Vindolanda Research.
The excavations of 2007-2012 in the *vicus*
or extramural settlement (‘Area B’)

Justin Blake
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The remaining foundation stones of building CXXIX, looking south. An example of the type of damage caused by post-Roman agriculture is visible in the stone-lined field drain which cuts through the centre of the Roman structure. The cobbled surface of roadway A3 can also be seen in the background.

The small well just east of building CXXIX, looking east. Its shallow nature and construction using thin, interlocking sandstone slabs can be seen.

Two views of well CXL, both looking west. The four stone slabs that had formed a well-head can be seen on the left, while the view on the right shows the well after their removal.

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Section through stone-lined well CXLI.

Well CXLI, looking south. The nineteenth-century field drain cutting through its eastern edge can also be seen towards the left.

Unlined well CXLII, looking south. Well CXLI can also be seen in the background.

Structure CXVI, showing some of the collapsed walling lying on its clay floor. The dark stain under the ranging pole is the cut of a later pit.

Building CXXXIX, looking northeast. The wall of the building can be seen on the right, with part of its collapse visible immediately right of the ranging poles. The hearth is just visible in the bottom left corner of the excavated area.

The western part of the vicus, showing the main roads, marked in grey, and the buildings mentioned in the text above, labelled in red.

Aerial view of the Romano-Celtic temple, CXXXI, looking west. The temple can be seen in the top right corner, as well as features such as water tank CXXX, in the centre of the picture.

Plan of water tank CXXX. The black line represents the fault line in the natural dolerite bedrock from which fresh water escaped to the surface. This had been used as a fresh water source in the Roman period.

The stone aqueduct channel, looking west. The row of substantial sandstone blocks to its south and the earlier Antonine foundations (right of photograph) had prevented it from subsiding into the backfilled Hadrianic ditch beneath.

Plan showing the location of sites XI, XXXIV, XLII, XXI and XXIII in the northwest part of the vicus.

Looking north along the Antonine annexe wall. Two of the large foundation stones of building CXXXIV can be seen immediately to the left of the annexe wall as well as the diagonal cut of the post-Roman robber trench behind it.

Plan showing the distribution of coins recovered from fourth-century contexts in both intra and extramural areas at Vindolanda. After Birley, A., 2010, 139.

Plan showing the zoning within the third-century vicus at Vindolanda, with each building shaded according to its identified use. The various clusters or ‘zones’ of buildings with a similar use can clearly be seen. It is also apparent that each ‘zone’ broadly respects the vicus road network.

Plan of Severan Vindolanda showing the substantial defences surrounding the north, west and south sides of the fort and the series of roundhouses outside its eastern edge. The locations of excavations which have examined its defences are outlined in red.

Looking south along the line of the southwest corner of the Severan ditch. It can be seen cutting the earlier Antonine annexe gate and rampart just above the ranging poles.

Section drawing through the southwest corner of the main Severan ditch, looking northwest. Its position is labelled ‘section 1’ on figure 42 above. The re-cut section (context V09B-49) can be seen on the ditch’s western side.

Two views of the outer Severan ditch. Left, looking northeast, shows how the ditch cut had through the earlier remains of the Antonine annexe wall and
rampart. Right shows the shallow ‘U’ shaped profile of the ditch and the various episodes of natural silt deposition in its re-cut.

46 Section drawing through the outer Severan ditch, looking east. Its position is marked ‘section 2’ on figure 42 above. Similar to the main Severan ditch, it had been re-cut (context V09B-64 and the dark grey clay above it).

47 Plan of Vindolanda in the later second century, showing stone-built features identified in the intra and extramural areas. The position of the annexe defences are marked in black where they have been proven and are dashed where their position has been postulated. The areas excavated between 2008 and 2011 are marked in red.

48 The annexe wall, looking south. The chamfered stones used in its foundations can be seen in the foreground as well as the plough damage on the tops of the stones.

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51 Aerial view looking southeast, showing the annexe wall (running from bottom-left to top-right of shot), as well as the clay rampart and cobbled road surface behind it. The interruption to the wall caused by the robber trench can also be seen (centre).

52 The Antonine annexe wall (centre) and ditch (left), looking north. The 14 degree change in angle of the wall can be seen as the wall meets the gateway.

53 Detailed plan of the Antonine annexe wall, rampart, gate and ditch in relation to the later Severan ditch (greyed out) and third-century vicus buildings.

54 The Antonine annexe gateway, looking west. The door pivot holes can be seen at the top of the internal passageway as well as the cobbled road surface and drain running through its centre. The line of the outer lip of the Severan ditch can also be seen cutting the gateway just below the ranging pole.

55 The Antonine annexe gateway, looking east. The resurfaced road along with street-side drain is visible as well as the cut of the Severan ditch (top of shot).

56 Plan showing the details of the Antonine features west of the annexe gate in relation to the subsequent third-century waggon park/storage yard and roads (greyed).

57 The cobbled flooring (front centre) of context V08B-56, looking northwest. The flagged repair/resurfacing, context V08B-51, can be seen as well as drain V08B-57 (top centre).

58 Two views of the large circular pit (V09B-38), both looking northeast. The view on the left shows the pit unexcavated and the view on the right emptied of its contents.

59 The flagged floor of context V08B-52, looking northeast, with drain (context V08B-54) in background.

60 Drain (V08B-54), looking southeast showing its unusual style of construction.

61 Two views of pit V08B-65. Left, shows the pit unexcavated, looking north. Right, shows it fully excavated, looking west.

62 The oak sill beam, viewed from above and facing east. The mortise holes on its upper surface can be seen, along with the burnt material (context V10B-37) above the clay floor.

63 The hearth, looking southwest, showing its flagged foundation and clay sides. Scale equals 200mm.

64 The Antonine workshop floor, looking southwest. The oak sill beam and wattle fence are visible towards the top right of shot and the hearth is shown in the centre. The pit containing the two inscribed mirror frames is shown left of shot, beneath the ranging poles, with its eastern edge visible as a slightly lighter shade of clay.

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69 The Hadrianic ditch during excavation in 2012, looking northwest. The natural ground clay into which the ditch had been cut is visible top centre. Also visible are the later vicus road, B6, (right of shot) and the later aqueduct (top).

70 Section through the outer Hadrianic ditch, looking north. The third-century aqueduct running above the ditch is marked in grey with its Antonine foundations shaded fawn.

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72 Table showing the sizes of forts on Hadrian’s Wall and their garrison, with information drawn from Taylor, 2000 and Breeze, 2006.

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80 Plan showing the 2nd phase of the pre-Hadrianic timber building in the vicinity of the later, third-century vicus structure CXXIX (marked in grey) and the nineteenth/twentieth-century field drains (marked in magenta).

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82 The post-holes adjacent to context V07B-49, looking north. The ranging poles portray the alignment of the building and the white tags mark the position of its posts. The ditch (top left) was an earlier feature and the drain running down the centre of the shot was a nineteenth/twentieth-century field drain.

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86 Detailed plan of the drainage channels and ditches between vicus site XI and the third-century aqueduct channel. The blue circles represent natural freshwater springs. The greyed out remains represent the Period IV roundhouse and associated structures which immediately pre-dated the drainage ditches.

87 Location plan of the various drainage ditches/water channels beneath the western part of the third-century vicus. The ditches are labelled with their context numbers at approximately the position with which they correspond.

88 The confluence of the two drainage ditches south of vicus site CXXXVI, looking south. Part of the later ditch (V07B-56) can also be seen towards the top right of the photo, beyond the modern drain pipe.

89 Two of the ditches immediately east of third-century vicus structure CXXVI (top right), looking south. Ditch V07B-86 can be seen in the foreground with ditch V07B-20 behind it.
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Location plan showing the two roundhouses and their associated structures in relation to the third-century *vicus* buildings (marked in black).

The roundhouse and associated rectangular structure excavated in 2012/13, looking west. The northern wall of third-century *vicus* site XI can also be seen, left of shot.

Phased plan of the archaeological features in the immediate vicinity of the southern roundhouse, excavated in 2010. As can be seen, the area had seen considerable building during the Roman occupation, followed by further damage by post-Roman land management.

Close up view of the wattle construction of the east side of the roundhouse found beneath third-century *vicus* site CXXIX in 2010. The photo has been taken looking east and the scale is 200mm with 100mm divisions.

Looking east across the floor/work surface V10B-45. The eastern wall of the roundhouse can be seen in the immediate foreground, the later ditch (V10B-31) can be seen cutting the floor (puddle near top of shot) and the pit, V10B-54, which was full of leather off-cuts, can be seen top of shot and in detail on the inset. The scale in the main shot is 1m and 200mm on the inset.

Plan of the spatial relationship between the roundhouses and the Period III and IV forts at Vindolanda. Period III (*c.*AD100-105) is marked in blue with Period IV (*c.*AD105-120) in red. Where the western boundary of the Period IV fort remains unproven, it has been marked in faded ink. The position of the later, third-century, Stone Fort 2 is also marked (outlined in black) as a reference point to remains currently consolidated on site for public display.

Post A6 showing the chamfered base and two holes in its south facing side.

Post A7 with its oak cross-brace, looking southeast. The individual pieces of the cross beam had all been cut from a single oak tree.

The post pit containing posts B26-29, looking north. The position of the four structural timbers is visible within the darker soil-stain of the post-pit. The two smaller post-holes in the foreground were part of a later structure.

Posts B25 (left) and B23 (right), looking west. The cut of the post-pit is visible along with the dark grey stain of the puddled clay placed around each post. It can clearly be seen that B23 was a substantially larger post and had been positioned deeper into the ground than B25.

Two plans of the timber posts identified by excavation up to the end of 2007. The plan on the left shows the position of the posts and the outline of their post-pits (where they could be identified). The right hand plan is identical, but also shows the individual post numbers.

Posts C22 and C23, looking west. The river-washed stones used to pack the posts can also be seen. The ceramic pipe cutting through the post-pit is a nineteenth/twentieth-century field drain.

Posts E1-E8, looking west. Posts E8 and E7 are in the foreground, beneath the later, third-century *vicus* structure CXXVI. E6 and E are in the middle of the shot and E1-4 in the background. The oval shape of the post-pit housing E5 and E6 can clearly be seen.

Three views of damage to the archaeological remains in the west of the site by agricultural drains. The main photo shows how a stone-built drain had truncated *vicus* site CXXIX. Top right shows how well CXLI had been cut by a field drain and the trench subsequently expanded to rob stones from its side. Bottom right shows a typical arrangement of how the small, 300mm long, ceramic pipes had been joined to run into larger field drains.

Plan showing the system of nineteenth/twentieth-century field drains (marked in purple) beneath the western part of the third-century *vicus*. The areas excavated between 2003 and 2012 are outlined in red.

Main photo shows the beam slot and pit where altar 13796 was found, looking west (scale = 20mm divisions). Inset shows the front of the altar itself.
Abstract

This research report presents the results of excavations at Vindolanda between 2007 and 2012 in what has been termed ‘Area B’. Area B covered the western part of the third-century extramural settlement, or vicus, as well as several underlying features of earlier date.

When added to existing evidence concerning the vicus from previous archaeological investigation, it was found that the third-century extramural settlement was more extensive than previously thought. It appeared to have been laid out with a formalised road network, with major arterial routes being interconnected by small side streets. Within this infrastructure, buildings with a similar use appeared to have been clustered together into various zones. These factors were suggestive of an overarching planning system, possibly via military authority. The vicus seemed to have been built contemporary with, or immediately after, the construction of Stone Fort 2 by Cohors IV Gallorum in circa AD213, before being abandoned towards the end of the third century in line with other extramural settlements on Hadrian’s Wall.

Below the third-century vicus, evidence was found for the western ditch system of the Severan encampment, as well as the defences of a substantial annexe on the western side of Stone Fort 1 in the second half of the second century. More fragmentary evidence was also located for the western ditch of the Period V fort (Hadrianic), the northern defences of the Period IV fort (circa AD105-120) and some of its internal structures.

Several second-century water management channels were located, as well as two roundhouses, which indicated pre-Hadrianic extramural settlement. Further evidence was also found for a group of early second-century timber buildings, first identified in 2005, which had used massive oak posts in their construction.

Vindolanda Phasing Summary

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<td>possible occupation by unknown unit</td>
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<tr>
<td>Period VIII</td>
<td>c.AD300-AD360s</td>
<td>Coh IIII Gallorum</td>
</tr>
<tr>
<td>Period IX</td>
<td>c.AD370-c.AD400</td>
<td>Unknown</td>
</tr>
<tr>
<td>Period X</td>
<td>c.AD400 onwards</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
The excavations at Vindolanda have been funded for over 40 years by the financial contributions of the site’s visiting public and it is only proper that the largest thanks is given to them for their continued support, without which none of the research between 2007 and 2012 would have been possible.

The daily excavation of Area B between 2007 and 2012 was undertaken by members of the ‘Friends of Vindolanda’ who assisted in the archaeological fieldwork and initial finds processing. The amount of new information about Roman life at Vindolanda encompassed by this report is testament to their hard work. Within the body of volunteers, I would like to pay particular thanks to David Ingham, who acted as a site supervisor to the volunteers in Area B between 2007 and 2012.

I am grateful to my work colleagues, in particular Dr. Robin Birley, Dr. Andrew Birley and Professor Anthony Birley who freely offered their thoughts, suggestions and comments regarding archaeological matters and for their time and effort in the editorial stages of report writing.

The Vindolanda Trust’s Director of Research, and for the majority of the years 2007-2012, the author’s Director of Excavations, Dr. Robin Birley, has been a constant source of inspiration, guidance and support. His frequent consultations concerning site interpretation and the extensive amount of work he has done on the post-excavation analysis of material culture and the ceramic assemblage have made this report far superior to what it would otherwise have been.

As to be expected with an excavation programme of this scale, it was necessary to conserve, curate and archive a substantial volume of material culture. This was done with skill and thoroughness by the Vindolanda laboratory and curatorial staff, Patricia Birley and Barbara Birley. That it has been possible to publish this report within eighteen months of the completion of excavation is in no small part due to their expertise.

A number of specialists have submitted articles for inclusion in this research report concerning their specific areas of expertise and I am very grateful for their contributions. They include Dr. Deb Bennett, Professor Anthony Birley, Barbara Birley, Patricia Birley, Richard Brickstock, Dr. Elizabeth Greene, Dr. Jacqui Huntley, Kate Sheehan-Finn and Dr. Ian Tyers.

I am grateful to the regional Inspector of Ancient Monuments, Kate Wilson, for her advice and support throughout the period of Scheduled Monument Consent, as well as on site comments from English Heritage archaeologists Dr. Pete Wilson and Mike Collins.

The work of Alan Biggins and Timescape Surveys provided a sound survey control framework and extremely valuable geophysical surveys into which the excavated material could be recorded and compared.

