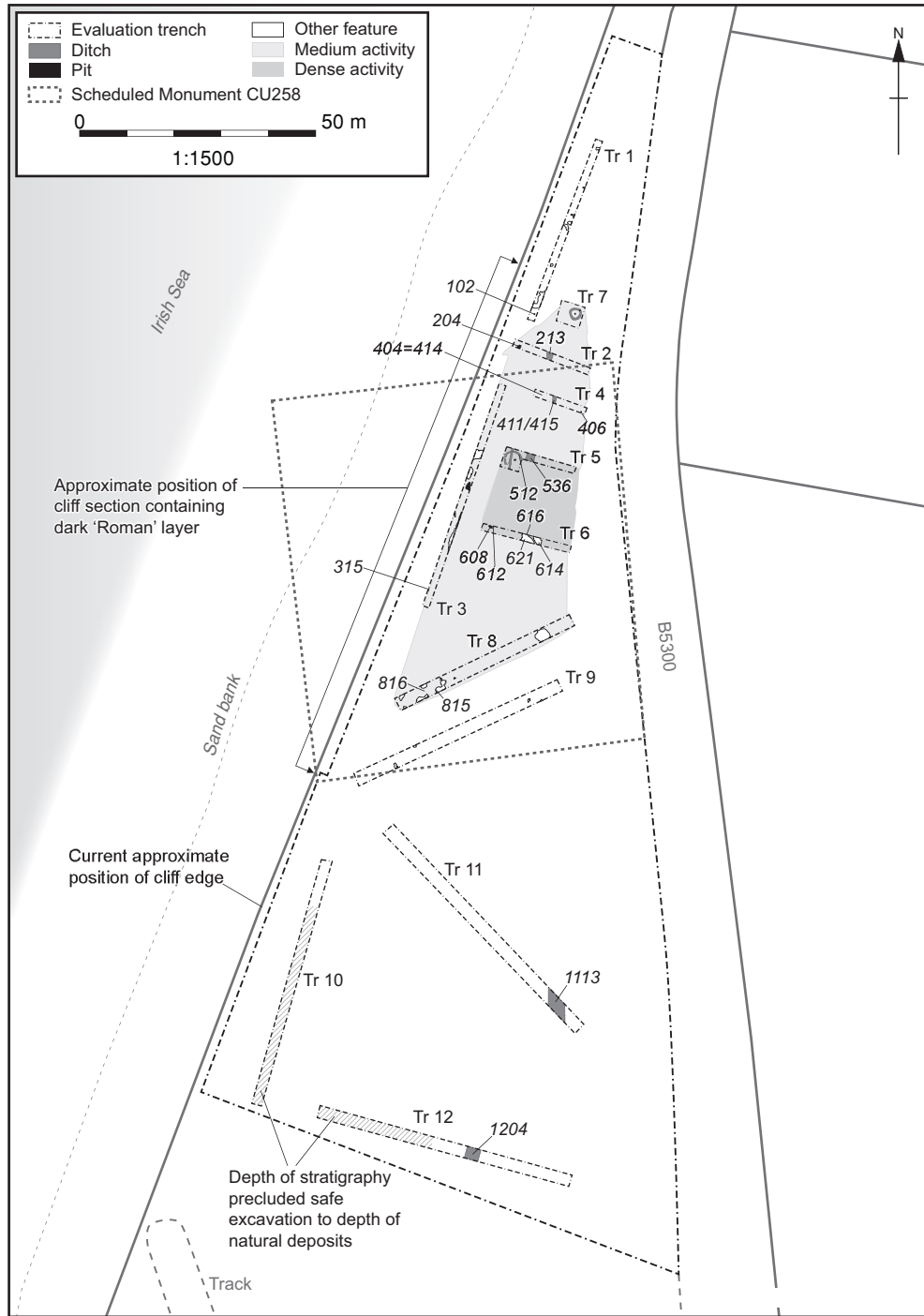


FIG. 2. Locations of evaluation trenches, areas of activity, archaeological features and Scheduled Monument CU258, 107171 NHLE.

### Prehistoric Activity

It is possible that ditch *1113*, towards the southern extremity of the site (Fig. 2), had a pre-Roman origin, although it is close to the projected line of the coastal Roman road. It had largely been removed by a recut (*1112*; Fig. 3), but survived as a shallow (0.40m), but wide (2.80m), linear feature. Its two fills were mostly windblown sands, perhaps with some evidence of stabilisation between, but a small group of closely related pottery fragments came from the lower, *1109* (Fig. 4), which have a prehistoric character and are probably of late Neolithic or Bronze Age date. The pottery, though possibly residual, given its early date (below, p. 55), indicates that there was some early activity in the area. There is nothing to indicate when the ditch was recut, and the later fills produced no dating evidence. A second, broadly similar, ditch (*1204*; Fig. 2), on the same alignment but further to the south and slightly to the west, was also filled with windblown sand. This was the only feature excavated that clearly showed on the geophysical survey (Martin 2006). It is possible that together they represent an early ditch, perhaps defining a boundary. Both ditches were overlain by windblown sand, rather than by the more general 'Roman' layer seen in other parts of the site (below, p. 54).



FIG. 3. Ditch *1113*, with the lighter fill of recut *1112* in section, facing north-east.

### Roman Activity

Trenches 10, 11, and 12 were excavated to establish whether or not Milefortlet 15 (Bellhouse 1957, 21-2) existed in any form to the south of its measured position. The greater depth of dune sand in the south-western corner of the study area raised safety concerns which precluded deep excavation, and so these deposits were excavated only to a maximum depth of 1.20m. However, the almost complete lack of evidence for Roman activity there, and the lack of any other evidence in the area evaluated, makes it likely that the milefortlet has been lost to coastal erosion. The single fragment of East Yorkshire calcite-gritted ware, in Phase 3 subsoil *1002* (Trench 10), must, however, hint at some late Roman activity.

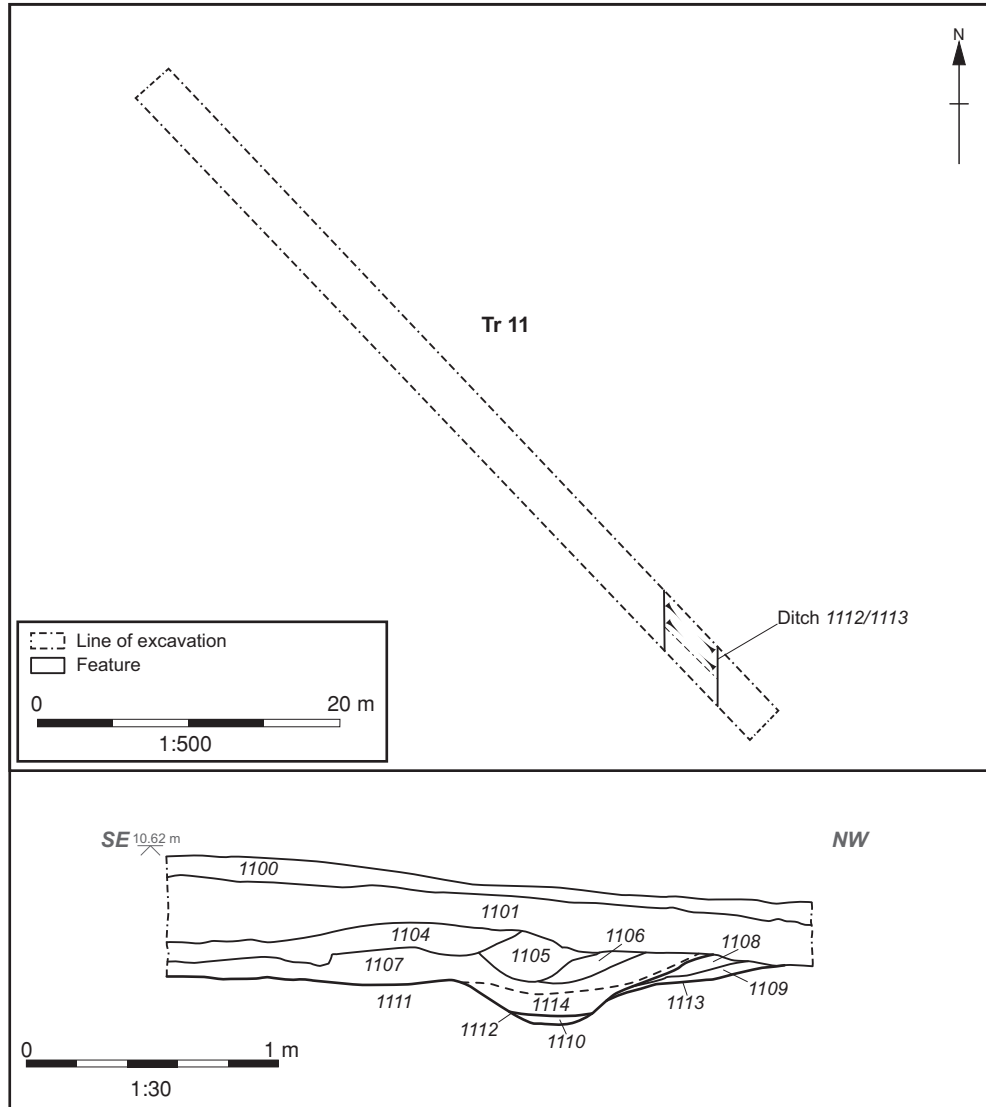


FIG. 4. Plan and section of Trench 11.

The principal focus of the evaluation was the cemetery, in the central and northern parts of the study area (Trenches 1-9; Fig. 2). The majority of features overlay or were cut into the glacial sands and clays, and were sealed by a widespread dark soil (Phase 3), observed below the dune sand in most of the trenches, as well as in the present-day cliff. This has been interpreted as a buried soil of Roman date. Seven cremations were encountered, forming a loose cluster (in Trenches 3-7), and were sampled (Collins 2005; OA North 2006), those in Trenches 5 and 6 being left largely undisturbed. Although the general lack of intercutting features makes phasing difficult, three successive periods of Roman activity have been identified.

### Phase 1

A dump of burnt material (519/510), apparently within a shallow cut (518; Fig. 5), was identified (Trench 5), although it is not certain whether it was a formal burial, the last remnant of a pyre, or simply a dump of debris. The presence of a small burnt Black-Burnished ware 1 body sherd places it after *c.* AD 120, as do sherds of a Hadrianic/early Antonine jar in the same ware.

Two cremations were stratigraphically earlier than other cemetery features, although later than spread 519. To the north (Trench 7), pit 710, *c.* 0.60m in diameter, and 0.30m deep, was filled by silty-sand 709, containing cremated bone (Fig. 6; below, p. 64). This produced several sherds from a burnt Black-Burnished ware 1 jar dated AD 215/16+, and one from a samian cup of form 33 (AD 140-200). Pit 710 was subsequently cut by a Phase 2 ditch (705; below, p. 51), and it is possible that samian fragments in its fill originated in pit 710. Pit 612 (Trench 6; Fig. 2) also seemed early in the sequence, although devoid of grave goods. It was subsequently covered by sandy layer 610 before being cut by a Phase 2 pit (below, p. 52).

### Phase 2

Two burials were contained in a central pit enclosed by a circular or penannular ditch. Sub-circular pit 707 (Fig. 6) was some 0.60m deep, 0.45m across, and held a (probably) later 3rd-century Black-Burnished ware 1 jar, with a large lead plug in its base (708; Fig. 7); this had served as a container for some of the cremated bone of a child (below, p. 66). Associated charcoal was dated to *cal AD 85-240* (1854±30 BP;

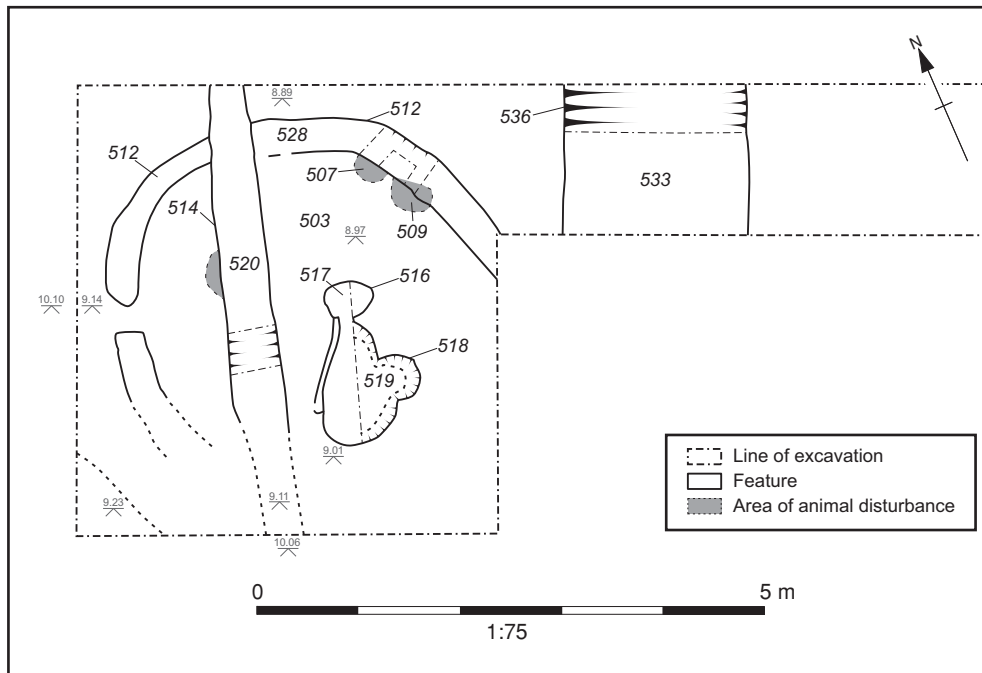


FIG. 5. Trench 5, demonstrating three phases of activity.

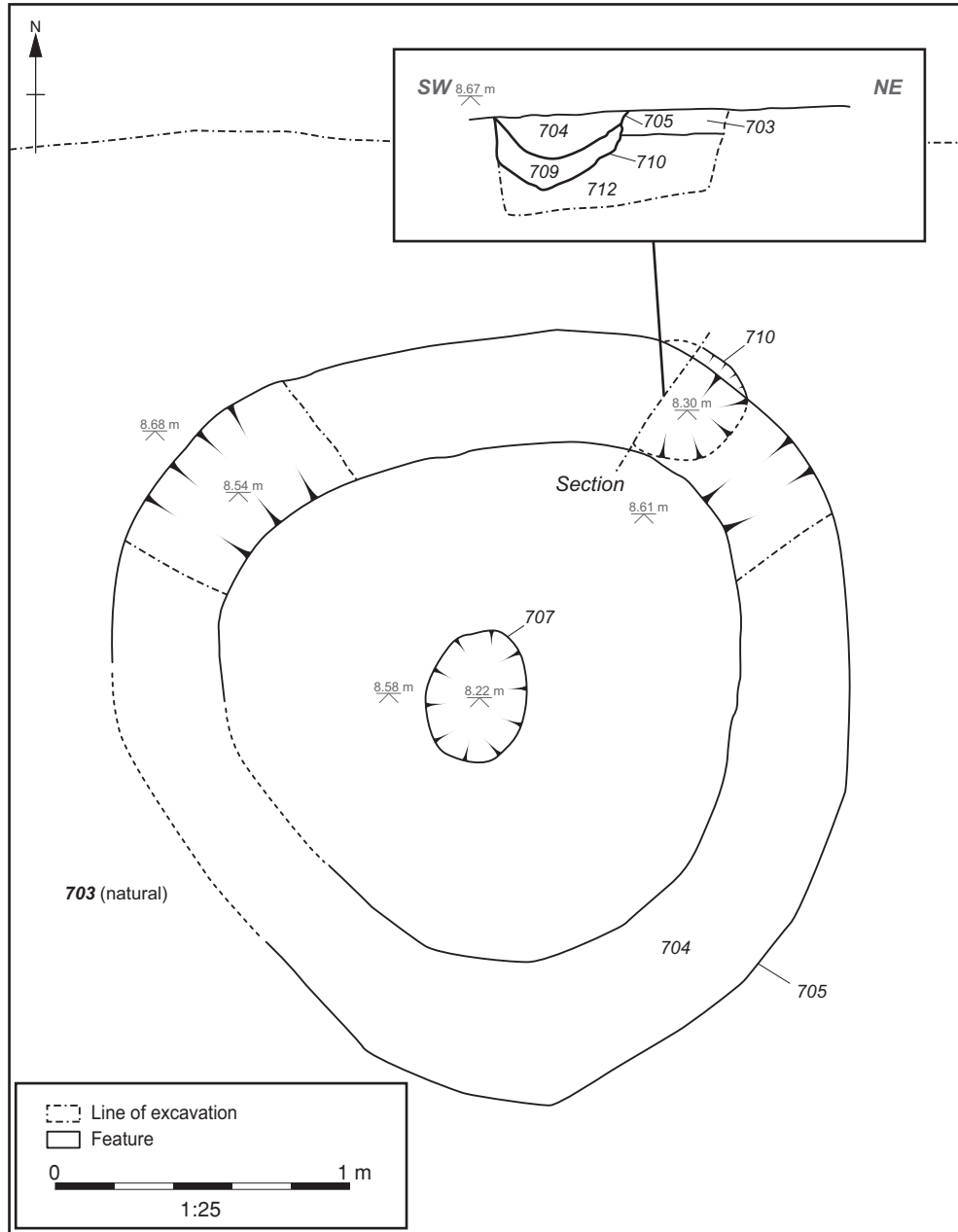


FIG. 6. Trench 7.

SUERC-58011) and *cal AD 75-240* (1871±37 BP; UBA-28001). The jar appears to have been placed in the centre of the pit, standing upright on a deposit of pyre debris (711), before the pit was backfilled with similar material (706). Three burnt whiteware sherds from debris 711 probably represent flagons or similar vessels placed on the pyre.



The surrounding ring-ditch (705) enclosed an area *c.* 1.80m across, and was 0.35m wide and 0.15m deep (Fig. 6), cutting burial 710 at its north-eastern extent. Its fill (704) produced sherds from as many as six samian vessels, all sufficiently burnt to be pyre goods, although they could have come from the earlier burial. Calcined bone from 704 was perhaps deposited in pyre debris rather than as a discrete secondary burial.

The second burial lay to the south and comprised a semi-circular, or perhaps penannular, ditch (512; Trench 5; Fig. 2), approximately 3.25m in diameter, 0.55m wide and 0.19m deep; the sandy fill (528) was devoid of both artefacts and environmental evidence. A sub-circular pit in its approximate centre (516; Fig. 5) cut earlier pyre debris 519 (above, p. 49). Some 0.63m across, it appeared to contain a discrete cremation burial, though only the uppermost 0.05m of its fill (517) was excavated, and produced no dating evidence. It thus seems most likely that ditch 512 defined a discrete burial plot, perhaps implying that there was, originally, a slight mound above the central burial, formed by upcast from the ditch. Other small deposits of dark, possibly cremation-related, debris also lay inside the enclosure, one producing Black-Burnished ware 1 pottery.

A third burial (406) contained, like pit 707, a pottery vessel, filled with cremated bone and other pyre debris (Fig. 8), although it had no surrounding ditch and was cut into the underlying substrate (there 414). It comprised an approximately circular pit, some 0.30m in diameter, and 0.16m deep. A Black-Burnished ware 1 beaker (408) had been placed upright in its base; near complete except for its splayed rim-tip (broken in antiquity), it was heavily burnt. Nine sherds from a second, larger, jar came from



FIG. 7. Funerary vessel 708, in cut 707, Trench 7.

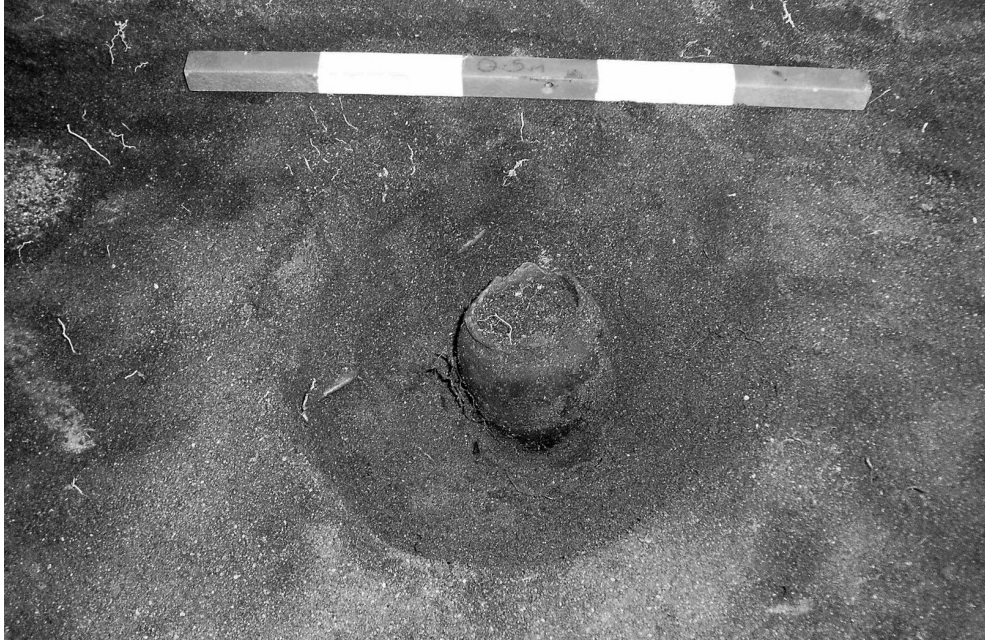


FIG. 8. Funerary vessel 408 in cut 406, Trench 4.

its fill, and a further three, possibly the same jar, came from fill 407. An overlying layer (405, Phase 3) produced sherds from the same, or a similar, jar. Both vessels were made after AD 240, and probably *c.* AD 240-70 (below, p. 60). Associated charcoal is estimated to date to *cal AD* 385-535 (UBA-28000; below, p. 70), raising the possibility that the beaker had been quite old when used as an urn.

Beaker 408 contained a mix of cremated bone and charcoal, with a considerably larger amount of cremated material in the pit fill (407) surrounding it. Since all the bone derives from a single juvenile or sub-adult, it may be that it was placed in the pit empty, then pyre debris from the cremation was poured or shovelled in, filling and then over-flowing the pot.

Further south, and in alignment with 707 and 406, Phase 1 burial 612 was cut by a relatively large (1.20 x 0.50m) sub-rectangular pit (608). Its fill, dark brown sandy soil 609, appears to have been badly disturbed by later animal burrowing.

#### *Phase 1/2*

The remainder of the burials and other features were essentially stratified only below the latest Roman soil (Phase 3), and deposited on, or cutting, the natural substrate. To the north, in Trench 1 (Fig. 2) and close to the present cliff-edge, a small sub-circular pit (102) contained a cremation-like fill (103), and there were, in the same locality, several layers which contained sufficient burnt material to suggest spreads of pyre debris (109, 111-116). Similar spreads of dark, highly carbonised material (305-310) were also present in Trench 3, again close to the cliff-edge. Spread 305 produced

sherds from a Black-Burnished ware 1 jar of AD 215/16+, its everted rim and the girth/rim ratio suggesting a date before *c.* AD 240, in good agreement with the estimated date range provided by the modelled radiocarbon dates (below, p. 71). There was also a greyware base sherd with a simple *graffito*, possibly a roughly drawn phallus. The small sherd size, and scorching on some fragments, are consistent with pyre material (below, p. 78). Indeed, pyre debris seemed concentrated in these areas, suggesting some zoning of activity within the cemetery, perhaps indicating the position of pyres.

Two probable burials lay towards the eastern end of Trench 6. Sub-circular deposit 616 (0.26 x 0.18+m) was, apparently, sealed by a layer of pyre debris (605, 606), containing very badly burned pottery sherds. An oval pit (621; 0.20 x 0.12m) approximately 1m to the west, was again covered by pyre debris (607). Pottery included fragments of several Trier black-slip beakers, dated AD 200-75, as well as burnt Black-Burnished ware 1 jar sherds, with faint traces of obtuse lattice, placing them after *c.* AD 215/16.

A possible ditch aligned approximately north/south (213) in Trench 2 may have been a cremation burial, or was used for some related purpose, perhaps the disposal of pyre debris. It was 1.26m wide and some 0.30m deep, and contained a sequence of four fills: 217, probably material eroded from the sides; overlain by two others (218, 215) rich in charcoal and cremated bone; and the uppermost fill (214) also contained both, though less densely concentrated. Bone from 214 was perhaps of an older juvenile, whilst that from 215 was an adult woman (below, p. 64). Sufficient bone was present in the latter to suggest an unurned cremation, but 214 seems more likely to have been pyre debris. Charcoal-rich layer 216, directly above the natural substrate and only 0.2m from ditch 214, may well have been related. The only pottery was a single small, burnt and very abraded whiteware sherd, possibly originally a pyre offering, but likely to be residual, since such whitewares generally date from the late 1st to 2nd century (Leary 2014).

Further to the south, ditch 536 (Fig. 5) was broadly on the same line as, and had similar dimensions to, ditch/pit 213, being 1.85m wide and 0.47m deep. The primary fill probably reflects an initial period of erosion, before it was backfilled and covered by silts. It was, however, archaeologically sterile. A third north/south-aligned ditch (411) was identified between the two, but was much narrower (0.76m wide) and shallower (0.21m deep), and its fill did not contain the pyre debris which characterised 213. It was subsequently cut by a rectangular pit (415), filled with redeposited natural sandy-gravel, which may represent disturbance in antiquity, being sealed by 'Roman' layer 402 (Phase 3).

Only a few metres to the west of 536, a much smaller ditch (514; Fig. 5), *c.* 0.50m wide and 0.18m deep, cut Period 2 ring-ditch 512 (above, p. 51). To the south (Trench 6, 614), a 0.40m-wide linear feature was probably another small ditch, again on a north/south alignment.

Further south, 815 was part of another ditch (816) on broadly the same alignment as the others. Its fills, especially upper fill 808, were rich in carbonised material, suggesting that it also might have been used for the disposal of pyre debris. Fill 809

produced a sherd from a possibly 2nd-century jar, and disturbed deposits (807, 812), tentatively associated with cremations, produced 3rd-century Black-Burnished ware 1 jar fragments. Although these short stretches of ditch were not particularly alike, it is possible that they were the fragmentary survivals of larger features which perhaps subdivided the cemetery during the latter part of Phase 2.

### *Phase 3*

The latest Roman activity was an extensive horizon (*e.g.* 302, 502, 602, 702, 802, and 902), marking a relatively general cessation of activity. The layer of dark sandy subsoil sealed most archaeological features and appeared to be largely homogeneous, although it had suffered from heavy, if sporadic, animal disturbance. Previous work (Bellhouse 1954, 53) had identified this layer as the 'Roman level', into which cremations were inserted and pyre-pits dug, although subsequent evidence (Caruana 2004, 135) might suggest that this was not always the case, since it appeared most consistently to overlie Roman features. This might imply that it was largely dune sand, accumulating slowly but continuously over the period during which the cemetery was in use, and thus frequently reworked, incorporating an organic element. This would provide convincing evidence that the dune system was already active by the 2nd or 3rd century AD.

A considerable amount of pottery came from this layer, including a Trier black-slip beaker (*c.* AD 200-75), 2nd-century Black-Burnished ware 1 and greyware jars, and a whiteware *tazza* base, as well as two tiny colour-coated scraps of Nene Valley-type, which, on Hadrian's Wall, is regarded as of 3rd-century date (Leary 2014). In Trench 6, this layer produced burnt samian; a 3rd-century Nene Valley folded beaker; and burnt 3rd-century Black-Burnished ware 1 splayed-rim jar sherds; late 3rd- to early to mid-4th-century types included an Oxford red colour-coated dish and a Nene Valley bead-and-flange bowl. Trenches 7-9 (702; 802; 902) produced a similar range of vessels, including a Nene Valley funnel-necked beaker, and the scorched base of a jar in East Yorkshire calcite-gritted ware (below, p. 59).

### *Phase 3a*

Feature 315, identified within Phase 3 horizon 302, close to the modern coastline (Fig. 2), was perhaps a pit containing mixed burnt material rather than a cremation *per se*, since, at 1.20m long by 0.20m wide and more than 0.18m deep, it was much larger than others. Its fill (312), though disturbed by animal burrowing, contained a concentration of burnt bone at its northern end, and some large pieces of charcoal to the south. Whilst the bone and charcoal were not in an urn, fragmentary pottery was recovered, along with some ironwork, perhaps hinting at a wooden box, although whether this contained the cremated remains is unknown. The bone was of a mature adult, possibly a woman, but it provided a date of 800-500 *cal BC* (2547±30 BP; SUERC-58013), strongly suggesting that, if not the result of soil contamination, it was not likely to be contemporary with the cemetery. Since the charcoal provided a date of *cal AD 155-240* (UBA-27999), it seems to raise the possibility that the feature had been disturbed.

To the north, pit 204, c. 0.80m square, cut what seemed to be the lowest element of the 'Roman level' in Trench 2 (210=212). It did not seem to be another late burial, but perhaps reflects an attempt at grave-robbing, a phenomenon demonstrated at the cremation cemeteries at Brougham (Cool 2004, 15-16) and Low Borrowbridge (Hair and Howard-Davis 1996, 120).

### **Post-Roman Activity**

The uppermost 1m of stratigraphy comprised a complex accumulation of bedded sands overlain by 'topsoil', a loose tangle of dune-grass roots. These seem to represent the effectively uninterrupted deposition of dune sands over most of the last two millennia. The material assemblage from them is small and archaeologically insignificant, there being no early medieval or medieval finds. A single perforated iron strap is post-medieval or later, and a glass bottle dates to the early 20th century; both were, apparently, thrown into a rabbit warren to block the exits.

### **The finds**

#### ***Prehistoric pottery***

Some 33 sherds of coarse hand-made pottery were recovered, three from subsoil 902 (Trench 9), and the rest (plus crumbs) from ditch 1112 (fill 1109, Trench 11; Fig. 4). The group from the ditch comprised part of a single hand-made vessel, a large, relatively wide-mouthed bucket-shaped jar. The circumference of the rim is not certain, and there is no evidence for the form of the base. Fingernail impressions are visible on its flat rim, which are reminiscent of late Neolithic Grooved Ware, but the marked lack of other decoration might rather point to a Bronze Age date. Indeed, occasional lithic artefacts of this period (*e.g.* HER 17823) have been recovered from the vicinity. The three joining fragments from subsoil 902 are probably from the lower wall of a flat-based vessel, without decoration. The fabrics of the two vessels are sufficiently alike to suggest a similar source, with a Bronze Age date most likely.

#### ***Samian ware***

##### *MWard*

The 40 sherds (129g) of samian ware represent a maximum of 35 vessels (Table 1), and 0.34 EVEs (equivalent vessel estimate), although they were in such poor condition that the estimate of maximum numbers probably errs on the generous side. Most sherds were very small, weighing an average of only 3g; only three weighed over 10g, the heaviest being 13g, whilst several comprised crumbs weighing less than 0.5g. The maximum number of vessels was estimated, to facilitate comparison of quantities of grave goods. (To ensure consistency with the other Roman pottery, quantification is also provided in the archive by sherd count, weight, and EVEs).