Finally, two long standing Trustees at Vindolanda, The Rt. Hon. Viscount Ridley and Dr. Brian Dobson, both of whom actively encouraged my archaeological career and showed me great friendship, sadly passed away in 2013. This report is dedicated to their memory.
Introduction

Past work in the *vicus*

Excavation in the third-century *vicus*, or extramural settlement, at Vindolanda has taken place at various times and to variable extents since the early twentieth century. The area has also been mentioned in the accounts of a succession of antiquarians and historians. Combined, they have provided a valuable resource of early research, which has been drawn together on several occasions in the past concerning overall research at Vindolanda (Birley E., 1931, 182-194; Birley R., 1977a, 24-30 and 2009, 17-32; Bidwell, 1985, 1; and Birley A., 2010, 62-69). The evidence concerning the *vicus* alone, however, has been updated here and is set out below for completeness of record. For convenience, this has been done in chronological order.

1702 – Dr. Christopher Hunter, a Durham physician, wrote an account of the state of the third-century military bath-house:

“Some years ago, [i.e. some years before 1702] on the west side of this place, about fifty yards from the walls thereof, there was discovered under a heap of rubbish a square room, strongly vaulted above, and paved with large squared stones set in lime, and under this a lower room, whose roof was supported by rows of square pillars of about half a yard high: the upper room had two niches, like (and perhaps in the nature of) chimneys on each side of every corner or square, which made in all the number 16: the pavement of this room, also its roof, were tinged black with smock. The stones used in vaulting the upper room have been marked as our joiners do the deals for chambers; those I saw were numbered thus – x, xi, xiii” (Hunter, 1702).

1715/1716 – In his *Vallum Romanorum*, published in 1753, John Warburton wrote an account of a brief excavation he had carried out at the site in 1715 or 1716 where he had the good fortune to find a fine altar and a number of leather shoes. As Robin Birley noted (2009, 18), the altar was likely to have come from the third-century bath-house, as Warburton had told Roger Gale, his friend, that it had stood in a vault, and smelled strongly of smoke. The provenance of the shoes is unclear, but they indicate that Warburton’s men had been excavating deeply enough to encounter anaerobic preservation conditions. Usually at Vindolanda this is a minimum of 1m below the turf.

1769 – John Wallis, a native of Whitley Castle in the upper reaches of the South Tyne valley, gave an account of the activities of others in the *vicus* at Vindolanda in his *History of Northumberland*. By the time he wrote, sufficient scrub had grown up on the fort site to give it the name ‘the Bowers.’ Three parts of his account were relevant to the *vicus* in particular and are reproduced here in full:

“Many stags horns have been digged up; some of an unusual size; one, presented to me, measures round at the base nine inches; striated lengthways, and studded with small irregular tubercles. The festival of the Roman hunters, sacred to Diana, was 13th August when stags were sacrificed. A temple, perhaps built in honour of her, was discovered by some masons in digging for stones, some years ago, adorned with doric pilasters and capitals, which perished under the strokes of their tools, being unacquainted with the value of such a curiosity. It was at the west end of the station” (Wallis, 1769, 24).

Two temples, or temple-tombs, were discovered at the western limits of the site in 2005 (Birley and Blake, 2007, 79-100). Nothing was found then that associated them with Diana as Wallis speculated, but a substantial amount of statuary and sculpted stone was found, which does correlate with his account. In addition, several nineteenth-century robber trenches were noted, some of which cut through the remains of the temples themselves (Birley and Blake, 2007, 99).

Another passage in Wallis’ history pertinent to the *vicus* is his description of a likely Roman cemetery discovered by Hugh Ridley, tenant of the croft called Archy’s Flat, in a field immediately north of his property. Wallis described it thus:
“Urns, of various sizes, with ashes in them, were found in digging by the above-mentioned Hugh Ridley, on the north side of his house; both of fine and coarse pottery, incautiously broken by his spade; one of them as small as a pint-mug.”

Archy’s Flat lies only 200m northwest of the religious precinct found in 2005, meaning that Wallis described a strong candidate for a Roman cemetery in a spatial sense, as well as through the material culture unearthed by Ridley.

Wallis went on to mention an altar to Mars:

“In the south-west end of the Well-House, belonging to William Smith, built about twelve years ago, at the west end of the station, by the suburbs, is an altar inscribed,

MARTI VICTORI
COH III NERVIORVM
PRAEFECT I CANINIVS

It is thirty-four inches long, and twelve inches and an half broad, the under part hammered off by the incurious masons; the inscription within a neat molding or raised border, much injured by the weather, though cut upon that durable stone, the fine white rag, found plentifully on the neighbouring moors.”

(RIB I 1691, where Collingwood’s drawing made in 1927 shows that Wallis’ reading could not be confirmed. Perhaps the cohort was really II Nerviorum.)

Again, Well-House, the croft to which Wallis referred, lay within 70m of the temples found in 2005. The fact that he used the term ‘by the suburbs’ in his description of the altar’s location suggests some knowledge at the time that there were Roman remains outside the western side of the fort itself.

1790s – Although we have no historical account covering activity in the vicus in the latter part of the 18th century, the archaeological evidence for stone robbing and agricultural disturbance from then until the early twentieth century is extensive (Birley and Blake, 2005, 1-2 and 41-43; Birley and Blake, 2007, 96-100). The amount of subterranean disturbance in the form of ploughing and drainage in particular has had a significant impact on our subsequent understanding of the Roman remains.

As Robin Birley noted (1995, vi), the Enclosure Acts of the 1790s ‘transformed the landscape’, with a significant increase in the population around the site bringing with it an inevitable demand for stone. The plethora of stone-built field boundaries surrounding the site are ready evidence of the sheer volume of Roman dressed masonry that was displaced from the

Figure 1. Vindolanda in the early nineteenth century, showing its neighbouring crofts and field boundaries. Adapted from Birley, R., 1995, 53.
site from then onwards. However, it should also be noted that in comparison to other forts, Vindolanda suffered less in this regard.

The occupants of the two crofts likely to have damaged Vindolanda’s *vicus* the most were those of Wellmeadow Close and Smiths Chesters, the positions of which are shown on figure 1 above. The various tenants of Wellmeadow Close in particular appear to have been heavily engaged in trying to scratch a living from what must have been extremely thin and poor soil for farming at the western edge of the *vicus*. Indeed, the volume of evidence they left behind from their efforts to improve the land by using ‘night soil’ as fertiliser were noted by the author on land covering the temple precinct at the west of the site (Blake and Birley, 2007, 98). It was even possible then to establish their favour for clay tobacco pipes made by Pringle of Carlisle and G. Hamilton of Hexham.

The majority of land overlying the *vicus*, however, fell under the stewardship of the various tenants of Smiths Chesters croft and, later, Codley Gate farm (labelled Caudley Gate on figure 1). It is to them that much of the damage and stone robbing must be attributed, an understandable action given the difficult times. However, just one indication of the scale of such damage may be seen in a quotation given by Anthony Hedley that the historian John Hodgson repeated in his account of Vindolanda: “for time immemorial (horresco referens) it [Vindolanda] had been the common quarry of the farm and partly of the neighbourhood for almost every purpose for which stone is wanted” (1840, 196).

1814–1835 – Anthony Hedley, an Anglican clergyman, purchased ‘Little Chesters’ croft and land, as Vindolanda was known by then, in 1814. A keen antiquarian, he showed significant interest in preserving the monument from any further ravages by stone-robbers right up to his death in 1835, aged 57. While his work in the *vicus* was limited in comparison to his activities inside the fort, in particular the praetorium along with sections of fort wall and gates, his role in ensuring that the remains in the *vicus* were left relatively undisturbed was highly significant and should not be overlooked.

Although his personal notes and papers were lost after his death, Hedley did leave records of his investigations into remains in the *vicus* in the form of letters to his friend, John Hodgson. After personal inspection, Hodgson himself also reports on this work in part II of volume III of his *History of Northumberland* (1840, 195-202). For example, Hodgson recorded that “the station was plentifully supplied with water, by a channel cut in large stones from a copious spring, about a furlong to the west. Mr. Hedley, in 1832, found several roods of this gutter stone lying quite perfect, and near the surface.” He then further illuminated the position of the *vicus* in relation to the fort, noting that “The town or out-buildings here have been chiefly to the west and south-west of the fort” (1840, 195).

Hodgson also made reference to two potential cemetery sites in the *vicus*, one to the southwest of the fort and a second on land north of the line of the modern Stanegate road, describing them thus:

“In a swampy part of a close to the south-west of the field in which the station stands, an old inhabitant of the place, in 1810, told me that urns had been often found – sometimes four or more together, covered with a square flat tile, and having a strong oak stake driven into the earth close by them. A little to the south of this sepulchral ground, a dry green hill was pointed out to me as the Chapel-heads. Sepulchral stones have also been found in the fields on the north side of the Causeway; and, near the Well-house, clinker-built shoes, and much Roman earthenware” (1840, 197).

The cemetery in land off the southwest of the fort remains unidentified, but the site near Well-house could be associated with either the religious precinct containing structures CXXIV and CXXV found in 2005 (Birley and Blake, 2007, 79-90), or the Romano-Celtic temple discovered in 2001 (Blake, 2003, 3-13). Both of these sites showed evidence of previous investigation and are within 100m of the croft to which Hodgson referred.

1914 – John Clayton, of the Chesters estate near Chollerford, acquired Vindolanda from Hedley’s family in 1863. Another fine antiquarian, he was responsible for the demolition of Smiths Chesters (Birley R., 2009, 25), which, in one sense, undoubtedly preserved the *vicus* at Vindolanda from further damage. However, he was also responsible for an effort to improve the farmland by inserting new field drains. Several of these were identified and recorded during excavation of the western part of the *vicus* between 2005 and 2006 (Birley and Blake,
2007, 96). While damage to the Roman remains from their insertion was relatively slight in overall terms, it was remarkable how often they had truncated important Roman structures and features, for example temple-tomb II, or building CXXIV (Birley and Blake, 2007, 87).

It was during such drainage work in 1914 that the Clayton estate’s foreman, Thomas Hepple, discovered a dried-up Roman well, site XII, see figure 2. The well itself turned out to be devoid of any interesting finds and the fact was noted on a stone slab recording the event. However, an altar to Vulcan (R.I.B. 1700), found close by, provided possibly one of the most important and remarkable pieces of evidence from the vicus. The inscription on its front, taken from R.I.B. I, reads:

```
Pro domu
diuina et Nu
minibus Aug
ustorum Volc
ano sacrum uicani Vindol
andesses curam
agente [...] o [...] u(otum) s(oluerunt) l(ibentes) [m(erito)]
```

“For the Divine House and the Deities of the Emperors the villagers of Vindolanda (set up) this sacred offering to Volcanus, willingly and deservedly fulfilling their vow, under the charge of....”

As Robin Birley noted (2009, 26), it revealed that the actual Roman name for the site was Vindolanda, rather than Vindolana. It also highlighted that the civilians at Vindolanda were recognised as a collective group, termed vicus, and evidently had some form of self-government. The fact that it had been dedicated to Vulcan, god of metal-workers, ties in with several metal-working workshops, CXX, CXXI, CXXII and CXXIII situated within 25m of the area in which the altar was found (Birley and Blake, 2005, 43-61).

1930 – The next work to be carried out in the vicus was under the direction of Eric Birley, between late May and early June in 1930 (Birley E., 1931, 202). The work focused on site XI and an area immediately north of it, around the aqueduct already exposed by Hedley. Indeed, Eric Birley noted that, “parts of this water-channel were still visible in May, 1930, when excavation began, and attention was soon turned to it.” However, as well as the aqueduct channel, “further trial holes” were made in which an underlying ditch containing pre-Hadrianic pottery was unearthed. At first glance, the excavation seems to have been small in scale, but a close inspection, backed up by re-excavation in 2012 (see page 101) reveals that one of these early ditches was traced for “some 60 feet” and that at least one of the trial holes reached “over four feet below the present surface.”

1931 – Work in the vicus began the previous year was extended by Eric Birley, although it was only undertaken by two men and was hampered by bad weather. Nevertheless, more of the pre-Hadrianic ditch system was examined, with a second ditch apparently joining the original from the southwest. This new ditch was traced for “more than fifty feet” and the presence of the tips of timber building posts and slots for timber sleeper beams were reported (Birley E, 1932, 216-221). It was also the first time that photographs recording work in the vicus were published in addition to measured plans. The pottery found during the excavation was published in Archaeologia Aeliana (1938).

1959 – The next major work to take place in the vicus was in 1959, when Robin Birley investigated an area immediately outside the southwest angle of the third-century fort. Excavations uncovered a large causeway crossing a flat-bottomed ditch, with an associated road approaching from the east. An industrial workshop, site II, and a rectangular structure containing a small apse, site III, were also identified. Site III was unfortunately too badly damaged to establish its function. For the location of these buildings, see figure 6. They were reported in Archaeologia Aeliana (1962, 97-103).

1967-1968 – Further work in the vicus continued under Robin Birley’s direction in the summers of 1967 and 1968. Reported in Archaeologia Aeliana (1970, 97-155), the work covered several areas within the vicus. A section of the main road leading from the third-century fort’s west gate was exposed along with three smaller side streets. A stone-built aqueduct was found to have led from the main water tanks (site XIII) in the west of the vicus, towards site IX further east. Site IX, interpreted then as a mansio but later revised to have been the commanding officer’s residence during the Severan period (Birley R., 1994, 143), was also examined. Extensive work was also undertaken to examine one of the main water supplies for the third-century vicus buildings.
through the water-tanks at site XIII.

1970-1976 – A major programme of works to investigate the vicus under the directorship of Robin Birley took place between 1970 and 1976. The results were published initially in an interim report in 1977 (Birley R., 1977b) as well as in a series of statements in Britannia, before being fully published by Thames and Hudson in 1977 (Birley R., 1977a). The work started out with the third-century bath-house, site XX, west of the fort wall, before examining the structures on both sides of the main road leading from the west gate of the third-century stone fort. Also included in the work were the vicus structures outside the western lip of the fort’s western ditch and tombs CXV and CXVII. Finally, numerous buildings were investigated between 1974 and 1976 in the area between the east wall of the third-century bath-house and the western wall of the fort.

It should be noted that during this programme of works it had become clear that the Roman remains at Vindolanda were far more extensive, with a much wider date range than previously anticipated. Also, the ink-on-wood writing tablets were first discovered during this period and there was a necessary shift in emphasis of research from the later Roman levels to the pre-Hadrianic remains.

2000 – After a hiatus of nearly a quarter of a century, work resumed in the vicus in 2000 when a row of four structures of indeterminate use were discovered outside the fort’s south gate. These were reported in Blake, 2001, 18-19.

2001 – A Romano-Celtic temple, CXXXI, was excavated in 2001 and there was also a minor examination of the area around the western edges of well XII and the water tanks at site XIII. A short investigation was also carried out to link the third-century bath-house, XX, and buildings XXIII and XXV to the south. The results of these excavations were published in Blake, 2003. Significant work also took place just southwest of the third-century fort’s west gate, with a re-examination of sites XXXIVA, XXXIVB, XXXIVC, under the supervision of Andrew Birley. This was reported in Birley A., 2003, 66-74.