Apart from sherds from Phase 3 subsoils, the only stratified vessels were an Antonine cup fragment (13g) in Phase 1 pit 710 (fill 709), six sherds in Phase 2 ditch 705 (fill 704; ranging in weight from a crumb to 12g, and in production date from c. AD 70-

TABLE 1: Samian vessel-types per fabric (max nos).

Vessel Type	South Gaulish	Central Gaulish	East Gaulish	Total
dish		2		2
dish or cup		1		1
cup		7		7
bowl or dish		1		1
bowl, decorated		5	1	6
beaker	1	1		2
mortarium?		1		1
indeterminate	2	13		15
Total	3	31	1	35

110 to the later 2nd century or later), and a Hadrianic-Antonine fragment (2g) from Phase 1/2 pyre dump 605. All sherds showed some degree of burning and 28 (of the maximum 35 vessels) had suffered extreme heat. It is possible that some scorching may have resulted from prior domestic use, but the intensity of the burning, whether or not they represented pots that were purposely burnt, provides strong evidence for the effects of funerary, and specifically cinerary, ritual. Many sherds (from 26 vessels) had suffered an extreme reaction, often with both surfaces badly crazed or 'crackled', and some were crumbling and close to disintegration. Consequently, attribution even to the main production centres was difficult. The sherds are so fragmentary that the reconstruction of individual vessels is effectively impossible, but some of the larger form 33 sherds, scattered between subsoil 702, and fills 704 and 709, are likely to be from the same cup; they were noticeably less heat-affected, with their surfaces blackened, but more intact.

There was a maximum of three South Gaulish vessels (Table 2), at least one of which was of uncertain origin. Datable only to the range *c.* AD 70-110, each was represented by a scrap weighing less than 1g; one was probably from beaker form 67. Central Gaulish products comprised a maximum of 31 vessels, most probably Lezoux products, dating very broadly to the 2nd century, and reflecting the large proportion of fragments of indeterminate form. Whilst most are presumed to have been made between *c.* AD 120 and *c.* AD 200, many will have been produced after *c.* AD 140. There were no potters' stamps, although two have been recorded previously (Caruana 2004, fig. 6.10; Bellhouse and Moffat 1958, 60, fig. 2). Three of the six moulded bowls were decorated, most probably representing the styles of Cinnamus, Laxtucissa, and Casurius or Doeccus. Cinnamus is one of the potters previously recorded at Beckfoot (Caruana 2004, 137). As for East Gaulish products, the same proportion, projected to a larger sample, would be in line with expectation for a north-western site with 3rd-century activity. The one certain vessel was a bowl produced in *c.* AD 160-200/40) and possibly at Trier rather than Rheinzabern, but its fabric was heat-distorted. One closed vessel, probably a beaker, was represented by sherds in subsoil 702 and fill 704, but it is uncertain whether it was from Lezoux or Rheinzabern.

TABLE 2: Samian forms per fabric (max nos).

Form	South Gaulish	Central Gaulish	East Gaulish	Total
18/31,18/31R or 31		1		1
27		1		1
27 or 35		1		1
30		2		2
30 or 37		1		1
33		5		5
37		2	1	3
45?		1		1
67	1			1
beaker?		1?		1
indeterminate	2	16		18
Total	3	31	1	35

Five vessels were produced after AD 150, one certainly after AD 160, in addition to a putative mortarium (a type introduced after AD 170, with its exportation from Lezoux to Britain continuing into the 3rd century). Other vessels in the group included two form 27 cups (popular before *c.* AD 160; Webster 1996) or possibly form 35, and up to five form 33 cups, with at least one dish in the 18/31 group. More cups than dishes were identified, and indeed cups, beakers, and moulded bowls constituted the bulk of the identifiable forms, with as many as six moulded bowls (Table 1).

No sherds showed repair-work or signs of wear from use. One from ditch 705 (fill 704) was scored, but this was probably accidental, perhaps by raking, rather than an intentional incision.

#### *Significant vessels*

1 Central Gaulish moulded bowl, form 37 (Fig. 9.1). Double medallion beside a candelabrum (Rogers 1974, Q27) used by potters, including Cinnamus in his standard phase. Badly burnt and crazed, surfaces lost. Weight 3g.

Trench 3, Phase 3 subsoil 302, OR 1120, *c.* AD 150-75/80

2 Central Gaulish moulded bowl, form 30 (Fig. 9.2). Panelling with borders (Rogers 1974, A3) used by a later-Antonine potter such as Casurius or Doeccus. Burnt and crazed. Weight 6g.

Trench 7, Phase 3 subsoil 702, OR 1075, *c.* AD 160/70-200

3 Sliver from a lower wall/base junction, apparently from a Central Gaulish mortarium form 45 rather than moulded bowl form 30. Badly burnt and crazed. Weight 4g.

Trench 7, Phase 3 subsoil 702, OR 1035, after *c.* AD 170, if form 45

4 Central Gaulish moulded bowl, form 37 (Fig. 9.3). Apollo (Oswald 1936/7, 92; used by Lactucissa, Mammius and perhaps Censorinus) is set on an almost indiscernible stand, but lacking its usual mask. The three potters, working in the

range *c.* AD 150/60-180/90, possibly shared a mould-maker, but this bowl probably represents the style of Laxtucissa (Stanfield and Simpson 1958, pls 97.5, 100.24), active AD 150-75 (Hartley and Dickinson 2009, 241). Burnt, with surface edges crazed. Weight 6g.

Trench 8, Phase 3 subsoil 802, OR 1012, *c.* AD 150-75

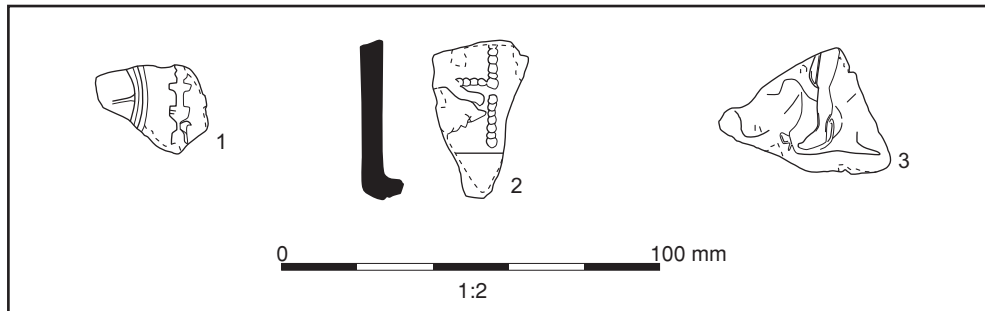


FIG. 9. Decorated samian ware.

### ***Romano-British coarsewares***

*R S Leary*

#### *Wares and vessel types*

Pottery fabrics were examined and sorted into ware groups on the basis of colour, hardness, feel, fracture, inclusions and manufacturing technique. National Fabric Collection codes were given wherever possible (Tomber and Dore 1998). (Full details of the fabric series can be found in the site archive.)

Black-Burnished ware 1 is by far the dominant ware, comprising 78-90 per cent of the vessels, all but one of them jars. They range in date from the 2nd- to the late 3rd century, with the majority suggesting a range from *c.* AD 215/16 to *c.* AD 270. Where sufficient of the profile survived, the date can be refined still further, to AD 240-70. There are only two 2nd-century forms (necked and neckless jars; Gillam 1976, no. 2 and no. 31 respectively); six vessels have splayed rims typical of the mid- to late 3rd century (Gillam 1976, no. 10) and four have the sharply everted or out-curving rims (Gillam 1976, nos. 8-9) conventionally dated to the mid- to late 3rd century, but possibly slightly earlier (see Bidwell 1985, nos. 32 and 46 for examples dated *c.* AD 223-5; Evans 2004, fig. 4.20 no. 1 for vessels dated *c.* AD 200/20-40). Four jars had scored shoulder grooves, a trait dated within the first half of the 3rd century (Bidwell 1985, 175) and generally after AD 240 (Evans 2004, 334-5, Holbrook and Bidwell 1991, 96).

Eight vessels had the obtuse lattice burnish which replaced acute and right-angled lattice during the 3rd century, being present at Cramond by AD 215/16 (Ford 2003, 59), whilst at Brougham, its *terminus post quem* was placed in the range AD 200-20 (Evans 2004, 334). None of the vessels is sufficiently complete for it to be determined whether the girth was narrower than the rim diameter (a trait which emerged *c.* AD 270;



Evans 2004, 334; Holbrook and Bidwell 1991, 95). The one beaker in jar form had an obtuse lattice, shoulder groove, and splayed rim.

All the other fabrics were uncommon to rare. Reduced wares accounted for less than three per cent of the assemblage; all are probably local, although no sources were identified. There are nine vesicular sherds, originally calcite-gritted, all from jars which resemble the well-known 3rd- and 4th-century East Yorkshire calcite-gritted wares. These may be 3rd-century Knapton-ware jars, a type found in small quantities at Brougham (Evans 2004, burial 192), or 4th-century Huntcliff or pre-Huntcliff-type vessels, like others from the cemetery (Caruana 2004, fig. 6.10 no. 46), but the distinctive East Yorkshire reduced wares are absent. Otherwise, there were few diagnostic pieces amongst the greywares. One fine, though abraded, sherd seems to be from an open vessel, perhaps a bowl or dish, and another came from a jar with a shoulder groove similar to that seen on Flavian-Trajanic jars, but also on later 2nd-century vessels. Other greyware sherds came from closed vessels, probably jars.

Oxidised wares amounted to *c.* three per cent of the assemblage by count and seven per cent by weight, being predominantly undiagnostic bodysherds. Four were of Severn Valley-type, but the rest are more likely to come from an unidentified north-western source. Mostly badly abraded, they included a sherd from (probably) a flagon or other narrow-necked vessel, and an everted rim from a jar. One small fragment with rouletting invites comparison with the oxidised North Gaulish pentice-moulded beakers imported to Britain in the 3rd century (Precious 2014, 50), but the fabric was rather finer than examples from York or Brougham.

There was, in addition, a small amount of whiteware. The fabrics were unlike those of flagons from the Midlands kilns, for instance Mancetter-Hartshill, but they are similar to whitewares made in Yorkshire, using Coal Measures clays. The whiteware sherds are mostly undiagnostic, but are all quite thick, one probably from the pedestal base of a *tazza*. The single small mortarium bodysherd was probably of Cumbrian origin, since the mica grits are consistent with mortarium fabrics known to have been made in Cumbria (Hartley 1991, 157-8).

Finewares associated with pyre deposits were predominantly Nene Valley colour-coated ware and Trier black-slipware. There was also a very tiny scrap of roughcast ware, probably from the Argonne, and a single Oxford red colour-coated dish (type C45; Young 2000, dated AD 270+). Most of the Nene Valley sherds are from long-necked indented beakers with beaded rims, dating to the late 3rd to mid-4th century (Perrin 1999, 96), but there was also a late 3rd- to 4th-century bead-and-flange bowl (Perrin 1999, 86-7). On Hadrian's Wall, these have been dated to the late 4th century (Bidwell and Croom 2010, table 4.1). There were, in addition, at least three Trier black-slip beakers. Two are indented, and the other is long-necked, with a bead rim, probably also indented. All belong to Symonds type 1 (1992) and date to *c.* AD 200-75 at the latest (Brulet *et al.* 2010, 353-5).

### *Chronology*

The fabrics and forms range in date from the Antonine period to the 3rd century, with the Black-Burnished ware 1 jars, suggesting a peak in activity *c.* AD 215/16 to *c.* AD 270, and optimally *c.* AD 240-70, a range confirmed by the chronological modelling (below, p. 71). The finewares suggest a similar date-range, with the Trier-ware beakers dated to AD 200-75, and the Nene Valley colour-coated wares to the 3rd and late 3rd/4th centuries (Perrin 1999). On Hadrian's Wall, the Nene Valley flanged-bowl form is dated to *c.* AD 360-400+ (Bidwell and Croom 2010), which is of interest, in view of potential discrepancies in the dating of burial 406 (above, p. 52). At Brougham, Severn Valley-type oxidised wares were present from the first half of the 3rd century (Evans 2004, 341), and this is consistent, at Beckfoot, with the date-range suggested by other types. The Oxford red colour-coated bowl is generally regarded as late 3rd-4th century, but might not have reached the north until the mid- to late 4th century, as at Carlisle (Swan *et al* 2009, 596). With the exception of material from the Phase 1 pyre dump (above, p. 49), earlier types are probably residual, being found alongside 3rd-century pottery.

Thus, the coarsewares seem to indicate activity beginning in the early Antonine period, followed by a peak in the mid-3rd century, and a subsequent decline by its last two decades, when Crambeck ware might be expected to have appeared, had activity continued (Swan *et al* 2009, 606). Although there are some mid- and later 4th-century types, they all come from disturbed subsoils rather than cut features. The absence of Crambeck ware and diagnostically late calcite-gritted ware suggests that burials were no longer taking place by the 4th century, although memorial rites may still have been observed.

### *Illustrated vessels*

- 1 Black-Burnished ware 1 jar, with sharply everted rim and obtuse lattice (Fig. 10.1). Scorched.  
Trench 3, Phase 1/2 pyre debris 305, OR 1119, after AD 215/16
- 2 Black-Burnished ware 1 jar base with graffito (Fig. 10.2).  
Trench 3, Phase 1/2 pyre debris 305, OR 1152
- 3 Black-Burnished ware 1 jar with splayed rim, obtuse lattice, and shoulder groove (Fig. 10.3).  
Trench 4, Phase 3 layer 405, OR 1066, after AD 240
- 4 Small, near-complete, Black-Burnished ware 1 beaker, with splayed rim, obtuse lattice, and shoulder groove (Fig. 10.4). Surfaces cracked, with slight scorching around lower body and base. Tip of rim largely broken off in antiquity. Cremation urn.  
Trench 4, Phase 2, 408, contents of urn in burial 406, OR 1072, after AD 240
- 5 Cream fabric with darker self-slip. *Tazza* base (Fig. 10.5), scorched outside.  
Trench 5, Phase 3 layer 502, OR 1036
- 6 Black-Burnished ware 1 necked jar with everted rim tip (Fig. 10.6). Partially burnt.  
Trench 5, Phase 1 pyre debris 510, OR 1010, 2nd century
- 7 Trier black-slip ware long-necked bead-rim beaker (Fig. 10.7). Severely burnt and sintered.  
Trench 6, Phase 1/2 pyre debris 607, OR 1042, *c.* AD 200-75

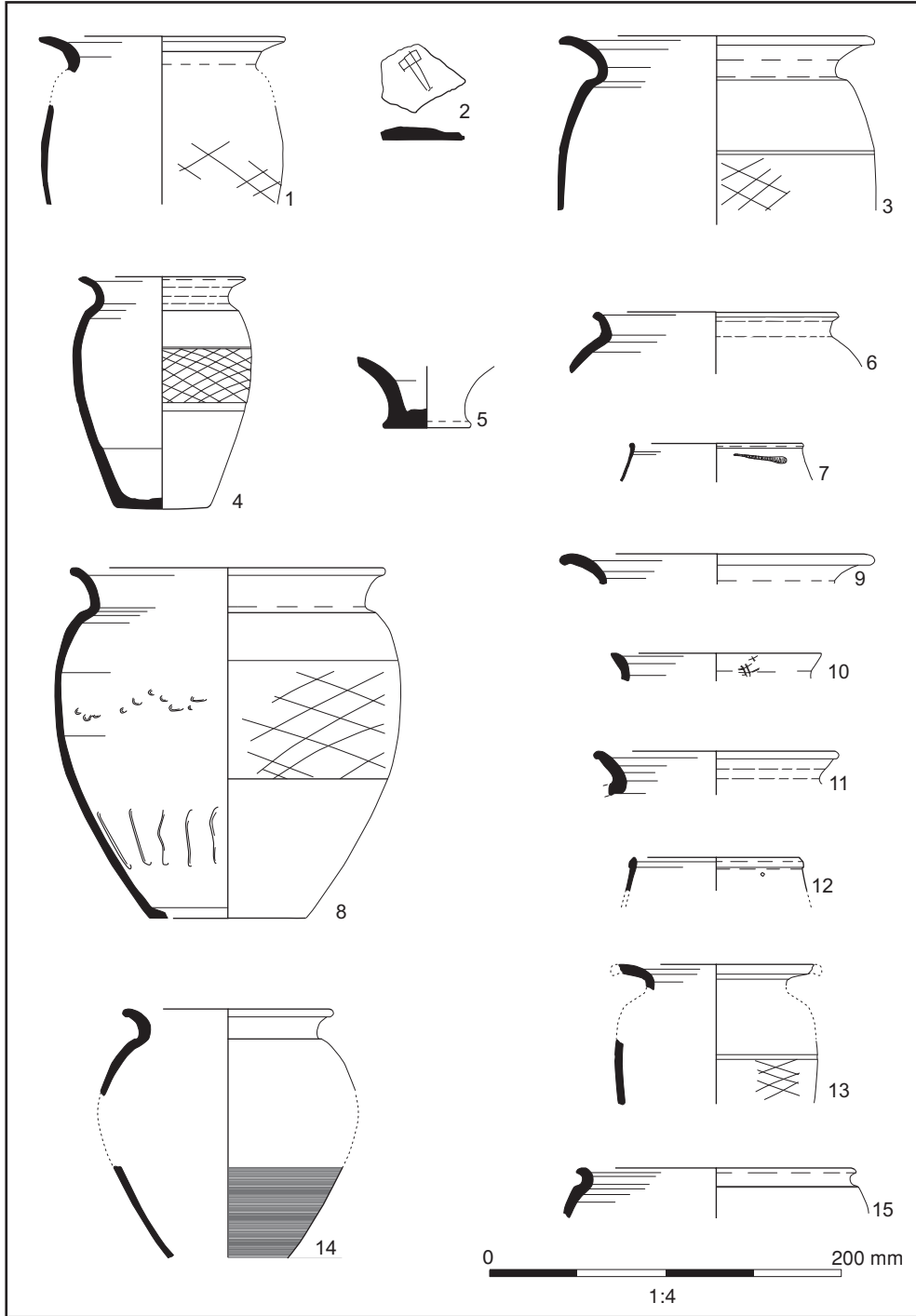


FIG. 10. Selected coarsewares.

8 Black-Burnished ware 1 jar with splayed rim, obtuse lattice, and shoulder groove (Fig. 10.8). Cremation urn.

Trench 7, Phase 2 fill 706 (burial 707), OR 1007, OR 1082, after AD 240

9 Black-Burnished ware 1 jar with everted rim (Fig. 10.9).

Trench 8, Phase 3 layer 802, OR 1116, after AD 215/16

10 Local copy of Severn Valley ware narrow-necked jar with everted rim (Fig. 10.10). Criss-cross graffito.

Trench 8, Phase 3 layer 802, OR 1011, OR 1116

11 Black-Burnished ware 1 jar with everted rim (Fig. 10.11).

Trench 8, Phase 3 layer 802, OR 1132, after AD 215/16

12 Nene Valley beaker with long neck and beaded rim (Fig. 10.12).

Trench 8, Phase 3 layer 802, OR 1132, late 3rd to mid-4th century

13 Black-Burnished ware 1 jar with sharply everted rim, obtuse lattice, and shoulder groove (Fig. 10.13).

Trench 8, Phase 1/2 deposit 807, OR 1137, after AD 240

14 Black-Burnished ware 1 jar, with everted rim and obtuse lattice (Fig. 10.14).

Trench 9, Phase 3 layer 902, OR 1043, after AD 215/16

15 Black-Burnished ware 1 jar, with neckless bead-rim (Fig. 10.15). Antonine (Gillam 1976, no. 30).

Trench 9, Phase 3 layer 902, OR 1045

### ***The metalwork***

A single small, distorted fragment of copper alloy, possibly from a bow brooch, came from Phase 3 layer 902. Otherwise, some 478 small fragments of ironwork were recovered, almost entirely from Roman contexts, including pyre deposits, and the fills of ditches and cremation burial pits. Most of the identifiable objects are fragmentary nails, amongst them 114 hobnails. It can be assumed that most of the other nails (exclusively Manning (1985) type 1b) are from wood used in building funerary pyres, or wooden objects burnt upon them, for instance biers or boxes. Whether these were used to fix elements of the pyre together, or entered the pyre incidentally, in reused timber or in furniture, cannot be determined.

Nails were also found alongside fragments of relatively narrow strip, for instance in Phase 1/2 deposits 605 and 606. All are in poor condition and there is no evidence for the type of angled fragments that might have been used to reinforce corners, but their apparent narrowness might imply that they were reinforcing strips for relatively small wooden objects, most probably boxes, and a double-armed spike from pyre debris 607 is of a size suitable to seat a small handle.

Hobnails were in deposits from all phases, the greatest concentration being in Phase 1/2 pyre debris 607 (79). Their presence, implying nailed shoes, reflects the dress of the deceased, with their presence in pyre debris, or in ones and twos in other deposits, indicating that they were burned on the pyre, rather than placed unburnt within the grave. X-ray suggests that significant numbers of them are little worn, perhaps suggesting that the bodies were dressed in their best, to the extent of obtaining new, or refurbished, shoes. It has long been suggested that the deposition of shoes in graves had ritual connotations (Crummy and Crossan 1993), perhaps symbolising the

journey to the afterlife. This has, however, been challenged (Crummy 2011, 48), their presence perhaps simply reflecting the fact that the bodies were clothed. Hobnails and nails have come from grave pits at comparable northern military cemeteries, such as Brougham (Mould 2004), Birdoswald (Wilmott *et al.* 2009), and Low Borrowbridge (Hair and Howard-Davis 1996), as well as Beckfoot, from excavations in the 1970s (Caruana 2004).

### ***Other finds***

Although 28 fragments of vessel glass were recovered, only 14 are likely to be Roman, all extremely small chips recovered by sieving. A single blown, natural blue-green fragment from Phase 3 layer 802 possibly derived from a 2nd-century flask.

Some of the five fragments of stone were, clearly, modified, but none was an identifiable artefact. There were also four small fragments of possibly Roman tile, none in excess of 40mm, and all highly abraded. These derived from the base of Phase 3 subsoil 402, above cremation 406, and disturbed pyre debris 807 and 605. It is possible that they were items placed within the pyre, although none showed particular signs of burning.

### ***The osteological evidence***

#### *HWebb*

Some 27 deposits of cremated bone were analysed, following the methodologies set out in published guidelines (McKinley 2004a; BABA0 2010; Brickley and McKinley 2004; see the archive for details). The constraints of the excavation methodology (Collins 2005) mostly precluded 100 per cent recovery of cremated human remains, however. Analysis included estimations of the minimum number of individuals represented (MNI), their age and sex and any pathological condition.

#### *Phase 2 ditches 213 and 705*

The upper fills (214, 215) of ditch 213 produced total bone weights of 39.9g and 761.3g respectively (Table 3). The amount from 215 is significant, since only a sample of 20-50 per cent of the ditch within the trench was excavated. Indeed, it is not too far below the lowest weight (1000g) observed for modern adult cremations (McKinley 2000a, 269). The vast majority of bone fragments were white in colour, with only a few grey fragments in fill 215.

Fragments measuring 4-10mm comprised the largest proportion of the total bone weight in both deposits, but 215 also had a fairly high proportion (33 per cent) of >10mm fragments. All skeletal regions were represented in 215, but only skull and lower limb fragments came from 214. There was, however, a fairly high proportion of unidentified long-bone fragments, which probably included upper limbs. Deposit 214 also produced 1.5g of burnt animal bone. It is therefore thought that the bone in 215 formed an unurned burial, although, since fuel-ash slag and charcoal were present, other pyre debris may have been included (McKinley 2000b, 41). Fill 214 was possibly a dump of pyre debris, deposited on top of, and soon after, this. It is not clear, however, whether the two came from the same cremation.

The remains from 214 provided no specific indicators of age or sex, although the general bone size/thickness was in keeping with that of an older juvenile (*i.e.* adolescent) or an adult. The presence of a closed third molar root apex (Moorrees *et al.* 1963; Al Qahtani 2009) and the absence of unfused epiphyses (Scheuer and Black 2000) identified those in 215 as an adult, and two sexually dimorphic cranial features (a sharp orbit margin and a fairly flat glabellar region) indicated that it was probably a woman (Buikstra and Ubelaker 1994). The ectocranial (outer) surface of a skull vault had a very dense, porous texture. The lesion (not typical for porotic hyperostosis) probably indicated healed non-specific inflammation, which may have occurred as a result of scalp infection or irritation; such lesions are fairly common in archaeological human remains of all periods (L. Loe pers. comm.).

With a total weight of only 3.5g, bone from ditch 705 probably reflects the small section excavated. All was white and identified fragments included skull and radius, all of adolescent or adult size.

#### *Spreads 305, 606, and 607*

Total bone weights from spreads 305, 606, and 607 were 6.9g, 31.3g, and 133.7g respectively, but none of these features was fully excavated. With the exception of a small number of grey fragments in spread 606, all bone was white. The level of fragmentation was generally high, although the >10mm range in 607 made up a significant proportion (26 per cent) of the total bone weight. All regions of the skeleton were represented in each deposit, suggesting that each comprised a single individual. No skeletal indicators of age or sex were present, but the general bone size/thickness indicated adolescents or adults. No pathological lesions were observed.

The nature of these spreads, combined with the charcoal, fuel-ash slag, and burnt stone, suggests they may be pyre debris. The greater total weight in 607 (despite only *c.* 20 per cent being excavated) and the higher proportion of larger bone fragments, may indicate that it was an unurned burial, mixed with redeposited pyre debris, though no cut was observed.

#### *Cremation deposits from other features*

Only two (102 and 710) of the six pits examined were fully excavated, both having very low total bone weights (0.2g and 9.3g respectively). The bone from pit 102 (fill 103; Phase 1/2) was white, but was not confidently identified as human (omitted from Table 3). All fragments in Phase 1 pit 710 were white, and in keeping with an adolescent or adult. A probable tibia fragment exhibited dense, porous new bone deposits on the internal (medullary) surface, probably indicative of bone infection (osteomyelitis). The matrix of fill 709 was brownish-black, with a fairly high charcoal content, which probably indicates that it was redeposited pyre debris.

Only 50 per cent or less was excavated of the other four pits. Phase 1 dump 519 produced only 4.3g of bone, in which no specific indicators of age/sex were present, but the overall bone size/thickness suggested they were of an adolescent or adult. The matrix was very charcoal-rich, and this, combined with the sub-rectangular shape

TABLE 3: Summary of the deposit type interpretations.

Deposit	Feature type	% excav	Weight	Interpretation
214	Fill, ditch 213	<50%	39.9g	Redeposited pyre debris
305	Spread	50%	6.9g	
606	Spread	<50%	31.3g	
706	Fill, pit 707	100%	4.4g	
709	Fill, pit 710	100%	9.3g	
711	Fill, pit 707	100%	7.5g	
808	Fill, pit 815	<50%	6.3g	
215	Fill, ditch 213	50%	761.3g	Unurned burial + redeposited pyre debris
312	Fill, pit 315	50%	245.7g	
407	Fill, pit 406	100%	176.1g	
408	Fill of vessel, pit 406	100%	2.3g	
607	Spread	<50%	133.7g	?Redeposited pyre debris/?unurned burial + redeposited pyre debris
708	Fill of vessel, pit 707	100%	8.5g	Cenotaph
519	Fill, sub-rectangular pit 518	50%	4.3g	Pyre
704	Fill, ring ditch 705	<50%	3.5g	Cremation-related deposit
205	Fill, pit 204	50%	0.2g	Redeposited
202	Subsoil layers		0.6g	/
502			8.2g	
602			0.5g	
702			2.1g	
902			0.3g	
510	Mixed deposits		9.6g	/
605			1.7g	
116	Unexcavated feature		0.5g	/
807			0.9g	
809			0.8g	

and evidence for *in situ* burning, suggests that these were the remains of a pyre. A low bone weight would be expected if the bulk of the cremated bone had been removed for burial and the remaining debris raked out and redeposited elsewhere (McKinley 2000b, 39-40).

The total bone weights recovered from 205 (Phase 3a pit 204) and 808 (Phase 1/2 pit 815) were 0.2g (a single fragment only) and 6.3g respectively. In both deposits, the bone fragments were white, and all in keeping with adolescent/adult size, although no indicators of sex were present. The dearth of bone and the absence of charcoal in fill 205 might suggest that it was a single redeposited bone, rather than a formal cremation deposit, whilst the large proportion of charcoal in fill 808 suggests it was pyre debris.

The fill (312) of Phase 3a pit 315 was charcoal-rich, and the total bone weight was much greater than in other pits, at 245.7g. Almost a third (30 per cent) comprised fragments over 10mm in size. All skeletal regions were represented, and the presence of completely fused epiphyses, including the annular rings on vertebral body fragments, indicated that the individual was adult. There were no specific indicators of sex, although the bones (including vertebrae and hand/foot phalanges) were notably small/gracile, which might just suggest a woman. The greater bone weight and proportion of larger fragments, and the charcoal-rich nature of the fill, suggests that this may have been an unurned burial, with redeposited pyre debris. There was also 1.7g of burnt animal bone present.

The Phase 2 pits containing upright Black-Burnished ware 1 jars (406 and 707) were fully excavated. In pit 406, backfill 407, surrounding vessel 408, produced a total bone weight of 176.1g. All fragments were white, and all regions of the skeleton were represented; based on the presence of unfused joint-surface fragments, these were identified as juvenile, probably an older child (six-12 years) or adolescent (13-17 years). Deposit 408, from within the vessel, contained just 2.3g of bone, none of which could be identified to skeletal element. It is likely, given the very low weight, that the bone fragments inside the vessel had originated in deposit 407, having entered the pot via post-depositional processes, suggesting the vessel was a grave good, rather than a funerary urn. The level of fragmentation was high, with almost half (48 per cent) of the total bone weight in 407 derived from the 4-10mm fraction, and over a third (34 per cent) comprising fragments 2-4mm in size. Whilst juvenile bones are more fragile and susceptible to fracture than adult ones, these levels of fragmentation are in keeping with the majority of other deposits within the assemblage. The presence of a moderate amount of bone and a pottery vessel within pit 406 suggests that it was a formal burial, with the high charcoal content indicating that some of it was redeposited pyre debris.

None of the fills from pit 707 produced large quantities of bone. The main deposit (706) had a total bone weight of just 4.4g, fill 708 within the vessel produced 8.5g, and the underlying deposit (711) produced 7.5g. In 708, the general size and thickness of the bones (notably the skull fragments), and the presence of an unfused distal humerus epiphysis, indicate that this was a juvenile, probably an older child (six-12 years). Several of the skull fragments in 711 were also fairly thin, and it seems reasonable that the bone from all three deposits is from the same individual. Given that the greatest weight of bone was within the vessel, this was probably a formal urned burial, although the low bone weight is more in keeping with a token or 'cenotaph' burial. The surrounding deposits (706 and 711) were charcoal-rich, and were probably redeposited pyre debris. A few fragments of burnt animal bone were also recovered from deposits 708 (1.1g) and 711 (0.1g).

### *Conclusions*

The partial excavation of many of the features (Collins 2005) has severely limited analysis and interpretation of the assemblage, but the site has still provided valuable information on the nature of the cremation deposits. The colour of cremated bone reflects the efficiency of the cremation process, with white indicating full oxidation (c. 600°C<sup>+</sup>; McKinley 2004a, 11). A large minority of black, blue and grey fragments



are frequently noted in Romano-British cremation burials, and it has been suggested that full oxidation may not have been considered necessary (McKinley 2000a, 269; 2000b, 39). Bone from Beckfoot was predominantly white, and the notably small number of other colours is interesting, suggesting a particularly efficient cremation process and/or a requirement for complete oxidation; a similar situation was noted at the cemetery at Brougham (McKinley 2004b, 293-4).