2002 – More work in the vicus took place in 2002, when a 3m wide investigative trench was cut from the western edge of site IXB to the field boundary at the then western edge of the Vindolanda Trust’s property. The main aim of this excavation was to try to locate the western defences of the earlier pre-Hadrianic forts, but the results yielded valuable information about the extents of the vicus. A workshop, CXX, was found at the limit of the Trust’s property and it became clear that further vicus remains were likely to lie beyond the boundary to the west. The results of this evaluation trench were published in Blake, 2003, 26-58.

In addition, 2002 saw an investigation of a large courtyard building, LXXVII, and a partial examination of a structure attached to its western side (Birley A., 2003, 71-74).

2003-2004 – Work continued in the vicus between 2003 and 2004 with a large area examined south of sites IXA and IXB. This included a number of what appeared to be residential courtyard buildings, including CXI, CXII, CXIII, and CXIV, and a re-examination of possible tombs CXV, CXVI and CXVII (Birley and Blake, 2005, 2-19).

A separate programme of work, supervised by the author, expanded on the initial discovery in 2002 of workshop CXX at the far west of the vicus. It was discovered that this was only one of a total of four similar workshops, CXX, CXXI, CXXII and CXXIII, which had flanked a major street leading northwest from the vicus towards the Stanegate (Birley and Blake, 2005, 43-61).

2005-2006 – After the Vindolanda Trust had secured ownership of two acres of land west of the original property boundary in 2004, it became possible to investigate features at the far western edge of the vicus and a two-year programme of works was started under the supervision of the author. Excavation identified a religious precinct containing two temples or temple-tombs, CXXIV and CXXV, separated from the secular workshops just to the north by a boundary or temenos wall. The work also suggested that the temple precinct had formed the western limit of the third-century vicus (Birley and Blake, 2007, 72-96).
Work undertaken outside the fort between 2003 and 2006 had uncovered several important third-century vicus features, such as the religious precinct and workshops CXX, CXXI, CXXII and CXXIII, (figure 2). It had added significantly to previous work in the vicus since the 1930s (Birley, E., 1931, 1932; Birley, Richmond, Stanfield, 1936; Birley, R., 1962, 1970, 1973, 1977a and 1977b; Birley, A., 2001; Blake, 2003; Birley and Blake, 2005; Birley and Blake, 2007). Yet the main aim of research had previously been targeted to answer different questions, such as trying to establish the exact position of the western defences of the Trajanic and Hadrianic forts. The extent and importance of the newly uncovered vicus remains had made it clearer than ever that, even after more than seventy years of previous research, there were significant gaps in our understanding of elements of the third-century vicus associated with Coh IV Gallorum, the garrison of the third-century fort.

Consequently, it became necessary to devise a more effective research question, specifically focused on the third-century extramural vicus remains. It had also become clear that a move was needed away from isolated, small-scale areas of excavation to a larger, systematic open-plan policy. The Vindolanda Trust therefore reviewed and revised its research strategy in 2008, moving towards an ambitious and comprehensive research plan which would combine intramural and extramural excavation simultaneously and cover substantial areas of the site.

**Aims of the 2007-2012 research strategy**

![Figure 2. Plan of Vindolanda showing a colour-coded chronology of excavation in the vicus.](image)
The specific aim of this new strategy and its associated Scheduled Monument Consent was to answer a simple, but previously ignored, research question: ‘was the fort wall the great divide between the intramural and extramural populations at Vindolanda from the early third century?’ It was hoped that it would be possible to identify a complex series of inter-relationships between different constituent parts of the site using modern archaeological methods and techniques which may not have been available to previous researchers.

It was anticipated that the large volume of data gathered from previous excavations could be contextualised by excavation between 2007 and 2012 linking the discrete elements of the vicus together to form a coherent whole. The work would then provide a comprehensive and robust dataset of extramural evidence in terms of material culture, structural evidence and sequencing to compare with the balancing dataset created by simultaneous excavation of the intramural fort area (Birley A., 2013b and Birley, A., forthcoming).

The following report represents the first step in publishing the initial results of the excavations in the extramural or vicus area between 2007 and 2012. It offers a detailed description of the archaeological remains within the confines of the extramural settlement, and provides the foundation for a more thorough analysis of the spread of material culture and comparison of the social use of space. This will appear in a separate paper once all the relevant archaeological material from both intramural and extramural areas has been published. It will form part of the discussion in the report on the intramural excavations of the northwest quadrant of the third-century fort (Birley, A., forthcoming).

Figure 3. Plan showing the areas in the vicus excavated between 2007 and 2012, highlighted in red. The remaining unexcavated areas of the vicus are highlighted in green. As can be seen, the greater part of the unexcavated area lies in the field north of the modern Stanegate road.
This report mainly concerns evidence for the extramural settlement lying on the south side of the modern Stanegate road, uncovered between 2007 and 2012. However, to contextualise this within the overall extramural settlement, it also offers brief comment on the third-century extramural structures found during the same time period in the field to the north of the modern Stanegate (figure 3). A separate report specifically dealing with these is being produced by those directly responsible for supervising that excavation (Greene and Meyer, forthcoming). In addition, a detailed account of the re-excavation of vicus buildings XXVII, XXVIII and XXIX will be covered in a report by Dr. Andrew Birley (forthcoming).

Like all modern research on Hadrian’s Wall, past research agendas at Vindolanda have both informed and aided the development of several key themes encompassed in the Hadrian’s Wall research framework (Symonds and Mason, 2009b). On its publication in 2009, this framework highlighted several outstanding omissions in current knowledge of the vicus associated with forts on the northern limes (Symonds and Mason, 2009b, 15). It is worth noting here the points in the Vindolanda Trust’s research agenda between 2007 and 2012 which converged with, and subsequently advanced, the wider research framework for Hadrian’s Wall.

Firstly, it was hoped to secure a tighter chronological sequence in terms of when exactly the third-century vicus was founded in relation to the fort, how it evolved and also when it was finally abandoned. Second, research aimed to further strengthen knowledge in terms of the range of structures found outside fort walls along the northern limes, along with identifying their potential occupants or users. Third, an examination was to be made into whether there was any identifiable zoning within the vicus. This examination would try to identify clusters of buildings with similar usage and scrutinise how such structures were linked together in terms of infrastructure.

Work at Vindolanda has helped to establish answers to several of these research questions. A chronological sequence has been identified, along with a date for the eventual abandonment of the extramural settlement. A significant range of buildings has been highlighted outside the third-century fort’s walls and, in several cases, it has been possible to ascribe a function to them and identify their likely users. Because of these successes, it has been possible to identify zoning within the extramural settlement at Vindolanda and also to show how such zones were adopted into the wider infrastructure of the vicus. The conclusions drawn from Vindolanda’s research strategy between 2007 and 2012, reported below, have direct implications for similar sites on the northern frontier and are likely to inform the agenda of the next Hadrian’s Wall research strategy.

The following report has been split into different sections dealing with specific aspects of the research programme. The first section draws together the results of three separate geophysical surveys covering the extramural area, before the second section examines the infrastructure of Vindolanda’s vicus, describing the network of roads which linked the various buildings together. An account is then offered of the various individual buildings identified by excavation between 2007 and 2012, beginning with those found in the southwest of the settlement, followed by those in the west, and ending with discoveries in the northwest. A brief overview is also given to structures found in the field north of the modern Stanegate. Finally, conclusions are drawn as to how this information has answered the research aims listed above, and how our understanding of Vindolanda’s extramural settlement fits in with the study of the nature and function of extramural settlements along the wider northern limes.
The Vindolanda Trust has so far commissioned three geophysical surveys, which have covered different parts of the *vicus*. In the early 1990s, a ground-penetrating radar survey was carried out by Northumbrian Surveys on a section of land measuring 100m by 30m to the east of the main water tanks, site XII. (Donnelly, 1995). In 2000, Timescape Surveys undertook a magnetometry survey covering the field north of the modern Stanegate road (Biggins and Robinson, 2000). This was then followed up in 2008 by a similar magnetometry survey by Timescape covering the remaining unexcavated areas in the *vicus*, as well as the inside of the third-century stone fort and its immediate surrounds (Biggins, 2008).

The results of the ground-penetrating radar survey were mixed. The survey highlighted the fact that there was a substantial depth of buried Roman remains, ranging between 2 and 5m in the area surveyed and accurately picked out the line of two large ditches. The first ran in a north-south direction immediately north of site XI. After excavation in 2012, when a re-examination was made of the original investigation into the area in the 1930s (Birley E., 1931 and 1932), it turned out to have been part of a network of water management channels, (figure 86).

The second ditch ran east-west, in a line which ran just north of site XI and just south of the Romano-Celtic temple, CXXXI. Excavation in 2012 proved this to have been the northern defensive ditch for the Period IV Trajanic fort (figure 73).

The survey also suggested that substantial timber remains were buried with a horizon of 2-3m beneath the modern turf level (Donnelly, 1995). All these results have since been proven to be correct by excavation, see below.

In contrast, features within a metre or so of the surface, including the third-century *vicus* remains, were harder to identify using ground-penetrating radar. This led the surveyor to report that “the proliferation of features makes interpretation of
“data difficult and time-consuming” and led him to note that “in the future prior to excavations one small area could be looked at [using GPR] in greater detail” (Donnelly, 1995). While the radar survey accurately predicted the depth and nature of some of deeply buried pre-Hadrianic remains in the area surveyed, it proved impossible to produce a plan of the stone-built third-century *vicus* remains.

A joint paper by the Vindolanda Trust and Timescape Surveys will appear in the future. This will cover in detail how the evidence excavated between 2007 and 2012 correlated with the geophysical results from the two major magnetometer surveys of 2000 and 2008. Meanwhile, a generalised synopsis of the major results is offered below.

The magnetometer survey in 2000, covering the field to the north of the modern Stanegate road, was more successful than ground-penetrating radar in terms of highlighting potential *vicus* structures. It picked up anomalies throughout the whole of the field, but the most significant in terms of potential stone-built remains appeared to be immediately north of the modern Stanegate road. A series of potential structures were identified, which appeared to represent a linear settlement pattern with buildings adjacent to, and fronting, the road (Biggins and Robinson, 2000, i). The survey also highlighted the fact that these structures were not well-defined, and it was suggested that this was likely to have been because of stone robbing.

Evaluative excavation, targeted on some of the stronger magnetic anomalies, proved the magnetometer survey to have been accurate. At least two large stone structures of likely third century date and definitely forming part of the *vicus* were identified between 2008 and 2012 (Greene, forthcoming). As the survey had suggested, both of these had indeed been heavily damaged by post-Roman activity, mainly stone robbing and agricultural drainage. This meant it was difficult to establish a tight date or conclusive function for them.

The magnetometer survey in 2000 has highlighted the fact that that the *vicus* at Vindolanda seems likely to have extended significantly further north than previously thought. The greater extent and complexity of *vicus* than had been previously recognised is a trend which has become apparent through magnetometer surveys for several other forts on the northern *limes*, a point noted by Hodgson (2009, 5) and Sommer (2006, 96-97) and amply demonstrated in an individual example at Maryport. An extensive geophysical survey has greatly increased understanding about the extent and complexity of the *vicus* there (Biggins and Taylor, 2004, 102-133).

One of the main objectives of the second magnetometer survey at Vindolanda, commissioned in 2008, was to assist in devising the quinquennial excavation strategy. It was anticipated that excavation could be better targeted if the western extent of the *vicus* were already established, as well as the location and likely state of preservation of its structures (Biggins, 2008, i).

In terms of these objectives, the survey was successful. It was established that, on the south side of the Stanegate road, the western limits of the stone-built third-century *vicus* probably lay with the religious precinct identified in 2005 which contained temple-tombs CXXIV and CXXV (Birley and Blake, 2007, 79-91). Numerous other magnetic anomalies were noted as lying beyond this precinct, but as they did not exhibit negative responses, they were interpreted as likely to have been timber-built and possibly earlier in date than the *vicus* (Biggins, 2008, 19).

Several clusters of both positive and negative anomalies, indicative of potential foundation trenches for timber buildings and stone-built structures, appeared in the survey results throughout the *vicus* area. However, as Biggins noted from the outset (2008, i and plate 1, p.4), interpreting these into a meaningful plan was extremely problematic, given the complexity of the site’s archaeology and the amount of post-Roman interference. It was possible to highlight areas almost certain to contain substantial Roman *vicus* remains, such as southeast of the water tanks of site XII, west of mausolea CXV and CXVI and between sites XI and XXI. However, interpreting these responses into coherent street and building plans was fraught with difficulties.

The material excavated between 2007 and 2012 broadly supported the results of the magnetometer survey. The best preserved of the stone-built *vicus* remains excavated lay west of CXV and between XI and XXI, as the survey had suggested. Strong positive anomalies, interpreted from the survey as probable ditches, indeed proved to be such in most
of the places suggested: for example, the robber trench which was found to have cut through the Antonine annexe wall just west of the third-century bath-house was very clear on the magnetometer plan. Similarly, the numerous narrow positive anomalies which ran north-south throughout the central part of the vicus corresponded exactly with the nineteenth and twentieth-century field drains found during excavation.

The relationship between the magnetic responses and the excavated results was far less clear for the numerous heavily metalled road surfaces in the vicus. These did not show with any clarity at all on the survey and yet were some of the more solidly preserved elements of the vicus found during excavation. Similarly, many of the second-century features, such as the network of small ditches southwest of site IX, did not show at all on the magnetometer plot, yet were also some of the better preserved elements to be found during excavation. One possible explanation in this instance is that they were buried towards the upper end of the 2m depth given by Clark (1990, 78-79) as the limit of reliability before there is a rapid drop in sensitivity for a fluxgate gradiometer.

In general terms, the excavated results in the vicus broadly match the magnetic responses. There were, however, notable differences in the details of the correlation, such as the lack of clarity of the road network, which are worthy of deeper investigation and study in the future.

Figure 5. An overlay of the excavated areas of the vicus, including the north field, on an amalgamated plan of the 2000 and 2008 Timescape magnetometer data.
Figure 6. A plan of Vindolanda in the third century. The numbers of individual buildings referred to frequently in the text of the report are highlighted. The numbering system for the third-century vicus buildings evolved from excavations in the late 1950s. As new structures were discovered they were given successive numbers.
Before an account of the third-century remains in the *vicus* is given, it should be noted that, in several areas, the Roman remains had been significantly damaged by post-Roman agricultural activities. Extensive ploughing had taken place over many years and field drains of varying styles and sizes had been cut into the Roman soil horizons below the thin spread of wind-blown loam which covered the area. In some cases the damage was relatively light, with only superficial damage to the earlier remains. Elsewhere, however, the damage was severe and very little of the Roman material was left undisturbed. The amount, and quality, of information that it was possible to gather during excavation were significantly impaired by the amount of post-Roman agricultural damage.