The majority of the deposits were probably redeposited pyre debris, from a variety of cut features, as seen at other Romano-British sites (McKinley 2000b, 41). Some were associated with unurned burials, as, for instance, at Baldock (Area 15; McKinley 1991), St Stephen's cemetery in St Albans (McKinley 1992), and the East London Cemeteries (McKinley 2000a), where many of the burials had pyre debris in the grave fills. At least one burial previously excavated at Beckfoot also demonstrated this (Bellhouse and Moffat 1958). No sex or specific age estimations could be made, a consequence of the (invariably) low bone weights.

The three deposits containing the largest quantities of bone were probably unurned burials, mixed with pyre debris. These larger amounts of bone made possible estimates of age and sex, there being two probable adult women and an older child or adolescent. In accordance with accepted practice (Brickley 2004, 23), the sex of the juvenile skeleton was not estimated.

### ***The animal bone***

#### *L Strid*

A small assemblage of 28 animal-bone fragments was recovered (see the archive for analytical methodologies and detailed analyses). Given its extreme fragmentation, most could not be identified to species. With the exception of a single unburnt rabbit femur from subsoil 302, the assemblage comprises burnt bones from cremation deposits, representing cuts of meat deposited in the grave, or the remains of sacrifices or funeral feasts placed on the pyre. Although there is evidence for a limited introduction of rabbit to Britain in the Roman period (Sykes and Curl 2010), it is likely that the femur is a modern intrusion.

The faunal remains from burial 707 included three small fragments identified as either metapodials, probably from paws, or small mammal long bones. If the former, they may represent the remains of a fur deposited amongst the grave goods, similar to that from a Roman inhumation at Asthall, Oxfordshire, where the unburnt bones from two forefeet and one hind foot from a dog were found beside the skeleton of a child (Booth *et al.* 1996). In pit 315, fragments from a pig skull and mandible suggest that an entire pig's head may have been deposited on the pyre.

### ***Charred Plant Remains and Charcoal***

#### *D Druce*

There is a general lack of palaeobotanical data from Roman cemeteries, especially in north-west England (OA North 2014; Hall and Huntley 2007), and, as a result, analysis of ten small but good-quality charcoal assemblages has contributed significantly to the

national body of knowledge (the methodologies for both charred plant remains and charcoal are in the archive).

Most of the charcoal samples are overwhelmingly dominated by oak (*Quercus* sp.), which includes mature trees over 50 years old. Alder (*Alnus glutinosa*) is fairly well represented, appearing in eight of the ten deposits, as is field maple (*Acer campestre*), present in five. Other, less abundant, taxa include hazel (*Corylus avellana*), willow/poplar (*Salix* sp./*Populus* sp.), and elm (*Ulmus* sp.), each recorded in three or fewer samples; blackthorn-type (*Prunus* sp.) and hawthorn-type (Maloideae) were present only in pyre debris 607. Charcoal diversity ranged from one (pit 815, fill 808) to seven species (ditch 213, fill 215). There was no obvious correlation between deposit type or size and taxa content or diversity. For example, the charcoal from cremation vessel 708 (two litres, with only a token amount of bone) was as diverse as that from 30/40 litre bulk samples.

Two samples produced notably different assemblages; 103, from pit 102, contained roughly 40 per cent coniferous wood, including yew (*Taxus baccata*) and at least one other type of gymnosperm; the contents (708) of an intact cremation vessel contained roughly 50 per cent alder in an otherwise mixed assemblage comprising oak, birch (*Betula* sp.), heather/heath (*Calluna vulgaris/Erica* sp.) and field maple.

By far the largest volume of charcoal came from pyre debris 606 and 607, amounting to over one litre and three litres respectively. Pyre debris also produced the largest fragments, often represented by 'blocks' 50mm cubed or larger. In both 607 and spread 305, these were dominated by oak and alder, with a few large (>20mm) fragments of field maple from the latter. These larger fragments might derive from wood used to construct the pyre, rather than 'packing' or kindling to aid combustion.

Charred plant remains, consisting primarily of fragments of rhizomes/tubers and grass (Poaceae) stem fragments, were recovered from four deposits. Ditch 213 (fill 215) also produced frequent charred grass seeds. The occurrence of charred rhizomes and tubers in cremation deposits is not unusual, perhaps representing the remains of grass used as kindling, or the turf on/with which the pyres were constructed, as was the case at Lankhills in Winchester (Challinor 2010). The preservation of turf is also tentatively supported by what appeared to be burnt peat or highly organic soil in fill 215 and spread 305. Both also produced highly vesicular material, tentatively identified as fuel-ash slag, a by-product of interaction between the intense heat of a cremation and items on the pyre, including the body (Fairgrieve 2007, 59). It may not be coincidental that 305 also contained fruit (hazelnut and unknown seed pods), which may be residual material originating from either the pyre wood (305 was one of only three deposits containing hazel wood), or from pyre goods.

Although oak and alder, and to a lesser extent, field maple were clearly the preferred woods for pyre construction, differences between deposits may reflect real differences in fuel use. For example, although only a minimal amount of bone (13g) was present in cremation vessel 708, the diversity of its charcoal assemblage suggests that a wide range of wood was used, with alder being the main constituent. Conversely, pit 815 (fill 808) contained only oak. A similar pattern was recognised at the Lankhills

cemetery, where charcoal assemblages from pyre debris were less diverse than those from discrete burials. Single-taxon debris may actually derive from a single pyre and reflect purposeful selection of a single species of fuel wood. Conversely, it is possible that more diverse assemblages may represent a more indiscriminate (but no less symbolic?) gathering of pyre wood (Challinor 2010). Other taxa, recorded in small quantities, or from only a few contexts, include elm, hazel, willow/poplar, birch, blackthorn/hawthorn-type, and heather/heath, and probably represent material gathered for kindling, or as grave goods.

Pit 102 (fill 103) was enigmatic in being the only feature to contain coniferous wood, including yew. Given yew's excellent wood-working qualities (Edlin 1949), it is tempting to suggest it represents the remains of an artefact or piece of pyre furniture; the same deposit also contained the charred remains of woven fabric. The presence of yew in cremation deposits is quite rare, and where it has occurred in significant quantities, it has been interpreted as the remains of an artefact or having been selected as fuel wood on religious grounds (Challinor 2012).

There is much evidence to suggest that, certainly in southern Britain, a single taxon, usually oak or ash, was favoured by both prehistoric and Roman cremation practices (Robinson 1995; Gale 2004; Challinor 2006; 2012; Challinor and Druce 2013; Druce forthcoming). Modern experiments using traditional pyre construction techniques suggest that roughly one ton of wood is required to cremate an average human body (McKinley 2004b), and mature oak and ash would have provided the best support and sustained heat required. The generally wider range of taxa in domestic contexts compared with cremation burials in Kent has been used to support the idea of deliberate selection of certain taxa, or even individual trees, for pyre construction (Challinor 2007; 2009, Thompson 1999). However, at some sites, for example Westhampton, West Sussex, a range of wood types was used for pyre construction, and some may have been reused structural timbers (Challinor 2007).

Except for the atypical assemblages from cremation vessel 708 and pit 103, it seems that, at Beckfoot, oak and alder were the preferred choices for pyre construction. This was also the case in Roman cremations at Lancaster (Huckerby 2009). Alder makes poor fuel unless it is well seasoned (Edlin 1949; Challinor 2010), and could thus be considered a strange choice for pyre construction. Evidence from an increasing number of sites, however, suggests that the pyre wood was probably collected from local woodland, as well as utilising reused structural timbers, or the waste-products of manufacturing. Charcoal assemblages from the cemetery at Brougham, for example, indicate that birch and alder, which were likely to have been growing locally, were used for pyre construction (Campbell 2004). This may have been due, in part at least, to shortages of more suitable wood, such as oak, which might have been reserved for building and wood-working, or as fuel in metal-working.

### ***Radiocarbon Dating***

*P Marshall, E Dunbar and P Reimer*

Eight samples (Table 4) were submitted to the Scottish Universities Environmental Research Centre (SUERC), and <sup>14</sup>CHRONO Centre, The Queen's University Belfast,

TABLE 4: Radiocarbon dates.

Laboratory number	Sample reference	Material & context	$\delta^{13}\text{C}$ (‰)	Radiocarbon Age (BP)	Calibrated Date (95% confidence)	Posterior Density Estimate cal AD (95% probability)
<b>Pyre debris 305</b>						
UBA-27998	305a	Carbonised <i>Corylus avellana</i> nutshell, single fragment from 305, a discrete dump of pyre debris	-24.5	1785±24	cal AD 135–335	130–225
SUERC-58012	305b	Charcoal, <i>Alnus glutinosa</i> , single fragment – as UBA-27998	-26.5	1870±30	cal AD 60–240	75–215
<b>Burial 315</b>						
SUERC-58013	312	Cremated human bone, adult ?tibia shaft from 312, the fill of burial 315	-20.7	2547±30	800–500 cal BC	–
UBA-27999	312c	Twig fragment, ?3 years growth	-28.1	1863±25	cal AD 70–240	155–240
<b>Burial 407</b>						
GU36299	407	Cremated human bone, juvenile ?humerus shaft from the main backfill of burial 407, surrounding vessel 408 in pit 406	–	Failed – insufficient carbon	–	–
UBA-28000	407c	Charcoal, <i>Betula</i> sp. single fragment – as UBA-27998	-25.1	1610±24	cal AD 390–540	385–535
<b>Burial 707</b>						
SUERC-58011	708a	Charcoal, <i>Alnus glutinosa</i> , single fragment from 708, the fill of a burial 707	-26.6	1854±30	cal AD 70–240	85–240
UBA-28001	708b	Charcoal, <i>Betula</i> sp. single fragment – as UBA-27998	-25.9	1871±37	cal AD 50–240	75–240

for radiocarbon dating (for details of the laboratory methods, radiocarbon results, and chronological modelling, see Marshall *et al.* 2015). The potential pool of suitable samples was restricted by the very fragmentary nature of the cremated bone and the small proportion of short-lived species amongst the charcoal assemblage from the cremations, which was dominated by oak (above, p. 68).

One fragment of cremated bone failed during pre-treatment (GU36299) and another (SUERC-58013) is clearly much earlier than a charcoal sample (UBA-27999) from the same burial (315). The success of radiocarbon-dating cremated bone depends on the

exposed temperature during the cremation process and the degree of recrystallisation of the inorganic bone matrix. The offset between the ages of the bone and charcoal from 315 may therefore be due to exchange reactions that took place between the partially recrystallised bio-apatite bone fraction (Olsen *et al.* 2008) and soil carbonates.

The radiocarbon dates on charcoal clearly fall into a coherent group concentrated in the first half of the first millennium cal AD (Fig. 11). The measurements are not statistically consistent ( $T' = 80.1$ ;  $T'(5\%) = 11.1$ ;  $\nu = 5$ ; Ward and Wilson 1978), and so they certainly represent more than one episode of funerary activity. Excluding the measurement from burial 406 (UBA-28000), however, the remaining five determinations are statistically consistent ( $T' = 8.0$ ;  $T'(5\%) = 9.0$ ;  $\nu = 4$ ) and may be of the same actual age.

Given the very limited number of samples, the estimates derived from the chronological model for the start and end of funerary activity are too broad to be of archaeological significance. Calculating the first- and last-dated activity from the dated samples does, though, provide some idea of the chronology of the cemetery. These estimates suggest the first dated cremation took place in *cal AD* 65–185 (95% probability; *first\_cremation*; Fig. 11) and probably *cal AD* 80–140 (68% probability), and the last in *cal AD* 385–535 (95% probability; *last\_cremation*) or *cal AD* 390–440 (68% probability).

The latest dated sample (UBA-28000) is significantly later than the other dated features, yet the ceramic evidence suggests a date in the mid-late 3rd century AD (*c.* AD 240–70). It is, therefore, possible that the charcoal fragment represents an intrusion from later activity on the site. An alternative model (Marshall *et al.* 2015; fig. 5) that excludes both UBA-28000 and SUERC-58013 suggests the main phase of dated cremation activity probably took place in the 2nd and early 3rd centuries cal AD.

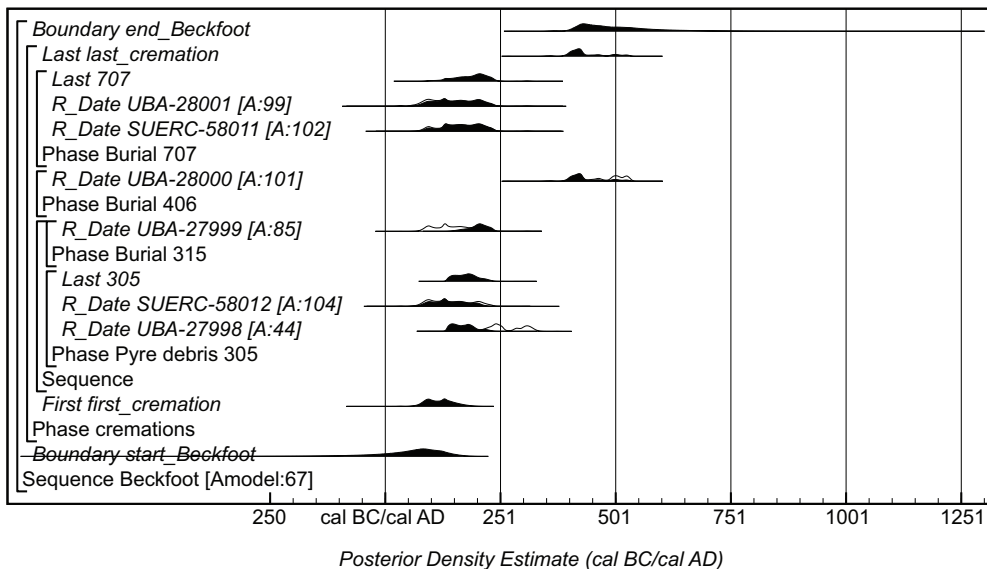


FIG. 11. Probability distributions of dates from Beckfoot.

## Discussion

### *Pre-Roman activity*

The site produced a small amount of evidence for prehistoric activity, in the form of probably residual pottery, seemingly dating to the late Neolithic/Bronze Age. Although there is little other evidence for prehistoric activity in the immediate vicinity, except for a group of probable Bronze Age lithics (HER 17823), evidence more generally points to a relatively well-represented presence in this part of the modern county, demonstrated by numerous flint scatters of Mesolithic to Bronze Age date (Cherry and Cherry 1983), as well as some burial evidence (Bewley 1994; Hodgson and Brennan 2006), and the complex multi-period remains from Stainton West, near Carlisle (Brown *et al.* in prep). The radiocarbon date of 800-500 cal BC (2547±30 BP; SUERC-58013), on possibly residual bone in Phase 3a feature 315, also raises the possibility of early Iron Age burial activity in the vicinity, unless the partially recrystallised bio-apatite bone fraction had been contaminated with soil carbonates (above, p. 71).

### *The Roman evidence*

The evaluation confirmed that Milefortlet 15 either no longer exists, or has been mislocated, Richard Bellhouse perhaps recording the last of the remains as they fell into the sea (Bellhouse 1962; Breeze 2006). Despite its now badly damaged and diminishing state, however, considerable elements of the Roman cemetery still survive, and these have the potential to contribute to an understanding of the dating, chronology and structure of military cremation cemeteries in the north-west, and the range of funerary rituals carried out within them.