**The communication network**

Targeted initially by aerial photography (Birley, R., 1977a, 34), early excavations of the *vicus* at Vindolanda had suggested that extramural settlement was spread along the sides of a major roadway with three side streets (Birley R., 1970, 100). The main road branched southeast from the main Stanegate *circa* some 332m west of the fort before leading into its west gate (*porta principalis sinistra*), as shown in figure 7.

This pattern, Sommer noted, initially placed Vindolanda in line with several other Stanegate forts with a similar ‘tangent type’ *vicus*, where settlement was situated around a branch road from a main arterial route (Sommer, 2006, 103). He highlights the frequent occurrence of this type of settlement when a main road had to bypass a fort because of the local topography (2006, 103). This was certainly the case at Vindolanda. The steep-sided valleys of the Doe Syke to the south, Brooky and Bradley burns to the north and the Chainley burn to the east meant the Stanegate road had to skirt around the north side of the fort and early excavations suggested that the *vicus* had grown up around the ensuing branch road linking the fort with the Stanegate.

As R. P. Wright pointed out in 1937, the course of the Roman Stanegate road is clear for some distance to the east and west of Vindolanda (1937, 185). However, its exact route as it passed immediately beyond the north walls of Vindolanda’s various forts

![Figure 7. Aerial photograph of Vindolanda in the late 1970s, looking south. The spread of extramural settlement adjacent to the main road from the fort’s west gate can be seen, as well as the line of the modern Stanegate road (bottom, running left to right).](image)
remains unproven. The positions of milestones both to the east and west, as well as early maps such as those produced by Horsley in 1832, MacLauchlan in 1858 and the Ordnance Survey in 1860, suggest it is likely to have followed the same course as its modern successor. Indeed, excavations directed by Wright in 1935/6 identified its course as far as the milestone just northeast of the fort. As he described it, “immediately west of the burn the Roman milestone is reached, embedded in the north edge of the road, which was verified at four points in this sector” (1937, 188).

However, at a point only 200m west of the milestone, recent excavation at Vindolanda has traced the course of the northwest corner of the stone-built Antonine fort to a point within 5m of the line of the modern course of the Stanegate (Birley, A., forthcoming). If this fort had defensive ditches protecting its northern wall, as seems likely, they would fall directly on the line of the modern Stanegate. The implication is that the course of the Stanegate during the working life of the Antonine fort, at least, must have lain on a path to the north of its modern successor.

A recent earthwork survey of the field to the north of the modern Stanegate was commissioned by The Vindolanda Trust in 2010. It highlighted two linear depressions, which perhaps represent routes for the Roman Stanegate at some stage in time (Corney and Morris 2010). These depressions are also clearly visible on recent aerial photographs of the same field (figure 9).

Figure 8. Earthwork survey of the field north of the modern Stanegate (adapted from Corney and Morris, 2010) showing two linear depressions, which perhaps represent routes of the road during the Roman period.
It is quite probable that, similarly to roadways connecting modern settlements, the position of the Stanegate may have altered to adapt to changes in circumstances throughout the Roman period, for example, as the fort at Vindolanda changed in size and position throughout its occupation. On the balance of the available evidence, the Stanegate seems likely to have followed the same course as its modern successor during the third century, yet probably followed a different course, possibly further to the north, at other times in the Roman period.

As Sommer correctly states, “the lay-out of a military vicus was rarely, however, completely clear-cut and straightforward” (2006, 104). Continuing excavations at Vindolanda, especially between 2007 and 2012, have indicated that the picture was more complex than a cluster of settlement around just one roadway. What has now become abundantly clear is that the vicus contained a number of interconnected roads, which, while not creating anything as formal as the centuriated grid patterning found in much larger territoria in other parts of the empire (Wacher, 1974, 41), nevertheless formed something more complex than either a simple ‘street-type’ or ‘tangent-type’ settlement as the site developed. This is noted by Sommer himself (2006, 107).

All the roads in the vicus identified between 2007 and 2012 had been constructed in broadly the same style. A shallow earth or clay embankment housed a base layer of cobbles, on top of which lay an upper dressing of finer cobbles. This type of construction was typical of many roads in Britain in the Roman period (Margary, 1955, 12-18).

The clay base had been laid to provide a secure foundation. It usually had a slight camber to allow drainage and was covered with a layer of river-washed cobble stones anywhere between 300mm and 650mm deep. As with any product formed by nature, these cobbles varied widely in their shape and dimensions, but were generally between 50mm and
250mm in diameter. This hard core base provided a solid foundation layer and was, for the most part, the best surviving part of each of the roads in the vicus still to be found in situ.

However, some of the roads, such as A3 and B6 (figure 10), showed additional, patchy evidence of a secondary ‘top dressing’, or ‘metalling’ in several places. Containing far smaller stones, cobbles and gravel than the foundation layer, the aggregate again appeared to have been gathered from river or stream beds, presumably locally (Michael McGuire, pers. comm., 2010). With an average size range of 15mm-100mm, these smaller stones formed a significantly more compacted top surface on which it would have been far easier for wheeled or pedestrian traffic to pass than on the more uneven foundation layer. It seems highly likely that each of the roads examined would have originally had this finer top dressing, but longevity of use, weathering and subsequent post-Roman agricultural activities had meant that it was more often than not only the underlying foundation layer which was preserved in the archaeological record.

‘A’ Roads

It is now clear that in the third century there were at least three major arterial routes, which had led to and from the west edge of the fort at Vindolanda. These were linked by smaller, but still substantial, roadways, which were in turn connected by small alleys and side streets. Figure 10 shows the location of these routes. They have been labelled according to size and importance, with ‘A’ roads being the main arterial routes, ‘B’ roads the secondary, connecting roads, and unlabelled roads representing smaller side streets and alleys.

In light of the new evidence uncovered between 2007 and 2012, a reassessment is due of the vicus’ communication network at Vindolanda. Far from just one main road, A1, branching from the main Stanegate to the west gate of the fort, there appear to have been at least two other major roadways. One of these, A2, ran east-west from the west gate of the original Antonine fort, first examined by Richmond in the 1930s (Birley, Richmond and Stanfield, 1936, 218-257). It might be possible here to see one aspect...
of how the *vicus* developed. It is tempting to suggest that road A2 was the original ‘main’ road leading from the western side of Vindolanda and that it fell out of favour when the fort’s west gate was moved 42m further north later in the Antonine period (Birley and Blake, 2007, 23). A comparison of coin deposition covering the two roads between the third and fourth centuries by Andrew Birley (2010, 131-140) suggests there may well have been an abandonment, or at least a vastly reduced use, of road A2 in favour of A1 by the fourth century.

It was clear during excavation that road A2 had been repaired or resurfaced at least twice before it fell out of favour. A coin, C1559, of Antoninus Pius (AD138-161) was found trapped in the cobbles of its original surface, context V09B-42, suggesting an Antonine foundation date for the road. A samian stamp of the potter Crassiacus, whose production dates were AD180-220 (Sheehan-Finn, page 147) was found trapped in context V09B-15, above the original cobbles, but below the flags of a subsequent repair. The continued heavy use of the road was evidenced by clusters of large sandstone flags which had been used to repair several worn-out parts of the original metalled surface. A coin of Gordian III, C1396, was found trapped beneath one such flagstone in context V09B-15, suggesting this episode of repair took place after AD238 at the earliest.

Finally, coin C877, an almost illegible radiate, but probably dating to AD260-273, was found trapped under road A2’s final surfacing in context V08B-14. If the road was still receiving maintenance by that late date, it is unlikely to have been abandoned altogether.

Based on the limited stratified evidence, it appears that road A2 was used from the Antonine period, but continued to be used in conjunction with A1 from the foundation of Stone Fort 2 in AD213. Roads A1 and A2 were both broadly functional through the early to later third century, with road A1 continuing to see heavier use for a more prolonged period as A2 fell out of use towards the end of the third century.

The other main arterial route, A3, ran northwest-southeast for 145m, linking A1 and A2 together. For most of its length, this was already a wide road at 4.2m, or just over 14 Roman feet, but it widened significantly at its southeast extremity where it joined with roads A2 and B2 and the potential waggon park or storage area. Sommer, (2006, 117-118) highlights the fact that in “a number of cases” on the continent the widening of a main road in *vici* such as this is usually interpreted as a market place. He goes on to highlight examples in Britain such as Birdoswald, Caernarfon and Caer Gai, which, based on geophysical surveys, show a similar widening of one of the main routes through their respective *vici* into a form of piazza.

Structurally, the widening of road A3 at Vindolanda fits into this model; however, as alluded to further below (page 41), an interpretation of a market place in this instance is tempered by the lack of buildings surrounding the road. There was also a relative absence of coinage and other material culture deposited there in comparison to other identified markets at Vindolanda (Birley, A., 2013b, 44). Only two coins were recovered from the road’s surface: C1775, a silver *denarius* of Vespasian (AD72-73); and C1816, a *denarius* of Marcus Aurelius (AD161-180). In this instance, the excavated evidence suggests that the road widened as it turned to the

Figure 11. Roadway A3 looking northwest towards sites CXX, CXXI, CXXII and CXXIII (top left) and water tank XIII (top centre).
south more as an intended part of its design than for a dual use as a market.

The six major contexts associated with road A3, V09B-4, V09B-8, V09B-11, V09B-61, V10B-6 and V10B-27 only had 28 small-finds associated with them, mainly small items of personal adornment such as brooches and beads. Again, if this widened part of the road had acted as a market place with a frequent concentration of people, a greater amount of material culture could have been expected than was recovered from an area of circa 432 square metres.

’B’ Roads

In addition to the three main arterial roads running through the *vicus*, a number of secondary roadways were also identified between 2007 and 2012 (figure 10). While perhaps not being as large and important as the ‘A’ roads, they nevertheless had a significant role in linking the various parts of the *vicus* together.

Road B1 ran southwards between the east side of workshop CXXVIII and the west side of building CXIV. It was only traced for 13.4m, but its course, if continued, would mean it linked with road B10 that ran southwest past site III (figure 10). The only two items of material culture found on its surface were a fragment of a legionary tile stamp, 10896, unhelpfully reading just LEG[..], and a white glass gaming counter, 10902.

There was also a branch road, B2, leading southwest from the point where roads A2 and A3 joined, immediately north of workshop CXXVII. This was relatively well preserved and also had a series of kerb stones laid end to end along both of its edges. These were undressed sandstone rubble blocks of varying sizes, but averaging 600mm long by 400mm wide and 400mm deep. A roadside drain measuring 300mm wide and 280mm deep was identified along a section of its northern edge. This had silted up naturally and nothing was found in its fill other than an accumulation of several thin bands of sand and silt, which in total measured 200mm deep. There was also sporadic evidence that the road had been repaired in certain places: in one place, six large sandstone flags had been laid to repair a 380mm deep rut in the road’s original surface. The road was 3m wide and was traced for only 15m to the southwest from its junction with A2 and A3, but is likely to have carried on for a significant distance in that direction.

Four coins were found on the surface of B2, but unfortunately none of these were trapped in, or beneath, the road’s fabric. Context V08B-33, towards the north of the road, contained an early third-century counterfeit *denarius*, C1226, and a silver *denarius* of Septimius Severus (AD193-211), C1256. Three iron wedges, 10958, 10959 and 10960 were also found together there, in a rut on the road’s surface. Found in aerobic conditions of homogeneous loam, there was no evidence that they had been in an organic bag or container of some sort, although it seems likely that they were lost together. Material on the road’s surface from the southwest end of the excavated section, context V09B-7, contained an illegible as, C1338, and a silver *denarius* of Julia Mamaea (AD222-235), C1340, as well as a jet bead, 12602; blue glass bead, 12600; and a sherd of samian ware fashioned into a gaming counter, 12198.
Early editions of the Ordnance Survey maps for the area from 1865 onwards name the small hillside around 500m southwest of Vindolanda as ‘Kingcarrn Hill’. The implication of this name for such a site, on top of a hillside overlooking the fort, is that there may once have been some form of ancient burial site there, perhaps during the Roman period. It is not impossible that road B2 led traffic there from the southwest part of the vicus.

In the far west of the vicus, excavations between 2003 and 2004 identified two separate roads, B3 and B4, running east-west on either side of a religious precinct containing two temples, or temple-tombs. The roads formed a junction at a point immediately south of building CXXIII before joining the main northwest-southeast road A3 (Birley and Blake, 2007, 77-90). With the Stanegate lying only a short distance to the north, it is unlikely that either of these represented major east-west routes and, although a geophysical survey of the area has not made their course clear (Biggins, 2008, 30), it seems likely that they would have eventually turned north to meet the main Stanegate.

A further road, B5, connected the main arterial routes A1 and A3 at a point roughly halfway between the west wall of the fort and their convergence with the main Stanegate. Measuring 7m wide and with a shallow drainage channel on its southeast side, it ran along the south side of building CXXXIX to form a crossroads with A1 and B6. A samian stamp of the potter Cintugenus, whose production dates were AD155-180 (Sheehan-Finn, page 147), was found trapped in the road’s surface in context V10B-58, suggesting it was laid sometime after that. Two coins were also found on its surface in the same context. One, C2071, was of Faustina II (AD147-175) and the other, C2091, was of Trajan (AD98-117). A copper-alloy hairpin or medical instrument, 14684; a fragment of a blue glass bangle, 14686; and a bone gaming counter, 14689, were also found on the road’s surface.

Of all the roads identified between 2007 and 2012, B6 was the best preserved. Measuring 7m wide, it had a solid clay foundation and a substantial cobbled base. Much of the finer metallising, or top dressing, was also still intact, although several filled-in potholes could be identified. Nothing was found trapped within its surface and a significant amount of post-Roman ploughing had taken place above it. This meant that it was impossible to associate with any certainty the large amount of material culture found in context V12B-5 directly above its surface.

The road was flanked by two drains. On its western edge a channel, 160mm wide and 350mm deep, had been formed using two rows of flat sandstones slabs, 100mm thick, laid on their edges to form sides. There was no evidence of capping stones and it is likely that it had remained open. The same drain was identified in the 1930s running along the northern edge of site XI and it has now been shown to have turned south along the open front of that building. The drain, context V12-34B, had filled up with silt and dislodged cobbles and contained three coins: C2276, a silver denarius of Septimius Severus (AD193-
C2277, a silver *denarius* of Antoninus Pius (AD140-143); and C2278, an illegible copper-alloy coin of second or third-century issue.

On the opposite side of road B6 a much wider drain, context V12-25B, had been formed by leaving a 620mm wide gap between the eastern edge of the road and the large sandstone foundation blocks of the *vicus* structures such as CXXXIV along its eastern edge. It had filled up with sands, silts and clay, probably washed from the road surface, while the constant seepage of water had also meant that a substantial crust of iron-pan had formed in its upper layers. The fill of the drain also contained a silver *denarius*, C2267, of Julia Maesa (AD218-222); a copper-alloy pin, 16671; and a copper-alloy lock stud, 16686.

A roadway, B7, branched off to the northwest from B6 to form a link with B8 (figure 10). This was heavily disturbed by post-Roman activity, including excavation during the 1930s (Birley, E., 1932, 217-221). Its width varied from 7.4m at its southeast end to 6.2m at its junction with B8. Two coins were found trapped in its fabric, C2283, an illegible as or *dupondius* and C2284, an illegible silver *denarius*. More useful was a third-century amphora stamp, 16743, of Oleastro (Sheehan-Finn, page 131). The road fabric, context V12-51B, also contained a fragment of a penannular brooch, 16741; a copper-alloy pin or probe, 17742; an *intaglio* of nicolo paste, 16744, and a ceramic gaming counter, 16747.

Roadway B8 lay within 100mm of the modern turf level in an area which had been extensively disturbed in the post-Roman period. Consequently, it was badly damaged, and no material culture or dating evidence was recovered from its surface, context V12-59B. However, enough of its surface had survived to establish that it ran in a northeast-southwest direction past the eastern edge of water tank CXXXIV. It was only excavated for 14.5m, but the strong likelihood is that it would have linked with the main Stanegate just 25m to the northeast and with roadway A1 just 10m to the southwest. A shallow, 230mm deep, ‘U’ shaped drain flanked the southeast side of road B8, context V12-60B. It had filled up naturally with sand, probably washed from the road surface immediately to its northwest.
The southwest part of the *vicus*

The remains of three industrial workshops, CXXVII, CXXVIII and CXLIII were found immediately south of one of the main roadways, A2, leading westwards from the fort, (figure 14). They had been heavily damaged by post-Roman ploughing, but fragments of flooring and walling had survived in places. This was enough to establish the main outline of the structures, if not all their internal walls, and to prove they had been used for industry.

**Metalworking workshop CXXVIII**

Workshop CXXVIII was found immediately to the east of workshop CXXVII at the junction of roads A2 and B1, (figure 14). It was roughly rectangular in outline and measured 9.6m east-west by 7.7m north-south. A 300mm wide gap separated buildings CXXVIII and CXXVII, but they had been built in the same style.

CXXVIII’s east and west sides had been built using clay-bonded walls of dressed rubble, with larger sandstone blocks making up the foundations of its north and south walls. The foundations of the north, south and east walls had been heavily damaged by later agricultural activity: there were deep, linear striations caused by ploughing across the tops of several of the surviving wall stones and substantial sections of each external wall were missing completely.

Traces survived of a possible internal timber partition wall running east-west through the centre of the building (figure 16). Evidence was found for three post holes measuring 120mm in diameter, with an additional two potential post-pads on the same alignment, constructed using soft yellow sandstone slabs.

The flooring in each of the two internal rooms was slightly different. The floor in room 1, context V08B-7, had been made using a spread of orange clay measuring 90mm thick. A silver *denarius* of Geta, C834, was found in the packing clay supporting the floor of workshop CXXVIII,
giving it a terminus post quem of AD200. In addition, small find 10906, a samian stamp of the potter Macrianus (production dates AD155-190; see Sheehan-Finn, page 150) was found in the same context. The only other material culture found on the floor was a graffito on a samian sherd, 10907, and a stone lid, 10908.

A circular pit, context V08B-11, had been cut into the clay floor of room 1 midway along its western wall. It measured 630mm in diameter and contained a fill of loam and small stones, which had been deposited before the top of the pit was overlain by the soot.

In room 2, a spread of clay, context V08B-3, had also been used as flooring, but was much thicker at 190mm, and fawn in colour. It contained relatively little material culture, although four ceramic gaming counters 10897, 10899, 10900 and 10903 were found scattered across its area.

Another circular pit, context V08B-10, had been cut into the clay in a similar position to the pit in room 1. This measured 860mm in diameter. It was 180mm deep and had a fill of mid-grey clay and small, river-washed stones.

On top of the clay base of the floors in rooms 1 and 2, a homogeneous layer of burnt material (mainly soot, coal dust and charcoal) had built up to a depth of 70mm. It contained numerous fragments of unburned fuel and industrial waste, reflective of the building’s use as a workshop.

Although the flooring in both rooms had been heavily damaged by later agriculture, as evidenced by the deep striations on the wall stones immediately adjacent, there was the faint trace of a potential hearth against the centre of the eastern wall in room 2. A thin spread of bright orange/pink clay formed a roughly circular area covering approximately 1 square metre. Little else can be said about this, given its extremely fragmentary remains, but its position, the heavily burnt flooring material surrounding it.

Figure 15. Detailed plan of workshop CXXVIII showing its location at the junction of roads A2 and B1 and the position of its internal features.

Figure 16. The timber partition wall separating rooms 1 and 2 in CXXVIII, looking east.
and its similarity to the hearth in workshop CXXVII suggest it was most likely to have also been used for industry.

Building CXXVIII, although less well preserved, was similar in nature to workshop CXXVII. Given their close proximity and the fact that they contained almost identical features, including hearths, substantial amounts of identical fuel and industrial wastes, it is highly likely to have also been used as an industrial workshop. Unfortunately, insufficient evidence was preserved to establish exactly which industrial processes were being carried out there, but it is likely to have been used for similar processes to CXXVII immediately adjacent.

**Metalworking workshop CXXVII**

Workshop CXXVII measured 12.26m east-west by 8.87m north-south. Rectangular in shape, with its long axis running east-west, it also had an apse of 3.65m internal diameter built into its west end. The exact purpose of the apse was not immediately apparent, but it could be more than coincidental that it contained the workshop’s major hearth.

The north, south and east walls of the building had been constructed using large sandstone blocks averaging 1.40m x 0.38m x 0.52m. It is quite possible that these had formed a foundation on top of which timber sill beams may have been set. These could have housed either boarded or wattle and daub walls in a style noted on buildings of a similar date elsewhere at Vindolanda (Birley, R., 1977a, 42).

The west wall, incorporating the apse, had been constructed in a different way, at least in its final phase. It had been built using coursed rubble-bonded with clay, a style which was typical of early third-century buildings in the *vicus*. The wall stones were somewhat mixed, utilising mainly hard grey sandstones, but also containing a number of softer yellow sandstones. The use of such soft yellow sandstone blocks may indicate the reuse of stone from an earlier, probably Antonine, period: the tendency for builders using such stones at Vindolanda in structures of Antonine date has been noted several times (Birley, Richmond and Stanfield 1936, 231-2; Birley and Blake, 2007, 22; Birley, R., 2009, 123). A maximum of three courses of the apse had survived, although more commonly only a single course was left intact. The different style of solid stone walling in comparison to the timber sill beams in the rest of the building may represent a major repair at some stage, or more likely, given that the apse housed a substantial industrial hearth, is that it presented less of a fire hazard.

There was evidence for the remains of two possible internal walls in the form of large sandstone foundation blocks which projected internally from the building’s north wall. These blocks extended for
2.17m towards the centre of the structure, but there was evidence that the remainder had been robbed. From such limited remains it was impossible to establish whether they once completely divided the building into three parts, or if they merely formed three small alcoves along its northern wall. Either way, their presence indicated an effort to create some sort of segregation of space within the workshop.

The building’s floor had been set on orange clay and cobbles, contexts V08B-4 and V08B-18. This cumulative foundation layer contained coin C819, an illegible second-century dupondius, as well as a bead, 10901; copper-alloy stud, 10909; lead pin, 10912; and a whetstone, 10927.

The main part of the floor had been flagged with grey sandstone slabs which averaged 550mm by 840mm, context V08B-26. They had provided a solid surface on top of which lay context V08B-17, a spread of grey clay, 80mm thick. A copper-alloy brooch, 10923; a flint flake, 10925; copper-alloy fitting, 10926; and a samian stamp, 10942, were found in this clay.

The clay had, in turn, been covered with an accumulation of heavily burnt industrial debris, contexts V08B-5 and V08B-15, including soot, hammer scale, unburned fuel and numerous chunks of clinker and slag. This layer varied in thickness, from 190mm adjacent to the hearth inside the apse, to a relatively thin 70mm at the building’s east end. It contained the bulk of the material culture found in the building, with context V08B-5 containing a fragment of lead, 10904; the head of a jet hairpin, 10905; an iron hook, 10910; a possible glass hook, 10913; and a blue glass bead, 10978. Coin C876, a radiate minted between AD260-268, was also recovered from the uppermost levels of the floor, which is evidence of activity in the building towards the end of the period in which the vicus was occupied. Context V08B-15, which made up the bulk of the material covering the floor flags in the western part of the building, contained a fragment of copper alloy scale armour, 10914; half of a penannular brooch, 10915; three fragments of lead, 10918, 10919 and 10928; a possible silver pin, 10920; two strips of copper-alloy, 10922 and 10935; and a fine lead brooch pattern, 10917, for details of which see below.

It was notable that of all the flooring sampled for hammer scale, the greatest concentration (c.80% of each 1 litre sample taken) came from context V08B-15 in the western part of the building, immediately around the large hearth in the apse. The hammer scale gradually reduced in density towards the east of the structure, where the density was less than 10% of each sample. Several kilograms of industrial waste were also recovered from the floor, apparently spread at random. This included clinker and general iron slags, but excluded bog ore and tap slag, suggesting that smelting was not taking...
place in the building. There was also a substantial volume of charcoal, coal dust and fragments of unburned coal spread on the floor.

A substantial hearth had been situated on top of the flagged floor in the centre of the apse, context V08B-55. It was badly preserved, but could be identified by a rough, oval spread of heavily fired pink clay covering an area of c.1 square metre. The clay varied in thickness between 80mm around its edge and 30mm in the centre. Surrounding the hearth was a 190mm thick spread of soot and coal dust, which perhaps gives an indication of the fuel used to heat it. This layer also contained a heavy concentration of hammer scale.

Although badly damaged by later agricultural activities, the surviving evidence points to the building’s use as an industrial workshop. From the amount of hammer scale on the floor around the hearth inside its apse, it is certain that smithing had taken place. However, the damage to the building was extensive enough that it was impossible to establish if that was the main industrial process taking place there. It would appear from the unused fuel found on the floor, particularly close to the hearth, that coal had been used as a major source of firing. This contrasts to the hearth which had been used to fuel the roasting hearths in the workshops examined in 2003 only 69m to the north (Huntley J., 2007, 208). However, it was very similar to the coal used in another smithing hearth in the praetorium of the earlier Period III fort at Vindolanda (Birley, R., 1994, 83) and also as a source of fuel in the contemporary third-century praetorium (Birley, R., Birley, A. and Blake, 1999, 16).

Evidence of one item that was potentially manufactured in the building came in the form of a lead pattern for a brooch, 10917 (figure 21). This was found trapped in context V08B-15, the sooty industrial debris on top of the workshop’s floor, close to the large hearth. The artefact was almost certainly a pattern for a clay piece mould. The soft nature of the lead meant it would have been easily sculpted into the desired brooch form before being wrapped in clay, usually in two halves to produce a piece mould. Commonly, the lead pattern was removed at this stage so that more moulds could be made in the future (Bayley and Butcher, 2004, 27). The clay mould could then be used to produce several further brooches, probably in copper alloy, which was the most common material used for brooches in Roman Britain (Bayley and Butcher, 2004, 26).

The fact that brooches made in this manner are likely to have been cast (Mackreth, 2011, 4-5) is interesting when the significant amount of hammer scale also found on the floor is taken into consideration. It shows that there was a multiplicity of industrial processes taking place in the workshop. Smithing and the manufacture of copper alloy brooches may have been the only two identifiable industrial processes, but it is perhaps likely that others were also taking place.
Metalworking workshop CXLIII

Evidence for a potential third workshop, CXLIII, was found in a limited area immediately southwest of CXXVII (figure 22). Only a small area of its floor was examined during excavation and limited structural evidence in the form of two potential wall foundations could be identified. However, a large hearth was discovered and the floor surrounding it was identical in nature to the flooring in workshops CXVII and CXVIII. This similarity to the other two industrial workshops in terms of flooring and features suggests it had the same function.

The potential wall foundations were similar in style, being made from relatively thin (50mm) slabs of grey sandstone. These had been laid to create linear strips measuring 600mm wide; with a roughly level upper surface. One of these ran in a northwest-southeast direction, with the other perpendicular to it. There was no evidence for dressed rubble blocks above them, post holes cutting through them, or any sort of beam slot in the soil above them. However, it is difficult to explain them in any other way than as some form of foundation surface for a superimposed wall.

The original floor of the building, context V08B-29, contained five coins as well as several other items of material culture. The coins found were C947, a silver denarius of Titus (AD79); C949, an illegible fragment of a possible second-century copper-alloy issue; C969, fragmentary, but probably Antoninus Pius (AD138-161); C970, probably a second-century fragment; and C971, illegible and fragmentary, but likely to have been a second-century issue. The items of material culture found were 10946, a copper-alloy collar with wooden centre; 10947, a lead weight; 10952 a flint flake; 10954, an illegible mortarium stamp; 10955, a samian stamp; 10956, a green glass annular bead; 10957, a samian stamp of the potter Masclus of La Graufesenque (see Sheehan-Finn, page 151); 10962, a bone gaming counter; 10963, 10969 and 10977, all fragments of lead; 10970, a copper-alloy bow brooch; 10971, a copper-alloy penannular brooch; 10989, a samian stamp; and 10990, an iron ferrule.

The hearth, context V08B-53, was roughly oval in shape and measured 920mm wide by 1.4m deep. Its base consisted of a series of flat sandstone slabs, which had been laid to form a semicircle. Its interior was made from packed fawn clay which was covered in an accumulation of successive layers of soot and charcoal, 130mm thick. There was evidence for part of the hearth’s fabric lying on top of the base which had either collapsed there or been deliberately demolished. It had been made from clay which was 120mm thick and had been pinkened by heat from the hearth. Two items of material culture were found in its fabric, an iron knife, 12105, and a fragment of an iron spear socket, 12106.

Immediately in front of the hearth lay a shallow rectangular pit, context V08B-40, measuring 1.4m wide by 800mm long and 360mm deep. This...
contained an accumulation of 12 successive layers of heavily burnt material, each approximately 30mm deep. There was no hammer scale in any of the layers but they did contain fragments of industrial waste such as slag and unburned fuel. The likelihood is that this was a rake or ash pit into which waste material from the hearth was dragged and deposited after successive firings. The pit also contained three fragments of lead, 10966, 12125 and 12126; as well as an illegible as, coin C1211.

The remaining part of the building's floor, context V08B-35, was made from a spread of fawn-coloured clay covering small sandstone flags. It contained three ceramic gaming counters, 10961, 10981 and 10982; a samian stamp of the potter Ioenalis (Sheehan-Finn, 149), 10985; a copper-alloy bell stud, 10986; a small copper-alloy plate, 10987; a square copper-alloy fitting, 10988; a copper-alloy fungiform stud, 10999; and a square of blue glass, 12133.

Over this base layer, a similar accumulation of soot, fuel and industrial waste (context V08B-38) to that found on the floors of workshops CXXVII and CXXVIII had built up to a depth of 70mm. The floor had then been repaired or resurfaced with another band of fawn clay (context V08B-37) at a later date. No dating evidence or material culture was recovered from either of these later deposits.