There is also sufficient stratification to establish a sequence of activity, and to perceive relatively subtle changes through time. Information from the pottery refines the sequence, suggesting three successive periods of activity, from the early 2nd to the late 3rd century AD or later. Chronological modelling refines this to the 2nd to early 3rd centuries, although later pottery from overlying layers, and one later radiocarbon date, extend the period of activity. Previous pottery finds (Caruana 2004) demonstrate that deposition continued, although possibly at a reduced rate, well into the late 4th, or even the early 5th, century AD, well beyond the occupation of either Milefortlet 15 and perhaps also the nearby fort.

The Roman military sites of the Cumbrian coast formed an extension of the Hadrian's Wall frontier, created in the AD 120s (Breeze and Dobson 2000), and comprised a series of regularly spaced fortlets and towers (equating to the milecastles and turrets on Hadrian's Wall) extending from the western end of the Wall at Bowness, where the Solway Firth widens rapidly, with forts at Moresby, Maryport and Ravenglass (Breeze 2004, 78; 2006). They are, however, poorly understood when compared with those on Hadrian's Wall (Breeze 2004, 83), and their associated cemeteries are even less so.

The fort at Beckfoot has been little studied, the only excavations taking place in 1879-80 (Robinson 1881; Breeze 2006, 386-7), and the date of its foundation is unknown. There is evidence for occupation from the 2nd to the 4th century (Mason 2009), and the position of a possible precursor to the south-east has been postulated (Woolliscroft

2009, 17), reflecting evidence from Maryport, which suggests a Flavian (AD 69-96) precursor there (Flynn 2006a; 2006b). Beckfoot may have been called *Bibra* or *Bribra* (Holder 2004, 60), if interpretations of the Ravenna Cosmography are correct (Breeze 2006). The only known garrison is the Second Cohort of Pannonians, probably in the 2nd century (Holder 1982, 120), recorded on an inscription found before 1794 (Birley 1961, 215; Collingwood and Wright 1965, RIB 880).

Artefacts found on the beach to the south-west of the fort, and in buried soils in the cliffs, seem to reflect the chronology of the fort (Caruana 2004, 154). A radiocarbon date of cal AD 258-666 (1540±100 BP (lab code unobtainable); Bellhouse 1989, 38) was obtained from a buried soil some 500m to the south-east of the cemetery, perhaps equating to the 'Roman' horizon in the cliff section.

Little is known of the period after the collapse of Roman governance in the north-west, though the scant archaeological evidence supports the few documentary references which indicate that a broadly Roman lifestyle persisted into at least the 6th century, in major centres such as Carlisle (Newman 2006; 2011; Webb 1998). Place-name evidence also suggests that there was a degree of continuity (Haverfield 1900; Armstrong *et al* 1950). It is likely that the Solway coast was incorporated into the kingdom of Rheged, and subsequently became part of the Anglian kingdom of Northumbria (Kirby 1962).

#### *The cemetery*

Cremation cemeteries have been identified at several northern forts, presumably serving both the garrison and any extramural settlement. In Cumbria they have been examined, to some extent, at Birdoswald (Wilmott 1993; Wilmott *et al.* 2009), Brougham (Cool 2004), and Low Borrowbridge (Hair and Howard-Davis 1996). In general terms, though, the range and nature of cremation practice remain poorly understood. The disposal of bodies by cremation appears to have been the standard practice in the early Roman period, gradually supplanted by inhumation from the late 2nd century onwards (Morris 1992; Cool 2011, 297). This general trend can be challenged in the north, however, where cremation has been widely demonstrated to have persisted into the 4th century, much later than in the south (Philpott 1991; 2006, 80). The characteristics displayed in northern cemeteries may represent a distinct military tradition (Caruana 2004, 161), or simply reflect the sparseness of evidence outside highly Romanised centres such as York (RCHM(E) 1962), Carlisle (*e.g.* Howard-Davis and Leah 1999; Zant *et al.* 2011), and Lancaster (Zant *et al.* 2009).

At Beckfoot, cremation clearly continued into the 4th century, if not later, although the lack of any skeletal evidence for inhumation is as likely to have been due to the rapid decay of bone in sandy, acidic soils (Mays 1998, 17-20) as to this rite's not having been practised. All trace of human bone had been lost, for instance, from apparent inhumation graves at Low Borrowbridge (Hair and Howard-Davis 1996), and several ostensibly empty stone cists have been recorded at Beckfoot (Bellhouse and Moffat 1958; Bellhouse 1962; Hogg 1962). Although the dating of calcined bone from pit 315 (above, pp. 70-1) raises the possibility of a prehistoric rather than a Roman presence, known Roman cists, such as those at Maryport (Haynes and Wilmott 2013), reduce this likelihood.

The cemetery is clearly of some importance, not least because of the discovery, in 1948, of a rare bed/couch burial accompanied by weapons (Hogg 1949), with a second likely couch-burial found in 1954 (Bellhouse 1954), as well as many more 'conventional' cremation burials, both uncontained and in urns (see Caruana 2004). This raises the possibility of a wide range of burial practices, some perhaps reflecting the ethnicity and cultural preferences of the local garrison.

The majority of burials can be described as 'simple', being urned or unurned cremations, placed within small, generally quite shallow, pits cut into the natural subsoils. Very little evidence exists for auxiliary vessels or other objects being placed within the graves, but this does not preclude the presence of organic pyre and grave goods.

There is no evidence for markers, but two graves (pits 516 and 707) were encircled by ditches, creating small enclosures, 2-3m in diameter. It is not clear whether these ditches marked an exclusion zone around the graves, or were simply the source of material for a small barrow. At Petty Knowes in Northumberland, many graves were covered by mounds, 3-5m in diameter (Charlton and Mitcheson 1984), whilst such enclosures are known elsewhere. These have been identified at Low Borrowbridge (Hair and Howard-Davis 1996), but they tended to be squarer, and although later 2nd-century in date, may have reflected an enduring Iron Age tradition, similar to that seen, for instance, in East Yorkshire, rather than the apparently more Romanised activity at Petty Knowes. None of the burials at Brougham (Cool 2004) were enclosed by ditches.

The limited nature of the evaluation means that the overall layout of the cemetery was not explored, though variations in the density of burials, and occasional stretches of ditch, mainly aligned north-south (Fig. 2), were identified, the latter perhaps marking subdivisions. This implies that the cemetery was maintained in some way, with a need for internal division, at least at some point during its lifetime. The small 2nd/3rd-century cemetery at St Nicholas Yard, Carlisle, appears to have been bounded by substantial ditches, but it is possible that these were part of a larger field system (Howard-Davis and Leah 1999). Alternatively, the individual graves may have been poorly marked, or the cemetery infrequently used, so that field boundaries encroached at a fairly early stage. Although the cemetery has been linked with both the milefortlet (Bellhouse 1962) and the fort (Caruana 2004, 153), little of the material from it can be dated to as early as the Hadrianic period, the time at which the milefortlet may have been occupied. Thus it would seem more likely, especially as the cremated remains of children, adolescents and perhaps women have been recognised, that it was a general and long-established place of burial, used by the fort garrison and others in the vicinity, with the ditches perhaps defining areas belonging to specific groups.

#### *Cremation and its accompanying ritual*

The choice of cremation or inhumation can make a substantial difference to the range of data available, and pyre debris is clearly important in supplying evidence for the ritual accompanying the funerary act (Cool 2011, 293). At Beckfoot, there were not only discrete, if small, deposits of cremated human bone, but also significant deposits of such debris.



Two different procedures were used to dispose of the dead by cremation. In one, the so-called *bustum*, a pyre was erected and fired over a grave, thus collapsing into it as it burned, so that the cremated remains were not subsequently disturbed. In the second, *ustrinum*, the pyre was erected either in a place set aside for the purpose (perhaps owned or controlled by a single family or social grouping, such as a soldiers' funeral club (Davies 2013, 148)), or simply somewhere other than the final place of burial. Once the pyre had been extinguished and cooled, the cremated remains underwent a process of selection, during which some, at least, of the bone, and possibly some of the pyre debris, were removed for formal burial, and the remainder disposed of elsewhere.

*Bustum* burial is rare in Britain (Philpott 1991), but the burials excavated at Beckfoot in 1948 and 1954 (Caruana 2004, events 6 and 8) were probably two such, although some scope exists for challenging this interpretation (*op. cit.*, 156). Excavations elsewhere in the Roman world have, however, suggested a blurring of the two procedures, with the last use of an *ustrinum*, demonstrably used on several occasions, being treated in the manner of a *bustum* burial, the cremated body remaining *in situ* (Gonçalves *et al.* 2010).

It is not known what activity might have preceded the interment, though increasing evidence for biers, as carbonised wood and burnt bone inlay (Cool 2004, 439), suggests that the deceased may have been carried to the place of cremation in procession, accompanied by some public display of grief (Erker 2011). The two 'couch-burials' (Caruana 2004) may support this. It might be no coincidence that, at Brougham, this phenomenon has been linked to likely Pannonian influence (Cool 2004, 464-6), and Beckfoot had a Pannonian garrison (above, p. 73). The bent, 'ritually killed', sword found in 1948 (Caruana 2004, 147-50) can also be paralleled in early Roman auxiliary burials in Pannonia (Mráv 2013; for instance, Nagytéteny grave 666).

The remainder of the cremations in the cemetery may have been carried out at one or more *ustrina*, and although little evidence was found for a specific and frequently used burning place, the amount of pyre debris spread over the site, and concentrations within it, might suggest that it was nearby. Indeed, a shallow, early (Phase 1) feature (518) containing pyre debris might have been the site of a pyre, the bulk of the remains having been cleared away for subsequent burial.

Charcoal analysis may indicate a systematic selection of wood for the pyre, with oak and alder (perhaps from different woodlands: Rackham 1986) being those predominantly used, perhaps with an admixture of small amounts of other sweet-smelling timber, intended to mask the smells associated with burning. Oak is a good fuel wood, having the tensile strength to support the weight of the pyre, including pyre goods, and it burns with considerable and prolonged heat (above, p. 69). The timbers came, on occasion, from trees in excess of 50 years old, and the appearance of nails in the pyre debris suggests that some of the wood had been reused.

The pyre might well have provided a setting for considerable conspicuous display (Cool 2011), both of the deceased, and of the gifts and offerings placed on the pyre by the living, to be consumed by the flames. Artefacts in the pyre debris have shed some light on this part of the process, with hobnails implying that at least some of the deceased

were shod, or at least that shoes accompanied them on the pyre. Animal bone from Phase 2 burial 707 has tentatively suggested that a child may have been accompanied by furs from an animal small enough to have the feet still attached (above, p. 67).

The cremation would have been accompanied by sacrifice (Turcan 2013), with the public consumption of food (including parts of the sacrificial meats) and drink, and probably some provision was made for food to accompany the deceased on his or her journey. Analysis suggests that a whole pig's head might have been burnt on a pyre, debris from which was placed in pit 315 (above, p. 67). Pigs and chickens are the most frequently found animal bones in cremation assemblages (Bond and Worley 2004, 332) and, indeed, a sow was regarded as a suitable sacrifice to the chthonic deities: importantly, burial did not gain its legal and religious significance until such a sacrifice had been made (Erasmus 2012, citing Cicero, *de Legibus* 2.22.55).

It is possible that the funeral feast was cooked, or at least reheated, in the outer embers of the pyre, and drinking vessels perhaps cast onto the pyre after use. It is easy to imagine that vessels used at a funeral might be regarded as ritually polluted, and that they would be destroyed rather than being retained for future use. Modern records of open funeral pyres suggest that, depending on circumstances, they can burn for up to ten hours (Weekes 2004; McKinley 1989), giving plenty of time for ritual feasting before the funeral might move to its next phase.

The bone intended for burial could not be selected until the pyre was cool enough to approach, having been either extinguished or allowed to burn out. How long an interval there might have been between the two acts cannot be known. One feature noted frequently in Roman cremations is that there seems not to have been any requirement to collect all of the bone, often only nominal amounts being recovered (McKinley 2004b, 297), and none of the burials at Beckfoot produced even half the amount expected from an average human body. This seems to be a feature of cremation burials in the northern military zone (*e.g.* Brougham (Cool 2004), Low Borrowbridge (Hair and Howard-Davis 1996, 121) and Lancaster (Zant *et al.* 2009)). Roman ritual required that, after collection, the bones were washed in wine and milk by the women of the deceased's household (Erker 2011, 53), but whether this was observed in the farther corners of the Empire is not certain, and local ritual may have differed. The cremated bone in the two pottery vessels (Phase 2 burials 707 and 406) was predominantly small fragments, perhaps smashed after collection, yet the larger fragments remaining on the pyre would have been easier to collect than fragments around 4-10mm or smaller. Many modern cremation rites include breaking up some or all of the bone (Kim 2012). Reducing them in size also, of course, made them easier to place in the relatively small jars that served as urns. By the time this stage of the process was reached, there may have been no strong imperative that the bone was that of the deceased, or even human, since it seems unlikely that the mourners would have sufficient skill to recognise the smaller, shattered pieces, some of which would have come from burnt pyre offerings.

The small deposits of bone were placed in the grave, often seemingly in organic containers, or directly in the grave cut. Only a token amount was placed into the urn

after it had been placed upright in the grave, the jar then being covered by pyre debris, presumably poured from above. Many of the burial pits appear to have been partially backfilled with pyre debris, but whether this reflects a desire to dispose of this material respectfully, or simply clear it away tidily, is not clear. There also seem to have been spreads of pyre debris not directly associated with burials, as well as deposits cleared into the ditches.

*The site's purpose and status*

*R S Leary and M Ward*

The ritual activity within the cemetery can be illustrated by the pottery. At a gross level, such activity is reflected in the relative proportions of vessel types represented (Fig. 12), jars, often used as cremation urns, being the most common type present on the site, with drinking vessels, particularly beakers, the next most frequently found. There are also flagons, for serving liquids. In contrast, vessels used specifically for preparing and serving food are rare, there being only two small mortarium bodysherds (one coarseware and putatively one samian). Whilst samian mortaria of form 45 have been recorded at Brougham (Dickinson *et al.* 2004) and Springhead (Penn 1961), not all samian mortaria were necessarily used for culinary purposes; ritual use has been suspected. Samian dishes and bowls are present, however, associated with burial 707 and its encircling ditch, 705, as well as in Phase 3 layers.

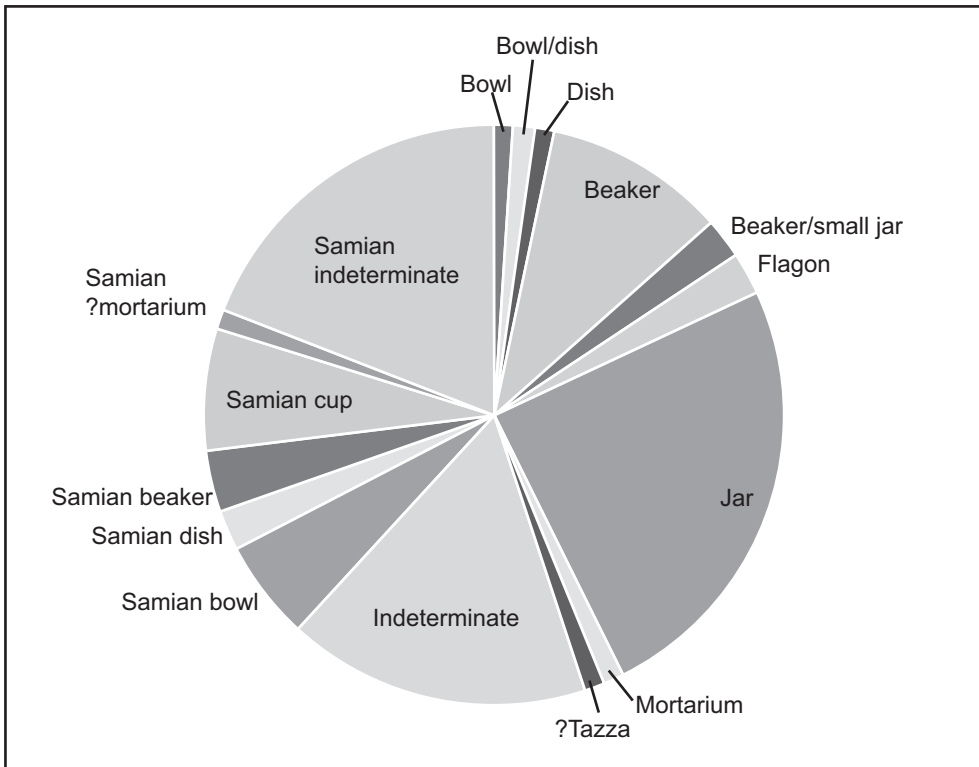


FIG. 12. Relative proportions of vessel types.

There is no evidence for amphorae, even though Spanish amphora sherds are known from elsewhere at Beckfoot (Caruana 2004, 168, event 54). This absence is not unusual at northern cemetery sites, there being a marked lack from, for instance, Petty Knowes (Gillam *et al.* 1984), Brougham (Evans 2004, 337), Low Borrowbridge (Hair and Howard-Davis 1996), Lanchester (Turner 1990) and Trentholme Drive, York (Gillam 1968), while only small fragments, mainly from the topsoil, came from the cemetery in Lancaster (Howard-Davis 2009).

The condition of the vessels often provides evidence for the nature of ceremonial activities associated with cremation. For example, the near-complete Black-Burnished ware 1 beaker from pit 406 was cracked all over, and scorched around the base and lower body, suggesting that it was placed in the embers at the pyre's edge. For other vessels, the degree of burning varied from partial scorching to being more thoroughly burnt. Admittedly, this may reflect domestic use prior to vessel's being selected for the funeral, but the pattern of burning at some sites (at Brougham, for instance, localised and intense scorching on one side; Evans 2004, 358), and the intensity of the burning, would suggest that it results largely from their use in a funerary context. At Beckfoot, around half of the jars and beakers are burnt, and four jars sooted, but the few coarseware serving vessels, flagons, and mortaria are unburnt, suggesting some difference in treatment. There is also an apparent difference between jars, usually moderately burnt, and beakers, some of which are severely burnt, or even sintered (particularly that from pyre deposit 606), suggesting that whilst jars were put beside the pyre, drinking vessels may have been placed directly on it. None of the beakers previously found at Beckfoot were burnt, but this might simply reflect the manner in which most of the earlier material was collected, which probably precluded the recovery of the small burnt sherds typical of pyre goods.

With the exception of three sherds from pyre deposits (605, 606, 607), the fineware beakers were all from Phase 3. Half were burnt, some very thoroughly, and they are also most likely to have been pyre goods, suggesting that this phase saw a considerable amount of reworking of earlier pyre deposits. Again, various types of fineware beaker seem to have been used in different ways. For instance, all of the Trier black-slip vessels were, significantly, burnt, like the samian, but only three of the 11 Nene Valley beaker sherds were even scorched. This might indicate that the former were placed on the pyre, whilst the latter were largely used for other purposes. The unburnt vessels, particularly the finewares and oxidised wares, came predominantly from the subsoil layers, and may thus be related to subsequent graveside rituals and/or memorial feasts, rather than the act of cremation. However, a complete, unburnt, Rhenish beaker, found in 1999 (Caruana 2004, 168), perhaps suggests that such vessels were used as grave goods, as well as being placed on the pyre. Black-Burnished ware 1 beakers were more common than fineware beakers, in the past being found both in burials and pyre deposits (Caruana 2004, 159, burial 16, pyre 8, and cremation 48).

Samian is generally uncommon at northern cemetery sites, either as pyre or grave goods. Where present, a military connection is usual and amongst military communities, samian was more likely to be used in pyre ceremonies (Cool and Leary 2012, 306), although it is not present in all military cemeteries. None was found

at Low Borrowbridge, Petty Knowes, or Lanchester, for instance, but at Brougham it occurs in large quantities, both as grave goods and in pyre deposits (Dickinson *et al.* 2004, 345-52). All samian from the Beckfoot assemblage was fragmentary, and shows signs of burning or heat (mostly extreme), suggesting a function as pyre goods. Little of the samian has come from burials *per se*, but a decorated and stamped bowl (form 30; die 5b of Cinnamus ii; AD 150-80) was repaired and used as an urn in a burial excavated in 1957 (Caruana 2004, 137). Furthermore, a stamped dish (form 18/31 or 31; die 2a of Beliniccus iii; AD 140-70) was found in erosion deposits on the beach, reworked and burnt nearly black (Caruana 2004, 163-4). As at Brougham, this dish may have been used as a lid to a jar in the cemetery (Cool 2004, 449-50). The extremely crazed surfaces of 26 of the 35 fragmentary samian vessels from Beckfoot may reflect sudden cooling of the still-hot remains, perhaps with wine (see Virgil, *Aeneid* 6, 226-7; Dewey 1917; Statius, *Silvae* 2.6, 84-93; Mozley 1928). This practice was suggested from the evidence of melted glass accompanying burnt samian at Brougham in formal burials and in redeposited pyre debris (Cool and Leary 2012, 310). The use of samian seems comparable functionally and chronologically with that at Brougham, and would provide another similarity between the two sites. The numerous moulded bowls endorse the view that decorated samian had become acceptable from the later 2nd century AD (Cool and Leary 2012, 311), certainly at these two outposts.

Although the information is disparate, it suggests that distinct ceramic assemblages were used at different stages in the progress through cremation and burial, with a predominance of eating vessels at the *ustrinum*, more drinking vessels deposited in the graves as pyre goods and unburnt drinking vessels selected as grave goods (Polfer 2000). At Brougham, vessels relating to food preparation, absent from the burials, were found in the unstratified groups, and this has been interpreted as reflecting activities associated with memorial feasts (Evans 2004, 364; Cool 2004, 457).

## Conclusions

Excavations at Beckfoot have demonstrated the importance of the cemetery, perhaps serving the fort in its early years, and used by the wider population by the 3rd century at least. It adds to the increasingly obvious difference in funerary rites in the military north, with chronological modelling and ceramic dating both making it clear that cremation continued as an acceptable rite to the end of the 3rd century and possibly into the 4th. It also hints at the likelihood that memorial rites, involving later visits to the cemetery, continued into the 4th century, implying a tradition of remembrance, and by extension an awareness of family history and connection, that lasted a considerable time. The site is still being eroded, however, and potential evidence, which will add to the overall picture of the manner in which Beckfoot's inhabitants were buried and commemorated, continues to be lost.

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## Notes

- Al Qahtani, S.J. 2009 *Atlas of tooth development and eruption*, London.
- Armstrong, A.M., Mawer, A., Stenton, F.M. and Dickens, B. 1950-2 *The place-names of Cumberland*, 3 vols, English Place-name Society, 20-2, Cambridge.
- BABAO 2010 *BABAO Code of Practice*, BABAO Working-Group for Ethics and Practice [online] available at: <http://www.babao.org.uk/index/cms-file-system-action/code%20of%20practice.pdf> (Accessed 20 October 2014).
- Bellhouse, R.L. 1954 'Appendix 1: further Roman finds in the Beckfoot cemetery area', *CW2*, 54 (1955), 51-3.
- Bellhouse, R.L. 1957 'Roman sites on the Cumberland coast 1956', *CW2*, 57 (1958), 18-24.
- Bellhouse, R.L. 1962 'Morcambe in Roman times and sites on the Cumberland coast. Appendix: the cliff section at the measured position of Milefortlet 15 (Beckfoot)', *CW2*, 62 (1962), 71-2.
- Bellhouse, R.L. 1989 *Roman sites on the Cumberland coast: a new schedule of coastal sites*, CWAAS Research Series No. 3, Kendal.
- Bellhouse, R.L. and Moffat, I. 1958 'Further Roman finds in the Beckfoot cemetery area', *CW2*, 58 (1959), 57-62.
- Bewley, R.H. 1994 *Prehistoric and Romano-British settlement in the Solway Plain, Cumbria*, Oxford.
- Bidwell, P.T. 1985 *The Roman fort of Vindolanda at Chesterholm, Northumberland*, HBMC Archaeological Report, No. 1, London.
- Bidwell, P. and Croom, A. 2010 'The supply and use of pottery on Hadrian's Wall in the 4th century', in Collins, R. and Allason-Jones, L. eds., *Finds from the frontier: material culture in the 4th-5th centuries*, CBA Research Report, No. 162, York, 20-36.
- Birley, E. 1961 *Research on Hadrian's Wall*, Kendal.
- Bond, J.M. and Worley, F.A. 2004 'The animal bone', in Cool, H.E.M. *The Roman cemetery at Brougham, Cumbria: excavations 1966-67*, Britannia Monograph series, No. 21, London, 311-32.
- Booth, P., Clark, K.M. and Powell, A. 1996 'A dog skin from Asthall', *International Journal of Osteoarchaeology*, 6, 382-7.
- Breeze, D.J. 2004 'Roman military sites on the Cumbrian coast', in Wilson, R.J.A. and Caruana, I.D., eds., *Romans on the Solway*, CWAAS Extra series, No. 31, Kendal, 66-94.
- Breeze, D.J. 2006 *J. Collingwood Bruce's handbook to the Roman Wall*, 14th edition, Newcastle upon Tyne.
- Breeze, D.J. and Dobson, B. 2000 *Hadrian's Wall*, revised edition, London.
- Brickley, M. 2004 'Determination of sex from archaeological skeletal material and assessment of parturition', in Brickley, M. and McKinley, J.I., eds., *Guidelines to the standards for recording human remains*, IFA Paper, No. 7, Southampton and Reading, 23-25.
- Brickley, M. and McKinley, J.I., eds., 2004 *Guidelines to the standards for recording human remains*, IFA Paper, No. 7, Southampton and Reading.

- Brown, F., Clark, P., Dickson, A., Gregory, R.A. and Zant, J. in preparation *From an ancient Eden to a new frontier: an archaeological journey along the Carlisle Northern Development Route*.
- Brulet, R., Vilvorder, F. and Delage, R. 2010 *La céramique romaine en Gaule du Nord: dictionnaire des céramiques. La vaisselle à large diffusion*, Turnhout.
- Buikstra, J.E. and Ubelaker, D.H. 1994 *Standards for data collection from human skeletal remains*, Arkansas Archaeological Survey Research Series, No. 44, Fayetteville.
- Campbell, G. 2004 'Charcoal and other charred plant remains', in Cool, H.E.M. *The Roman cemetery at Brougham, Cumbria: excavations 1966-67*, Britannia Monograph series, No. 21, London, 267-71.
- Caruana, I.D. 2004 'The cemetery at Beckfoot Roman fort', in Wilson, R.J.A. and Caruana, I.D., eds., *Romans on the Solway*, CWAAS Extra series, No. 31, Kendal, 134-73.
- Challinor, D. 2006 'Wood charcoal from Pepper Hill, CTRL specialist report' in Foreman, S. *Channel Tunnel Rail Link Section 1* [Online] Available at: <http://archaeologydataservice.ac.uk/archives/view/ctrl/envspr/downloads.cfm> (Accessed 20 December 2016).
- Challinor, D. 2007 'Wood charcoal', in Timby, J., Brown, R., Biddulph, E., Hardy, A. and Powell, A., *A slice of rural Essex: archaeological discoveries from the A120 between Stansted Airport and Braintree*, Oxford Wessex Archaeological Monograph, No. 1, Oxford and Salisbury, 96-399.
- Challinor, D. 2010 'Charcoal and charred plant remains from the cremation burials', in Booth, P., Simmonds, A., Boyle A., Clough, S., Cool, H.E.M. and Poore, D., *The Late Roman cemetery at Lankhills, Winchester: excavations 2000-2005*, Oxford Archaeological Monograph, No. 10, Oxford, 437-42.
- Challinor, D. 2012 'The wood charcoal', in Allen, T., Donnelly, M., Hardy, A., Hayden, C. and Powell, K., *A road through the past: archaeological discoveries on the A2 Pepperhill to Cobham road-scheme in Kent*, Oxford Archaeological Monograph, No. 16, Oxford, 468.
- Challinor, D. and Druce, D. 2013 'Appendix 1: wood charcoal', in Zant, J. and Howard-Davis, C., *Scots Dyke to turnpike: the archaeology of the A66, Greta Bridge to Scotch Corner*, Lancaster Imprints, No. 18, Lancaster, 151-7.
- Charlton, B. and Mitcheson, M. 1984 'The Roman cemetery at Petty Knowes, Rochester, Northumberland', *AA5*, 12, 1-31.
- Cherry, J. and Cherry, P. 1983 'Prehistoric habitation sites in West Cumbria: Part I, the St Bees area and north to the Solway', *CW2*, 83 (1983), 1-14.
- Collingwood, R.G. and Wright, R.P. 1965 *The Roman inscriptions of Britain*, 1, *inscriptions on stone*, Oxford.
- Collins, M. 2005 *Beckfoot Roman cemetery and milefortlet: specification for archaeological evaluation works*, English Heritage, unpublished document.
- Cool, H.E.M. 2004 *The Roman cemetery at Brougham, Cumbria: excavations 1966-67*, Britannia Monograph series, No. 21, London.
- Cool, H.E.M. 2011 'Funerary contexts', in Allason-Jones, L., ed., *Artefacts in Roman Britain, their purpose and use*, Cambridge, 293-313.
- Cool, H.E.M. and Leary, R.S. 2012 'Aspects of the use of samian pottery in Romano-British funerary practices', in Bird, D., ed., *Dating and interpreting the past in the western Roman Empire: essays in honour of Brenda Dickinson*, Oxford, 305-18.
- Countryside Commission 1998 *Countryside character, Volume 2: North West*, Cheltenham.
- Crummy, N. 2011 'Travel and transport', in Allason-Jones, L., ed., *Artefacts in Roman Britain, their purpose and use*, Cambridge, 46-67.
- Crummy, P. and Crossan, C. 1993 *Excavations of Roman and later cemeteries, churches and monastic sites in Colchester, 1971-88*, Colchester Archaeological Report, No. 9, Colchester.
- Davies, J. 2013 *Death, burial and rebirth in the religions of antiquity*, London.
- Dewey, F.H. 1917 *Virgil's Aeneid Books I-VI*, New York.
- Dickinson, B., Hartley, B.R. and Pengelly, H.W. 2004 'Fabric supply: Class C, samian wares', in Cool, H.E.M., *The Roman cemetery at Brougham, Cumbria: excavations 1966-67*, Britannia Monograph series, No. 21, London, 345-50.
- Druce, D. forthcoming 'Dagenham Beam Washlands, The wood charcoal'.
- Duff, H. 1877 *Proceedings*, *CW1*, 2 (1902), 270-1.
- Edlin, H.L. 1949 *Woodland crafts in Britain*, London.
- Erasmus, M. 2012 *Death: antiquity and its legacy*, Oxford.
- Erker, D.S. 2011 'Gender and Roman funeral ritual', in Hope, V. and Huskusa, J., *Memory and mourning in ancient Rome*, Oxford, 40-60.
- Evans, J. 2004 'The pottery vessels', in Cool, H.E.M., *The Roman cemetery at Brougham, Cumbria: excavations 1966-67*, Britannia Monograph series, No. 21, London, 333-60.
- Fairgrieve, S. 2007 *Forensic cremation recovery and analysis*, Boca Raton and London.