The three buildings, CXXVII, CXXVIII and CXLIII appear to have formed a small cluster of industrial workshops with a similar use for metalworking. The significant amount of hammer scale suggests that smithing is likely to have been the main industrial process taking place in them, but the lead brooch pattern, 10917, hints that they may have been used for additional manufacturing activities.

The workshops had been separated from the residential housing of structures CXXIII and CXIV to the east by roadway B1 and from the possible wagggon park to the northwest by road B2. In this regard they were very similar to the row of industrial workshops identified 60m to the north (Birley and Blake 2005, 43-61). These had formed a similar group of industrial workshops grouped together along the southern edge of road A3, but which had also been clearly separated from the religious precinct to the southwest by road B4. There appears to have been a deliberate attempt by whoever was responsible for planning the location and function of both of these groups of workshops to cluster them together, while using the existing road network to separate them from adjacent buildings with a different use.

From the datable evidence found in their stratified levels outlined above, workshops CXXVII, CXXVIII and CXLIII appear likely to have been built sometime in the early third century. Perhaps the most securely stratified datable artefact for the workshops' foundation was coin C834 of Geta, which was found trapped in the floor foundation of workshop CXVIII, giving it a terminus post quem of AD200.

The amount of post-Roman disturbance to the three workshops, coupled with a lack of datable material in their later contexts, means that establishing an accurate date for their eventual abandonment is difficult. The latest datable artefact was the radiate coin C876, found in the later floor surfacing of workshop CXVII. It shows that there was activity of some sort there in the later third century, but there was a complete lack of coinage after AD270, even from the disturbed soils overlying the buildings. Coupled with an absence of any of the classically later Roman ceramic material such as Huntcliff wares or Crambeck, this suggests the workshops were abandoned around the end of the third century, in keeping with the rest of the extramural settlement.

Building CXIV

Excavations in 2003-2004 examined a large courtyard building, CXIV, to the east of workshop CXXVIII (Birley and Blake, 2005, 14-17). It appears now that the majority of this structure was examined in 2004, but its western wall lay just beyond the excavated area. However, a north-south wall, built of the same large sandstone foundation blocks as the rest of the building, was found in 2008. Given its position and building style, this is almost certain to have been the western wall of CXIV. A total of six sandstone blocks were found, with average dimensions of 1m long by 0.65m wide and 0.65m deep. The northernmost of these was orientated east-west and is likely to have formed the northwest corner of CXIV.

Immediately outside its western edge was a drain, context V08B-9, which measured 650mm wide and 380mm deep. CXIV's western wall had formed its east side and its west side had been constructed using
a row of dressed rubble blocks laid adjacent to each other. There was no evidence for capping stones and, given the significant height difference between the tops of its sides, it is unlikely ever to have been capped. No material culture was found in it, but the drain had filled with a natural accumulation of gritty mid grey sands and silts, most of which are likely to have been washed from roadways A2 and B1 immediately to the north and west.

Cobbled yard or waggon park

A large area of cobblestones covering at least 305 square metres was situated immediately northwest of workshops CXXVII and CXXVIII. Lying within 200mm of the modern ground surface it had, unfortunately, been heavily damaged, with much of its uppermost surface (context V08B-48) re-deposited by ploughing.

There was no visible boundary marker on its north and west edges, where post-Roman agriculture had significantly damaged the stratigraphy, making evidence for the edge extremely indistinct. However, the well preserved roadways A3 and B2 (figure 10) had created a distinct boundary to the yard’s south and east edges. Indeed, roadway A3 widened significantly as it merged with the yard from the north, a feature noted by Sommer (2006, 117) as being an indicator of a market place in a number of continental vici.

The best surviving area, towards the yard’s eastern end, suggested that the original cobbled surface had been repaired, or possibly resurfaced entirely, at some stage. There was a clear distinction between a layer of relatively well packed small river cobbles, V08B-44, and a more fragmented resurfacing which had used cobble stones with a significantly wider range of sizes, context V08B-43. The later surface (V08B-43) was essentially unstratified, but contained C1254, a denarius of Vespasian (AD69-79); a fragment of lead, 10975; and half a blue glass bead, 12167.

The main area of the yard’s original cobbled surface (context V08B-48) was heavily plough-damaged, but two coins, C1136 of Septimius Severus and C1161 of Plautilla, were found trapped within its fabric. These suggest the cobbles were laid at some stage after the later second century. The subsequent resurfacings were impossible to date from the surviving evidence, but given that later structures built on top of them contained coins such as C1227, a radiate copy (AD260-273), in their floors, the resurfacing is likely to have taken place before the later third century.

The numerous small finds found on the original cobbled surface were wide-ranging in type and nature and there was no specific focus in their type that helped ascribe a use to the yard. They included five coins: C1107, a radiate, probably of Claudius II (AD268-70); C1136, probably of Septimius Severus (AD193-211); C1161, a denarius of Plautilla (AD202-05); C1161B, a radiate copy (AD260-73); and C1178, a denarius of Vespasian/Titus (AD69-81). Also found on the yard’s original surface were 10983, a copper-alloy finger ring; 10984, a copper-alloy brooch; 10992 and 10996, both ceramic gaming counters; 10995, a post-Roman horse shoe; 10997, an iron ‘T’ pin; 10998, a fragment of an inlaid glass bangle; 12101, 12115,
12116, 12121 and 12129, all fragments of lead; 12118, half a green glass bead; 12123, a lead plumb-bob; 12135, a stone counter or lid; 12135 a yellow bead; and 12168, a graffito on a basal sherd of samian ware.

Covering a minimum of 305 square metres, this cobbled area was a significant feature and a substantial amount of work must have gone into its building. The fact that it was resurfaced also suggests that it had some longevity of use. However, its function was not immediately obvious from the heavily plough-damaged remains. Such a yard or cobbled square could have functioned as a market place and Sommer makes a forceful argument for this based on geophysical surveys at other sites with similar features, such as Birdoswald, Caer Gai and Cefn Caer (Sommer, 2006, 117). His continental parallels are, however, surrounded by buildings, usually with a portico. The lack of buildings fronting onto this particular area, coupled with the fact that there was a distinct lack of low-value coinage found on its surface, is at odds with other market areas identified here (Birley 2013b, 44) and at other sites, such as Segedunum (Hodgson, 2009, 76). Perhaps this indicates that, in this case, the space is more likely to have functioned as a sort of waggon park or storage yard.

The logistics of supplying and maintaining a Roman fort and its associated extramural settlement would have been great and the number of carts, wagons and supplies arriving at the fort would have necessitated some form of designated storage space.

The surviving archaeological evidence for such a feature is likely to be slight and while obviously speculation, it is possible that a yard as large as this may have been used for such a purpose. The fact that it had stone structures built over the top of it by the later third century suggests it had gone out of use for whatever its original purpose had been by the later third century.

Figure 25. The cobbled yard under excavation, looking northwest. Some of the larger slabs and stones set on edge were features from later structures which had cut through the yard’s surface.
The western part of the *vicus*

The western part of the *vicus* excavated between 2007 and 2012 was perhaps the most heavily damaged by later agricultural activities, with most of the third-century stone-built structures there lying within 400mm of the modern turf level. This meant their remains had been heavily truncated by a network of field drains, see 119f, and especially by ploughing.

It was also an area which appears to have had relatively few *vicus* structures built there. Only three buildings CXXIX, CXXVI and CXXXIX were identified, along with a group of three wells, CXL, CXLI and CXLII. For the location of these structures in relation to the rest of the extramural settlement, see figure 6. The density of Roman activity there in the third century appears to have been significantly lower than areas examined to both the south and north. The location of a religious precinct just 25m to the west had already indicated that the area lay towards the periphery of the *vicus*’ western edge (Birley and Blake, 2007, 90) and there seems to have been a marked fall in settlement density away from the western edge of roadway A3.

### Building CXXIX

Building CXXIX was situated adjacent to the eastern edge of roadway A3 (figure 26). Unfortunately, it lay within 300mm of the modern turf in an area which had undergone considerable agricultural and drainage activity in the nineteenth and twentieth centuries. The damage to its remains from these activities was significant and only parts of the wall foundations and an area of packing for its floor had survived *in situ*. From these scant surviving remains it was impossible to accurately date the building, or ascribe a function to it: all that can be usefully offered here is that structure CXXIX was similar in size and style to several of the other *vicus* buildings in the same vicinity (figure 6).

Overall, the building measured 3.17m east-west by 4.38m north-south. The foundations for its walls

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*Figure 26. The remaining foundation stones of building CXXIX, looking south. An example of the type of damage caused by post-Roman agriculture is visible in the stone-lined field drain which cuts through the centre of the Roman structure. The cobbled surface of roadway A3 can also be seen in the background.*
had been constructed using large sandstone blocks, which, on average, measured 0.85m by 0.60m and 0.45m deep. 11 of these stones had survived in situ and it was notable during excavation that the soils around the area where the remainder would have been sited had been heavily disturbed. This is likely to have been caused by robbing, possibly by those responsible for cutting a large stone-lined drain through the centre of the building, although disturbance from late Roman activity cannot be ruled out.

It has been noted elsewhere (Birley, Birley and Blake, 1999, 21; and Birley, A., 2013a, 10) that the late Roman and sub-Roman occupants of the fort used the vicus buildings as an additional quarry to provide stone for modifications to various buildings inside the fort walls once the vicus had effectively been abandoned. Building CXXIX may have been one of those that was plundered as a source of stone.

Only two very small areas of the building’s floor were preserved in situ. A small area of mixed clay and loam (context V09B-10) was found intact above three small flagstones towards the building’s northern end. It contained half of a ceramic spindle whorl, 12191, and a fragment of a melon bead, 12192. Context V10B-11, in the building’s southwest corner, was identical in the nature of its material to context V09B-10 and is likely to represent the same flooring. However, it did not contain any material culture.

Two areas of very mixed soils (contexts V09B-2 and V09B-3) lay over, and immediately around, building CXXIX. They are also likely to have once formed part of the building’s floor, but it was obvious during excavation that they had been significantly disturbed by the modern field drain which bisected the building (figure 26) and by post-Roman ploughing. While essentially unstratified, the finds these contexts contained are listed here for completeness of record, but extreme caution must be applied to any attempt to associate them to the function or date of structure CXXIX. Context V09B-2 contained C1339, a coin of Elagabalus (AD218-222); 12172, half a blue glass bead; 12180, a flint flake; 12181, a copper-alloy lock stud; 12182 and 12610, both ceramic gaming counters; 12183, an iron ferrule; 12185, a fragment of a whetstone; 12186, a clear glass bead; and 12195, a corroded iron object. Context V09B-3 contained 12173, a tiny blue glass bead; and 12196, half a blue glass bead.

Situated only 2.8m to the east of CXXIX was a small stone-lined water tank, or well, which is likely to have been associated with the building (figure 27). The well had been constructed using thin sandstone slabs, which had been laid end-to-end in shallow courses to form a rough circle. It only measured 0.56m deep and had a diameter of 0.70m. However, given the high nature of the water table in this part of the site, that was a perfectly adequate depth from which to secure water for much of the year. Its base had been made using a shallow sandstone slab cut to size and its cavity had filled up with a mixture of yellow sand and grey silts (context V10B-34). No material culture or ceramic evidence was found in its fill.

Wells CXL, CXLI and CXLII

A group of three other wells, CXL, CXLI and CXLII, of a greater depth and constructed to a higher quality, had been cut into the natural ground clay some 46m to the west of building CXXIX.

Well CXL was circular with a diameter at its top of 1.56m, gradually tapering to 0.97m at the bottom. A total of 1.46m deep, it had been cut through 230mm of mixed loam, 470mm of natural orange clay and 470mm into the glacial blue-grey boulder clay. At some stage it had been given a well-head consisting of four large sandstone slabs, which had been laid on their edges to form a rectangle (figure 28). It is unclear when, but at some point the southern and western of these slabs had collapsed into the well, the southern slab being found slumped...
to a point 340mm from the bottom. That the slab had collapsed at a stage when 340mm of soil had already accumulated in the well’s base perhaps indicates that some time had passed before it fell, and the well-head may well have had a substantial working life span before slipping.

The deposition of silt in the bottom of the well (context V07B-87) appeared to have been a gradual, and probably natural, process. At least five successive deposits of grey sand/silt had accumulated to a depth of 430mm. Above these, the main part of the well’s fill (context V07B-65) consisted of a mixture of organic material and silty grey clay. The top 230mm consisted of mixed loam, most likely representing an accumulation of soil deposited some time after it had gone out of use.

Only two small finds were recovered from the well, both from the later deposits around 730mm beneath the surface (context V07B-65). The first was 10851, a small red glass bead and the second was three-quarters of the top part of a quern stone.

1.8m to the northeast, a second circular well, CXLI, was identified, which had been constructed in a slightly different way. Its main shaft was 1.32m deep and it measured 1.02m in diameter at its top, with a slightly tapering section drawing in to 630mm at its bottom. Most of the shaft was unlined, cutting directly through the natural ground clay. However, its top had been given a stone lining (figure 29). This was made from dressed rubble, of which there were four surviving courses. A significant amount of the eastern side of the lining had been completely removed by the diggers of a nineteenth-century field drain (figure 29).
The well’s fill could be separated into two main components. The bottom 140mm (context V07B-88) consisted of light grey sandy silt, which appeared to have been a natural accumulation of sediment. Above that lay a mixed covering of organic material and grey clay (context V07B-75), very similar to the fill in the middle part of well CXL, immediately to the southwest. A number of dressed rubble building stones were found in this central part of the fill, most likely having collapsed from the stone lining above. The top 210mm was an accumulation of mixed loam, probably a more modern accumulation of soil from a substantially later date.

Three small finds were recovered from context V07B-75: a blue glass bead, 10857, and a whetstone, 10858, were found in the central organic material; and a wooden bowl, W07B-2, was found sitting upright at the very bottom on top of context V07B-88. Unfortunately, the weight of the overlying soil had split the bowl into several fragments, but it appears to have had slightly sloping sides and a relatively flat bottom. Approximately 300mm in diameter, its appearance resembles that of a modern fruit bowl.

Only 550mm to the north lay a third possible well, CXLII. Substantially smaller than the other two, it was slightly oval in shape, with a diameter of 740mm. It had been cut into the ground clay to a depth of 940mm, with almost vertical sides. It appeared to have been unlined and there was no surviving evidence for any type of well-head. Its fill (context V07B-77) was almost entirely made up of silty grey clay, but the bottom 80mm consisted of yellow sand which contained some organic material, including numerous twigs. The fill did not contain any material culture.

These three small wells appear to have formed a single group, but ascribing a date for their use is problematic, given the lack of dating evidence. Such features could have quite easily served the second-century workshop which lay only metres to the north east (see 94f). However, their location in relation to adjacent *vicus* structures on the south side of roadway B3, and strong similarity to another stone-lined well identified on the opposite side of the same road in 2004 (Birley and Blake 2005, 47), mean they could equally well have been dug later, perhaps in the early third century. If so, they could have served either the stone-built industrial workshops just to the northeast, the religious precinct immediately to the west, or quite possibly both.