- Flynn, P.A. 2006a *Report of an archaeological evaluation at Sea Brows, Maryport, Cumbria*, unpublished report.
- Flynn, P.A. 2006b *Interim report of an archaeological excavation at Sea Brows, Maryport, Cumbria*, unpublished report.
- Ford, B. 2003 'The coarse pottery', in Holmes, N., ed., *Excavation of Roman sites at Cramond, Edinburgh, Dundee*, 58-85.
- Gale, R. 2004 'Charcoal from Later Neolithic/Early Bronze Age, Iron Age and Early Roman contexts', in Lambrick, G. and Allen, T. *Gravelly Guy, Stanton Harcourt, Oxfordshire: the development of a prehistoric and Romano-British community*, Thames Valley Monograph, No. 21, Oxford, 445-56.
- Gillam, J.P. 1968 'The coarse pottery', in Wenham, L.P., *The Romano-British cemetery at Trentholme Drive, York*, London, 56-86.
- Gillam, J.P. 1976 'Coarse fumed ware in northern Britain and beyond', *Glasgow Archaeological Journal*, 4, 57-89.
- Gillam, J., Jobey, I. and Ramsay, F. 1984 'Pottery', in Charlton, B. and Mitcheson, M., 'The Roman cemetery at Petty Knowes, Rochester, Northumberland', *AA5*, 12, 22-8.
- Gonçalves, D., Duarte, C., Costa, C., Muralha, J., Campanachol, V., Costa, A-M. and Angelucci, D.E. 2010 'The Roman cremation burials of Encosta de Sant'Ana (Lisbon)', *Revista Portuguesa de Arqueologia*, 13, 125-44.
- Hair, N. and Howard-Davis, C. 1996 'The Roman cemetery at Low Borrowbridge near Tebay: excavation of the Roman cemetery in 1991 and 1992', in Lambert, J., ed., *Transect through time: the archaeological landscape of the Shell North Western Ethylene Pipeline*, Lancaster Imprints, No. 1, Lancaster, 87-126.
- Hall, A.R. and Huntley, J.P. 2007 *A review of the evidence for macrofossil plant remains from archaeological deposits in northern England*, English Heritage Research Department Report Series, No. 87/2007, London.
- Hartley, B. and Dickinson, B. 2009 *Names on terra sigillata: an index of makers' stamps and signatures on Gallo-Roman terra sigillata (samian ware)*, 4: *F to KLUMI*, London.
- Hartley, K.F. 1991 'The mortaria', in Austen, P.S. *Bewcastle and Old Penrith: a Roman outpost fort and a frontier vicus*, CWAAS Research Series, 6, Kendal, 156-73.
- Haverfield, F. 1900 'The place-name Drumburgh', *CW1*, 16 (1916), 100-3.
- Haynes, I. and Wilmott, T. 2013 *Excavations at Camp Farm, Maryport: interim report for the 2011 and 2012 seasons*, unpublished report.
- Hodgson, J. and Brennand, M. 2006 'The prehistoric period: resource assessment', in Brennand, M., ed., *The archaeology of North West England: an archaeological research framework for the North West Region, Volume 1: resource assessment*, Archaeology North West, No. 8, Manchester, 23-58.
- Hogg, R. 1949 'A Roman cemetery site at Beckfoot, Cumberland', *CW2*, 49 (1949), 32-7.
- Hogg, R. 1962 'Beckfoot fort, cemetery site', *CW2*, 62 (1962), 323-4.
- Holbrook, N. and Bidwell, P.T. 1991 *Roman finds from Exeter*, Exeter Archaeological Report, No. 4, Exeter.
- Holder, P.A. 1982 *The Roman army in Britain*, London.
- Holder, P. 2004 'Roman place-names on the Cumbrian coast', in Wilson, R.J.A. and Caruana, I.D., eds., *Romans on the Solway*, CWAAS Extra series, No. 31, Kendal, 52-65.
- Howard-Davis, C. 2009 'The Roman pottery', in Zant, J., Drury, D. and Hughes, V. 'Excavations on Penny Street and King Street, Lancaster, 1995-2003', in Iles, P. and Shotter, D. *Lancaster's Roman cemeteries*, Lancaster, 36-9.
- Howard-Davis, C. and Leah, M. 1999 'Excavations at St Nicholas' Yard, Carlisle, 1996-7', *CW2*, 99 (1999), 89-115.
- Huckerby, E. 2009 'Charcoal and charred plant remains', in: Zant, J., Drury, D. and Hughes, V., 'Excavations on Penny Street and King Street, Lancaster, 1995-2003', in Iles, P. and Shotter, D. *Lancaster's Roman cemeteries*, Lancaster, 44-5.
- Kim, H. 2012 'The purification process of death mortuary rites in a Japanese rural town', *Asian Ethnology*, 71(2), 225-57.
- Kirby, D.P. 1962 'Strathclyde and Cumbria: a survey of historical development to 1092', *CW2*, 62 (1962), 77-94.
- Leary, R. S. 2014 *Beckfoot Roman Cemetery: the Romano-British pottery*, unpublished report.
- Lloyd, J.M. 2010 'Late Quaternary sea level change in the Solway Firth and Cumbria', in Livingstone, S.J., Evans, D.J.A. and O'Cofaigh, C., *The Quaternary of the Solway lowlands and Pennine escarpment: field guide*, Quaternary Research Association, London, 53-8.
- McKinley, J.I. 1989 'Cremations: expectations, methodologies and realities', in Roberts, C.A., Lee, F. and Bintliff, J., *Burial Archaeology, current research, methods and developments*, BAR British Series, No. 211, Oxford, 65-70.



- McKinley, J.I. 1991 'Cremated Bone from the Area 15 cemetery, Baldock', unpublished report for G. Burleigh, Letchworth Museum, 1991 [online] available at: [https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-921-2/dissemination/pdf/documents/human\\_bone\\_reports/JMcKinley\\_cremation\\_archive\\_rep.pdf](https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-921-2/dissemination/pdf/documents/human_bone_reports/JMcKinley_cremation_archive_rep.pdf) (accessed 20 October 2014).
- McKinley, J.I. 1992 'Cremation and inhumation burials from St. Stephen's cemetery, St. Albans', unpublished report for R. Niblett, Verulamium Museum, 1992 [online] available at: [https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-9212/dissemination/pdf/documents/human\\_bone\\_reports/JMcKinley\\_cremation\\_archive\\_rep.pdf](https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-9212/dissemination/pdf/documents/human_bone_reports/JMcKinley_cremation_archive_rep.pdf) (accessed 20 October 2014).
- McKinley, J.I. 2000a 'Cremation burials', in Barber, B. and Bowsher, D., *The eastern cemetery of Roman London: excavations 1983-1990*, MoLAS Monograph, No. 4, London, 264-77.
- McKinley, J.I. 2000b 'Phoenix rising: aspects of cremation in Roman Britain', in Pearce, J., Millett, M. and Struck, M., eds., *Burial, society and context in the Roman world*, Oxford, 38-44.
- McKinley, J.I. 2004a 'Compiling a skeletal inventory: cremated human bone', in Brickley, M. and McKinley, J.I., eds., *Guidelines to the standards for recording human remains*, IFA Paper, No. 7, Southampton and Reading, 9-12.
- McKinley, J.I. 2004b 'The human remains and aspects of pyre technology and cremation rituals', in Cool, H.E.M. *The Roman cemetery at Brougham, Cumbria: excavations 1966-67*, Britannia Monograph series, No. 21, London, 283-310.
- Manning, W.H. 1985 *Catalogue of the Romano-British iron tools, fittings and weapons in the British Museum*, London.
- Marshall, P., Howard-Davis, C., Dunbar, E. and Reimer, P. 2015 *Beckfoot Roman cemetery, Beckfoot, Cumbria: radiocarbon dating*, Historic England Research Department Research Series, No. 78-2015, unpublished report.
- Martin, L. 2006 *Beckfoot, Cumbria: report on geophysical surveys, October 2005*, English Heritage, unpublished report.
- Mason, D.J.P. 2009 'Beckfoot', in Symonds, M.F.A. and Mason, D.J.P., eds., *Frontiers of knowledge: a research framework for Hadrian's Wall, part of the Frontiers of the Roman Empire World Heritage Site*, Durham, 100.
- Mays, S. 1998 *The archaeology of human bones*, London.
- Moorrees, C.F.A., Fanning, E.A. and Hunt, E.E. 1963 'Age variation of formation stages for ten permanent teeth', *Journal of Dental Research*, 42, 1490-502.
- Morris, I. 1992 *Death-ritual and social structure in Classical antiquity*, Cambridge.
- Mould, Q. 2004 'Iron nails', in Cool, H.E.M. *The Roman cemetery at Brougham, Cumbria: excavations 1966-67*, Britannia Monograph series, No. 21, London, 271-2.
- Mozley, J.H. 1928 *Statius: Silvae, Thebaid I-IV*, London.
- Mráv, Z. 2013 'Graves of auxiliary soldiers and veterans from the first century AD in the northern part of Pannonia', in Sanader, M., Rendić-Miočević, M.A., Tončinić, D. and Radman-Livaja, I., eds., *XVII ROMEC Zagreb 2010 Radovi Proceedings Akten*, Zagreb, 87-116.
- Newman, R.M. 2006 'The early medieval period resource assessment', in Brennand, M., ed., *The archaeology of North West England: an archaeological research framework for the North West Region, Volume 1: resource assessment*, Archaeology North West, No. 8, Manchester, 91-114.
- Newman, R.M. 2011 'The early medieval period', in Brennand, M. and Stringer, K., eds., *The Making of Carlisle: from Romans to Railways*, CWAAS, Extra series, No. 35, Kendal, 69-84.
- Noon, S. 2011 *Vessel* [Online] available at: <https://finds.org.uk/database/artefacts/record/id/289313> (accessed 20 December 2016).
- OA North, 2006 *Beckfoot Roman cemetery: assessment project design*, unpublished document.
- OA North, 2014 *Beckfoot Roman cemetery and milefortlet, Cumbria: post-excavation assessment report*, unpublished report.
- Olsen, J., Heinemeier, J., Bennike, P., Krause, V., Margrethe Hornstrup, K. and Thrane, H. 2008 'Characterisation and blind testing of radiocarbon dating of cremated bone', *Journal of Archaeological Science*, 35, 791-800.
- Oswald, F. 1936-7 *Index of figure-types on terra sigillata ('samian ware')*, Liverpool.
- Penn, W.S. 1961 'Springhead: Temples III and IV', *Archaeologia Cantiana*, 74, 113-40.
- Perrin, J.R. 1999 'Roman pottery from excavations at and near to the Roman small town of *Durobrivae*, Water Newton, Cambridgeshire, 1956-58', *Journal of Roman Pottery Studies*, 8, 1-28.
- Philpott, R. 1991 *Burial practices in Roman Britain: a survey of grave treatment and furnishing AD 43-410*, BAR British Series, No. 219, Oxford.

- Philpott, R. 2006 'The Romano-British period resource assessment', in Brennand, M., ed., *The archaeology of North West England: an archaeological research framework for the North West Region, Volume 1: resource assessment*, Archaeology North West, No. 8, Manchester, 59-90.
- Polfer, M. 2000 'Reconstructing funerary rituals: the evidence of the *ustrina* and related archaeological structures', in Pearce, J., Millett, M. and Struck, M., *Burial, society and context in the Roman world*, Exeter, 30-7.
- Precious, B. 2014 'The oxidised wares', in Darling, M. and Precious, B., eds., *A corpus of Roman pottery from Lincoln*, Lincoln Archaeological Studies, No. 6, Oxford, 50-81.
- Rackham, O. 1986 *The history of the countryside*, London.
- Robinson, J. 1981 'The Roman camp near Beckfoot (Mowbray) Cumberland', *CW2*, 81 (1981), 136-48.
- Robinson, M. 1995 'The charred plant remains', in Barclay, A., Boyle, A., Bradley, P. and Roberts, M.R. 'Excavations at the Former Jewsons Yard, Harefield Road, Uxbridge, Middlesex', *Transactions of the London and Middlesex Archaeological Society*, 47, 20-2.
- Rogers, G.B. 1974 *Poteries sigillées de la Gaule centrale I: les motifs non figurés*, Gallia Supplement, No. 28, Éditions du CNRS, Paris.
- Royal Commission on the Historical Monuments (England) 1962 *An inventory of the historical monuments in the City of York: Volume 1, Eboracum, Roman York*, London.
- Scheuer, L. and Black, S. 2000 *Developmental juvenile osteology*, London.
- Stanfield, J.A. and Simpson, G. 1958 *Central Gaulish potters*, Oxford.
- Swan, V.G., McBride, R.M. and Hartley, K.F. 2009 'The coarse pottery (including amphorae and mortaria)', in Howard-Davis, C., ed., *The Carlisle Millennium Project: excavations in Carlisle, 1998-2001. Volume 2: the finds*, Lancaster Imprints, No. 15, Lancaster, 566-660.
- Sykes, N. and Curl, J. 2010 'The rabbit', in O'Connor, T. and Sykes, N., eds., *Extinctions and invasions: a social history of British fauna*, Oxford, 116-26.
- Symonds, R.P. 1992 *Rhenish ware: fine dark coloured pottery from Gaul and Germany*, Oxford University Committee of Archaeology Monograph, No. 23, Oxford.
- Thompson, G.B. 1999 'The analysis of wood charcoals from selected pits and funerary contexts', in Barclay, A. and Halpin, C. *Excavations at Barrow Hills, Radley, Oxfordshire, volume 1: the Neolithic and Bronze Age monument complex*, Oxford Archaeological Unit Thames Valley Landscapes, No. 11, Oxford, 247-53.
- Tomber, R. and Dore, J. 1998 *The National Roman Fabric Reference Collection: a handbook*, MoLAS Monograph, No. 2, London.
- Turner, R. 1990 'A Romano-British cemetery at Lanchester, Durham', *AA5*, 18, 63-77.
- Turcan, R. 2013 *The gods of ancient Rome*, Harvard.
- Ward, G.K. and Wilson, S.R. 1978 'Procedures for comparing and combining radiocarbon age determinations: a critique', *Archaeometry*, 20, 19-31.
- Webb, J., ed. and trans., 1998 *The age of Bede*, Harmondsworth.
- Webster, N. 1996 *Roman samian pottery in Britain*, CBA Practical Handbooks in Archaeology, No. 13, York.
- Weekes, J. 2004 'Reconstructing syntheses in Romano-British Cremations', in Bruhn, J., Croxford, B. and Grigoropoulos, D., eds., *TRAC 2004*, Oxford, 16-26.
- Whitlock, A. 2016 *Intaglio* [Online] Available at: <https://finds.org.uk/database/artefacts/record/id/550432> (Accessed 20 December 2016).
- Wilmott, T. 1993 'The Roman cremation cemetery in New Field, Birdoswald', *CW2*, 93 (1993), 79-86.
- Wilmott, T., Cool, H. and Evans, J. 2009 'Excavations at the Hadrian's Wall fort of Birdoswald (*Banna*), Cumbria: 1976-2000', in Wilmott, T., ed., *Hadrian's Wall: archaeological research by English Heritage 1976-2000*, Swindon, 203-395.
- Woolliscroft, D.J. 2009 'The problem of the "western Stanegate"', in Symonds, M.F.A. and Mason, D.J.P. eds., *Frontiers of knowledge: a research framework for Hadrian's Wall, part of the Frontiers of the Roman Empire World Heritage Site*, Durham, 15-17.
- Young, C.J. 2000 *The Roman pottery industry of the Oxford region*, BAR British Series, No. 43, Oxford.
- Zant, J., Drury, D. and Hughes, V. 2009 'Excavations on Penny Street and King Street, Lancaster, 1995-2003', in Iles, P. and Shoter, D. *Lancaster's Roman cemeteries*, Lancaster, 21-48.
- Zant, J., Miller, I., Murphy, S. and Hughes, V. 2011 'Archaeological excavations on a Roman cemetery, industrial site, and medieval suburb at 53-55 Botchergate, Carlisle 2001', in Newman, R.M., ed., *Carlisle: excavations at Rickergate, 1998-9 and 53-55 Botchergate, 2001*, Cumbria Archaeological Research Report, No. 2, Bowness on Windermere, 71-116.