**Building CXXVI**

On the northern edge of roadway B4, a small, stone-built structure, CXXVI, was identified. Measuring 2.22m east-west by 2.18m north-south externally, it was too small to have been any type of residential building (figure 32). This was also perhaps indicated by the narrowness of its walls, which, at only 400mm wide, were unlikely to have been able to bear any significant load. A large part of the structure’s south
wall, as well as some of its floor had been cut away by a later pit (context V07B-16), and collapsed stone from the other three walls had also damaged parts of its floor. The surviving areas indicated that the floor (context V07B-4) had originally been made using a thin layer of grey clay, which contained a fragment of lead, 10770. Four small, shallow pits or post-holes had been dug into it at each corner of the building. Although very deliberately cut, these were only 90mm deep and contained nothing other than a small amount of soot and charcoal.

There was no conclusive evidence for the structure’s use. However, given its small size, square shape and close proximity to a known religious precinct (Birley and Blake, 2007, 79f), it seems most likely to have been some kind of small roadside shrine, or perhaps a funerary memorial. Its location near the edge of the extramural settlement, on a hillside overlooking the site and especially on the side of a major roadway, would also be typical for such a Roman feature (Toynbee, 1971, 73).

There was no definitive dating material associated with the structure but, given that it overlay a large timber building, the structural timbers of which were dated by dendrochronology to have been felled in AD97 (Birley and Blake, 2007, 53-56; and Tyres, see 225), it must have post-dated that. Its general alignment and structural style of dressed rubble blocks of hard grey sandstone also give no reason to believe it was not an original component part of the surrounding extramural settlement dated to the early third century.

**Building CXXXIX**

A small part of another stone-built structure in the extramural settlement, CXXXIX, was found 19m east of CXXVI on the opposite side of roadway A3, at the junction with road B5 (figure 10).

Only one wall of the building was excavated, most of which had been heavily damaged by ploughing, with only 5.4m surviving intact. Measuring 0.90m wide, it had been built of coursed rubble bonded with clay and ran northeast-southwest, with a maximum of two surviving courses. Several of the wall stones were found to have collapsed onto the clay floor and can be seen in figure 33.

On the northwest side of the wall there was evidence of a clay floor associated with it (context V10B-47). Measuring 180mm thick, this consisted of hard-
Vindolanda Research. The excavations of 2007-2012 in the vicus or extramural settlement (‘Area B’)

packed fawn clay. A reasonably large spread of domestic material culture was found on the clay, including several glass beads, 14646, 14648, 14650, 14651 and 14672, as well as half a ceramic spindle whorl, 14662. A samian stamp of the potter Cucalus of Lezoux, 14675, was found trapped just under the clay, giving it a *terminus post quem* of AD170, while coins C2047 of Antoninus Pius (AD138-161) and C2090 Hadrian (AD117-138) were also found on the floor itself.

There was also some evidence for part of a domestic hearth in the room, although only its very edge could be examined within the confines of the excavation trench. It consisted of a thick layer of heavily burnt pink clay (context V10B-60), which was surrounded by a spread of soot. Although the evidence was limited, the feature was similar in size and nature to other domestic hearths in the *vicus*.

The position of building CXXXIX on the northern edge of roadway B5 hints that there was a similar arrangement of structures there as on the opposite side of the street, where buildings CXX, CXXI, CXXII and CXXIII formed a street front containing four adjacent workshops (Birley and Blake, 2005, 49-61). If building CXXXIX was part of a similar arrangement on the northern edge of the road, this would represent a significant concentration of buildings. It would also mean that roadway A1 leading to the *porta principalis* was not the only major *vicus* road to have been flanked on both sides with a dense concentration of buildings.

**Figure 34. The western part of the vicus, showing the main roads marked in grey, and the buildings mentioned in the text above labelled in red.**
The northwest part of the *vicus*

Exploratory work in the northwest part of the *vicus* during 2001 yielded valuable results about its extent in that direction and the religious function of some of the buildings situated there (Blake, 2003). However, it was impossible then to place these structures into their wider context as part of the *vicus* as a whole. This has now been possible because of the significantly larger excavation in 2012, which also examined several new elements of the *vicus*.

**Romano-Celtic Temple CXXXI**

The 2001 excavation had identified a small temple in the Romano-Celtic style of two concentric rectangles at the far western edge of the *vicus* (Blake, 2003, 2f), but very little of its immediate surroundings were excavated then. A significantly larger area was uncovered in 2012 which examined features immediately outside its south and east sides.

The area immediately outside the temple’s south edge had been metalled with river-washed pebbles pressed into the natural orange ground clay (context V12-86B). This metalling extended for 1.5m to the south and had provided a path, or narrow roadway, around the temple’s front. When the metalling was removed after recording, a samian stamp of the potter Genetius was found trapped in the clay beneath (context V12-110B). With a production date range of AD155-190 (Sheehan-Finn, 149), this gave a *terminus post quem* for the pathway.

The material culture deposited on the pathway itself included two coins, C2323, an illegible *dupondius* and C2327, a silver *denarius* of Trajan. Also recovered from context V12-86B were two half melon beads 16846 and 16871; a decorative piece of copper alloy, possibly part of a brooch, 16851; a large fragment of lead, 16863; and a scabbard chape, 16865.

A small statue of Fortuna, 6772, likely to have been associated with the temple complex, was also found lying in an accumulation of loam immediately above the path around its south front. Unfortunately, the statue was damaged, with the head and part of the right arm guiding the rudder missing, but enough had survived to provide a positive identification (page 183).

While essentially unstratified, if it can be accepted that it had not moved far from its original

![Figure 35. Aerial view of the Romano-Celtic temple, CXXXI, looking west. The temple can be seen in the top right corner, as well as features such as water tank CXXX, in the centre of the picture.](image-url)
provenance, the statue may offer an insight into a deity potentially being worshipped in the vicinity. A weathered altar (Tomlin, Wright and Hassall, 2009, no 3343, p.330) was found in situ in front of the temple’s south wall and is thought to have been representative of the main god to have been worshipped there. Professor Anthony Birley has suggested it may have been dedicated to Hercules Magusanus (Birley, A. R., 2003, 59), although Dr. Roger Tomlin gives an alternative reading of the Veteres in R.I.B. However, as such temples were frequently clustered in religious precincts, (Lewis, 1965, 131) it is possible that the dedication to Fortuna had been deposited in the same precinct, but was perhaps not directly associated with the same temple.

Immediately to the east of the temple, more of the cobbled road, B9, leading northward towards the main Stanegate road, initially identified in 2003 (Blake, 2003, 9), was examined (figure 10). It was found to be a consistent width of 9.2m and was bordered on its eastern side by a small channel (context V12-98B) measuring 300mm deep. This channel had been cut into the natural ground clay and was reported in 2003 as a possible temenos boundary (Blake, 2003, 9). With the additional religious material deposited beyond it to the southeast and to the east, this now seems an unlikely interpretation and it is more likely to have been a roadside drainage ditch.

**Water tank CXXX**

A small rectangular water tank, CXXX (figure 36), was located on the hillside directly above the site of a powerful natural spring. Measuring 2.26m east-west by 1.70m north-south internally, the tank had been made from coursed rubble bonded with clay. Its foundations were better preserved than its main walls and had survived to three courses on each side. They had been constructed using soft yellow sandstone blocks averaging 360mm by 250mm in size, which had been deliberately set into the natural clay of the hillside. An upturned block from an aqueduct channel had been utilised as the central foundation stone in the lowest course of both the north and south walls, allowing water to flow into the tank from subsidiary springs located just outside its edges. The tank’s foundations projected wider than the main walls by 80mm.

The stones in the surviving sections of the main walls averaged 300mm by 250mm and were also made with relatively soft yellow sandstone. On the tank’s south, west and east sides the walling had only survived to a single course of masonry, but the north wall had two surviving courses. Only the inside face of the main wall was left in situ. However, given that the tank was built into the natural hill slope, it is possible that this was all that was there originally, with the wall being little more than a retaining wall.

During excavation in the summer of 2012, the flow of water from the spring just below the tank was measured at 1,400 litres per hour, which represents a substantial continuous flow of water. When water was pumped mechanically from the tank to allow the excavation of its fill, a natural fault could clearly be seen in the whinstone ridge that formed the base of the tank on its western side. The bedrock was part of a ridge that ran northwest-southeast and formed around a third of the tank’s base. Water appeared to well up naturally from several small fissures on the eastern side of this ridge, while smaller springs were also noted where there were further fissures immediately surrounding the tank on its north and south sides. It may well have been because of these additional springs that two...
upturned channel stones had been placed in the foundations of the water tank to allow the extra water to flow into the tank before being subsequently diverted into the main aqueduct channel to the east.

Even with the rapid through-flow of water, the tank had filled up with a significant amount of sediment. The vast majority of this was made up from various layers of grey sands and silts, which were impossible to separate during excavation because of the amount of water. There was also an almost total absence of material culture deposited within them, perhaps suggesting the tank had been deliberately kept clean, as one may expect of a clean water source. However, the deepest layer (context V12-67B) at the bottom of the eastern side of the tank did contain a sherd of mortarium rim, 16789, stamped Sullon. The potter Sullon(us, -ius, -iacus) is known to have been producing mortaria at nearby Corbridge between AD100 and AD140 (Sheehan-Finn, 135).

The water from the tank had clearly been syphoned into an aqueduct channel, first noted during excavation on the site in the nineteenth century. Hodgson (1840, 195) stated that “the station was plentifully supplied with water by a channel cut in large stones from a copious spring, about a furlong to the west. Mr. Hedley, in 1832, found several roods of this gutter stone lying quite perfect, and near the surface.” The channel stones and their immediate surrounds were further examined by Eric Birley in 1930 (Birley, E., 1931, 202) and 1931 (Birley, E., 1932, 217-219).

The aqueduct had been constructed using a series of substantial grey sandstone blocks which varied slightly in size, but averaged 500mm long by 450mm wide and 480mm deep. A rectangular groove had been cut into the central part of the upper face of each one to create a channel through which water could run. Each groove measured 200mm wide and averaged 200mm deep.

When placed adjacent to each other, these stones created a reasonable fit, although it is highly likely that some form of sealing agent was employed to bond them tightly to each other and minimise the leakage of water from the channel. Nothing had survived of this and there was no evidence of slots cut into the stones to house a lead clip or seal. It is perhaps most likely that they were bonded with puddled clay, several small patches of which were found in the soils immediately adjacent to the channel stones.

The aqueduct ran in a straight line eastwards from the centre of the tank, almost certainly to the main military bath-house some 72m to the east. In 2012, re-excavation of Eric Birley’s original section located 22 channel blocks still in situ, covering a length of 12.64m. The stones from the remaining section of the aqueduct had been robbed out.

For the majority of its length, the aqueduct ran above relatively solid ground, with undisturbed natural ground clay lying within 1m of its base. As the natural ground surface fell away downhill to the southeast from a point 16m east of the water tank, it was notable that it had been necessary to support the aqueduct on a foundation of mixed earth and stones. This is almost certainly the ‘forced earth’ that Birley described in his account of the aqueduct’s excavation in 1930 (Birley, E., 1931, 202).

Even more substantial foundations had been necessary at the point where the aqueduct crossed the site of the former Period V fort’s western ditch. The ditch had been backfilled at some point prior to the aqueduct’s construction, but the builders were certainly aware that the soil was substantially softer there than the firm clay on either side of the ditch and that subsidence was likely. Consequently, the channel blocks had been supported on a strip of...
fawn-coloured clay and rubble. This had been further bolstered by a row of large grey sandstone foundation blocks on its south side, and by the old Antonine foundation wall to its north (page 81f). The combination of these features had created a solid foundation platform on which the weight of the aqueduct could be carried across the former Hadrianic ditch.

**Building XXI**

Excavation in the 1970s had identified the positions of the eastern and northern walls of building XXI, but no further work was done then. The remainder of the structure was excavated to its foundation level in 2012.

The building measured 7.45m east-west by 15m north-south externally. Its gable end fronted onto the main street A1, the main road leading to and from the third-century fort’s west gate (figure 6). In which respect it was typical of neighbouring buildings XXII, XXV, XXVII, XXIX and V, situated along the northern edge of the roadway.

XXI’s construction style was also identical to these other buildings, with walls constructed using dressed rubble blocks of *circa* 300mm width, 250mm height and 200mm depth, bonded together with clay, or sometimes lime-based mortar. All four of the walls were a consistent width of 600mm. There were three surviving courses of masonry on its west wall, six on its north, four on its east and a single course on its south front, meaning that it had survived the ravages of post-Roman agricultural activities and stone robbers slightly better than several of the vicus buildings further west.

Even so, most of its flooring (context V11-3B) had been damaged, but enough had survived to show it had been made from a layer of compressed fawn-coloured clay, 200mm thick, which had been set on top of sandstone flags. Because of the amount of later activity, nothing could be identified in terms of internal features such as hearths or room divisions. Also, the material culture recovered from above its flooring was likely to have been disturbed from its original position of deposition.

Three coins were recovered from the floor: C2247, a late sestertius, of probable third-century date (c. AD 193-235); C2248, an issue of Constantine II (AD 320-325); and C2252, a denarius of Severus Alexander (AD 222-235). More useful for dating the

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**Figure 38. Plan showing the location of sites XI, XXXIV, XXI, XXI and XXIII in the northwest part of the vicus.**
foundation of building XXI were two coins found trapped under its floor in an earlier Antonine phase of activity. Coin C2251, a silver denarius of Marcus Aurelius (AD161-180), and C2253, a second-century sestertius, perhaps of Hadrian/Pius (AD117-161), gave a terminus post quem of the later second century for the construction of the building.

A total of 36 artefacts were recovered from the floor (context V11B-3) in addition to the three coins. These represent a mixture of military, religious and mainly domestic items, including several pieces of jewellery. They seem to represent causal loss, probably by the building’s residents, and perhaps over a lengthy period of time, given the wide date range in the coins found on the floor. The items recovered were: 16543 and 16546, joiner’s dogs; 16544, a ballista ball; 16547, a ‘T’ shaped lift key; 16551, a copper-alloy stud; 16554, 16584 and 16604, all stone lids; 16555, an iron scabbard chape; 16557, an ‘L’ shaped lift key; 16560 and 16582, both glass beads; 16562, part of a quern stone; 16564, a large iron key handle; 16565, a very corroded iron blade; 16567, a copper-alloy bracelet fragment; 16569, a ring from an iron chain; 16573, a copper-alloy stud; 16574, a very small copper-alloy bracelet; 16576, an iron brooch; 16577, a small copper-alloy statue of an eagle; 16587, a copper-alloy brooch; 16588 and 16597, both copper-alloy pins; 16590, a penannular brooch; 16594, the nose section of a face pot; 16600, a gaming counter; 16601, a graffito; 16602, part of an iron bracelet; 16603 and 16617, both iron brackets; 16612, a glass bead; 16613, an iron plate; 16615, a ‘T’ clamp; 16616, a lead weight with inscription II; and 16618, a tile stamp ‘L’.

The main roadside drain on the northern edge of roadway A1 lay immediately outside building XXI’s south front (contexts V11-2B and V11-7B). As well as acting as a drain for the road, it appeared to have led surplus water away from the small water tank XLI, which was within 5m of its southwest corner, along the north side of road A1 and into the fort’s western ditch. The drain measured 250mm wide and 280mm deep and had been built using dressed rubble blocks dug into a foundation trench so that the top of the drain was flush with the side of the roadway. It had originally been capped with grey sandstone flags, several of which were preserved in situ, although some were missing from the section of drain immediately in front of building XXI.

Unfortunately, in terms of the preservation of material culture, the drain was still in working order, with a continuous flow of surface water visible in wet weather. This inevitably had impacted on the amount of material trapped in the drain’s fill and only three items were found in it. These were a coin, C2244, of Gallienus (AD258-268); 16504, a copper-alloy terminal; and 16528, a stone lid. The drain fill itself was a mixture of sand, silt and some displaced stones.

Building CXXXIV

Structure CXXXIV was first identified in the 1970s, but was more comprehensively excavated in 2011 when its eastern half, as well as its north, east and south walls were examined. A significant section of its western half lay under a modern visitor footpath, however, and it was not possible to investigate that particular area. In addition, a large robber trench (context V11-11B) had cut through the building in a northeast-southwest direction, destroying all evidence of the building within its 6.40m width. Building CXXXIV’s floor lay within 200mm of the modern ground surface in a part of the site which showed considerable damage from post-Roman agriculture, highlighted by deep striations in much of the Roman masonry caused by ploughing. Because of the large extent of this later interference, little could be understood of the structure’s function or date. However, some important information could be deduced in terms of its structural form, spatial location in the wider area of the vicus and its structural sequence, relative to other features in the vicinity.

Overall, CXXXIV measured 6.40m east-west by 6.80m north-south, giving it an internal area of 43.52square metres. It had been positioned on the eastern edge of roadway B6 (figure 10). In terms of adjacent vicus buildings, it was relatively isolated, its closest neighbours being site XI on the opposite side of road B6, 10.7m to the west, and the military bathhouse, site XX, 15m to the east.

CXXXIV was constructed in a different manner from its neighbouring vicus buildings. It had been built using large grey sandstone blocks which averaged circa 800mm in length by 400mm wide and 400mm deep. These had provided a substantial foundation, possibly to accommodate timber sill beams in a similar style to other structures on the south and west of the vicus such as sites LXXX (Birley, R., 1977b, 41) and site CXXIX (42, above).
This style of construction was different to the buildings immediately adjacent to CXXXIV, such as sites XI and XXI, which had used the more typical dressed rubble blocks of *circa* 300mm by 250mm. The rougher style of building employed in its construction may indicate that building CXXXIV was founded relatively late in the *vicus*’ history.

Elsewhere in the *vicus*, for example buildings XXX, XXXII, XXXIII and XXXIV, the trend of using such large sandstone slabs as foundations had clearly come when the original structures of the Severan military compound, which had been built using courses of small, roughly dressed rubble, had been modified into *vicus* buildings. The large sandstone slabs of the *vicus* buildings were merely laid on top of the old walls of coursed rubble. Unfortunately, no evidence of building CXXXIV’s floor had survived, nor had any of its internal features such as hearths or internal walls.

Immediately outside the south wall of CXXXIV, a flagged surface had been laid, probably as a yard associated with the building. This had been built with substantial sandstone slabs of around 780mm by 600mm and 120mm thick. The yard covered an area measuring 7.1m east-west by 9.4m north-south, giving it an overall area of 66.7 square metres. A short, 4.50m long section of its retaining wall had survived *in situ* at its southern end, where a row of re-used building stones had been laid end to end.

A further flagged area was identified to the north of the building. Again, this is likely to have been a yard associated with CXXXIV. It had two small circular features in its northeast corner which were almost identical, both measuring 600mm in diameter and built using thin courses of dressed rubble, laid to form a rough circle. Neither was very deep, and a flagged base was discovered in each within 500mm of their top course of masonry. There was nothing in terms of material culture found in either one. They seem likely to have been shallow water tanks, perhaps serving the residents of building CXXXIV or livestock housed in its northern yard.

Perhaps the most significant aspect of CXXXIV was its stratigraphic relationship with the Antonine...
Some of the flags used to construct its yard, as well as the retaining wall at its south end, overlapped the underlying Antonine annexe wall, suggesting that the yard was built at some stage after the annexe wall had been demolished. Similarly, the walls and floor of CXXXIV had been built directly on top of the backfilled Antonine defensive ditch associated with the annexe wall. As noted below (page 69), this ditch contained many stones from the annexe wall which had been thrown into it, presumably on its demolition by the departing Antonine garrison, or by the incoming unit during the Severan period.

The implications of this stratigraphical relationship are important because it means that the old annexe wall did not continue in use as a defensive barrier enclosing the majority of the vicus buildings as a form of town wall throughout the third century. Its demolition left the vicus exposed and apparently undefended. By inference, this suggests that the residents in the vicus of Vindolanda during the third century felt safe enough to live in relatively undefended structures. This was very much the opposite of the military garrison in the Antonine period, which had felt the need to erect a major defensive wall and ditch in the same location only 25 to 50 years earlier.
Vicus conclusions

The 2007-2012 excavations in the extramural area to the west of the third-century fort at Vindolanda have provided a large volume of new archaeological information relating to the vicus, its occupants and other users during the third century. Significant evidence relating to its infrastructure, spatial layout, the forms of structures situated there, and their function, has been added to the record, as well as information from a large amount of material culture discarded either deliberately, or by chance, by the people who used it.

On their own, the results of these excavations have illuminated elements of the various discrete areas covered and have allowed us to draw reasonable conclusions about aspects of Roman life there. However, their value is maximised when the results are considered in conjunction with information collected from previous excavations in the vicus prior to 2007. At the time of writing, the vicus at Vindolanda is one of the more comprehensively investigated third-century extramural settlements, certainly in Roman Britain and also further afield. Judging by the various geophysical surveys conducted at the site and its hinterland (21-23, above), there appear to be only two small areas left to examine. The first lies north of the modern Stanegate road, where a thin ribbon of settlement appears to have been situated (figure 6), while the second is a small, triangular area between roads A1, A3 and B5. Spatially, they represent less than 10% of the overall area of the vicus, meaning the overall trends and conclusions outlined below seem unlikely to change significantly if, or when, the remaining areas are investigated.

One of the aims of the 2007-2012 research was to try to establish a chronology for the foundation, expansion and eventual abandonment of the vicus at Vindolanda. The information gathered, coupled with that from previous excavations, has broadly allowed us to do this.

The evidence suggests that the vicus was founded close in time to the fort itself in AD213. The old Severan structures on the eastern part of the site were demolished, if they had not already been so by the exiting garrison, as proposed by Robin Birley (2009, 153). This area, formerly covered by the extraordinary series of roundhouses (Birley, R., 2009, 135-140), was converted into the main stone-built fort and garrisoned by Coh IV Gallorum. Soon afterwards, or perhaps simultaneously, the buildings in the western part of the site immediately outside the fort’s western wall, which had previously served as accommodation for the Severan garrison, were extensively modified into various structures with residential, commercial, industrial, service and storage functions (figure 41).

Securely stratified coinage recovered in the 1970s from the eastern part of the vicus has suggested that it had been founded contemporaneously with Stone Fort 2 and had existed for around 60 years before being abandoned around AD270 (Bidwell, 1985, 88f; and Casey, 1985, 105) The coinage recovered from excavations in the west of the vicus between 2007 and 2012 has produced nothing to alter this date range (Brickstock below, 125f).

With its foundation appearing to have been contemporary, or nearly contemporary with the building of the fort, the vicus at Vindolanda adds weight to Sommer’s assertion (1984, 9, 11) that military vici would have been established more or less contemporaneously with their associated forts. Margaret Snape has also highlighted the short-lived Carriden as an example of a fort where a vicus could not have taken long to spring up (Snape, 1991, 468).

Refining exactly when, and in which direction, the vicus at Vindolanda subsequently spread is more difficult to establish. It is tempting to suggest that the earliest parts of the vicus would have been clustered around node points such as the fort’s west gate, where footfall to and from the fort would have been concentrated enough to provide the greatest market opportunity, with further building developments subsequently spreading further away towards the periphery of the site as time progressed. However, from the surviving datable evidence at Vindolanda, it is impossible to prove such a simplistic theory, or to suggest alternative models as to precisely how the vicus evolved.

The aerobic soil conditions in the later Roman levels at Vindolanda have restricted the absolute dating
evidence to epigraphy, coinage and ceramics. These can be used in conjunction with the relative dating sequences provided by stratigraphic relationships. However, with the *vicus* only occupied for around 60 years, there is, unfortunately, insufficient tightly stratified and datable material from the periphery of the *vicus* to accurately establish its progressive spread through time. This task has been made all the more difficult by the significant amount of damage to several areas within it by post-Roman agricultural activities and stone robbing.

In reality, all that can be said from the available evidence about how and when the *vicus* evolved is that it was founded close to AD213 before being mainly abandoned by AD270. The evidence is simply insufficient to suggest more accurately how the overall settlement developed in the intervening 57 years.

There is, however, significantly more evidence to suggest when the *vicus* was finally abandoned. The spread of deposited coinage is perhaps most telling in this regard. As figure 40 shows, there is an almost complete absence of coinage post-dating AD270 from the majority of the *vicus*. The one exception

Figure 40. Plan showing the distribution of coins recovered from fourth-century contexts in both intra and extramural areas at Vindolanda. After Birley, A., 2010, 139.
to this is the relatively few coins recovered from buildings alongside roadway A1, the main access route in the later Roman period to the fort’s western gate. In his report on the coinage recovered during early vicus excavations, John Casey suggested that this small scatter of later issues was likely to represent “nothing more than the casual losses of passers-by in later periods” (Casey, 1985, 105). The evidence collected between 2007 and 2012 has added nothing to suggest otherwise (Brickstock 125f below), and Paul Bidwell’s observation (1985, 90) that “the evidence of the coins is sufficient to show that vicus II was for the most part abandoned by c.270 and never rebuilt” still holds true after the most recent excavations. The latest issue of coin found in the vicus between 2007 and 2012 was of the House of Valentinian (AD364-378), see Brickstock 128, but, broadly speaking, there were extremely few coins deposited there which had been minted post-AD270.

The ceramic assemblage provides additional evidence for a date of abandonment in the vicus sometime towards the end of the third century. In stark contrast to the intramural fort area, where they appear in abundance, the classically later Roman ceramic types such as Crambeck and Huntcliff wares are almost entirely absent in vicus contexts, other than the very occasional sherd.

The inference from this absence of later Roman material is that the vicus at Vindolanda was almost entirely abandoned in the later third century and certainly by the beginning of the fourth century. This is in stark contrast to evidence from the intramural area of the fort itself (Birley A., forthcoming). However, it is a very similar picture to that which has emerged from several other sites spaced along the Hadrian’s Wall corridor (Hodgson, 2009, 35). At Housesteads, for example, numismatic evidence also strongly suggests that occupation of the civilian settlement had ceased by c.AD270 (Rushworth, 2009, 264).

However, at odds with this is the longevity of occupation into the fourth century at vici such as Malton (Bidwell, 1991, 12) and Greta Bridge (Rushworth, 2009, 267). Also of interest are the results of recent work in the extramural area at Binchester, where extramural occupation also appears to have continued into the fourth century (Mason, 2013, 16). Such sites buck the general trend of late third-century abandonment of vici on Hadrian’s Wall and potentially show a significant change in policy, settlement or circumstance for sites to the south of the line of the northern frontier.

When the abandonment of the vicus at Vindolanda is compared to the clear continuation of occupation inside the fort itself (Birley A., forthcoming), even more light is shed on the matter. The fourth-century remodelling of the barracks in the northwest and northeast quadrants of the fort (Birley, A., forthcoming; and Bidwell, P., 1985, 66-72) from relatively conventional infantry barrack buildings into multiple, independent structures is suggestive of a change, possibly in the type and certainly the number, of soldiers residing there in the fourth century. When the strong evidence provided by the spreads of material culture is added for the presence of numerous women in these buildings (Bidley A., 2010), it appears likely that soldiers were living with their families inside the fort walls. With the vicus being abandoned immediately prior to this change, it seems probable that there was a major shift in population from the extramural vicus to the intramural area inside the fort’s defences in the fourth century, a trend observed by Daniels some time ago (1980, 173-93).

In terms of the function of buildings situated inside the vicus, the evidence is relatively strong throughout most of its area. It appears to have contained a mixture of structures used variously for service, commerce, storage, religion and industry, as well as containing several residential dwellings (figure 41). The fact that buildings of a similar function appear to have been grouped together in clusters or zones is also readily apparent now that most of the vicus has been investigated.

For example, several of the buildings situated alongside roadway A1 appear from their layout and material culture assemblages to have had a retail or at least commercial function, in addition to being residential dwellings (see for example Birley, R., 1977a. 40; Birley, R., 2009, 163; and Birley and Blake 2005, 3-4) This is perhaps unsurprising given that the road was the main link between the Stanegate and the western gate of the fort. It would have provided the greatest concentration of footfall and therefore market opportunity to those wishing to capitalise on passing trade from people going to and from the fort.

It is also unsurprising that the largest, and
potentially most affluent, residential dwellings appear to have been situated further south, away from this busy main road in a relatively quiet area of the vicus towards its southern periphery (Birley and Blake, 2005, 2-19). The site was well situated to take advantage of the prevailing west wind, which, most of the time, would have blown smoke from fires and the nearby industrial workshops away from dwellings. No doubt its residents could have enjoyed the relative peace and quiet of such a location while still being able to capitalise on the myriad of opportunities that residences situated so close to a fort must have offered. Similarly, a cluster of residential dwellings was identified on the north side of roadway A1, tucked away behind the commercial structures flanking the main road (Birley, R., 1977b; and Birley, R., 2009, 163). Perhaps their position indicates that such residences played second fiddle to commercial properties in terms of their location in prime positions, such as the edges of the main roads, which are likely to have held the greatest market opportunity.

There seem to have been at least two discrete zones containing industrial buildings close to the fort walls (Birley, R., 1977b; and Birley, R., 2009, 160), with other concentrations of structures with an industrial use situated towards the western periphery of the vicus (Birley and Blake, 2005, 49-61 and 33-39 above). For the most part, these workshops seem to have been primarily engaged in the production or working of iron and copper-alloy, although their scale indicates that this was on a relatively minor level. It also remains frustratingly unclear who was

Figure 41. Plan showing the zoning within the third-century vicus at Vindolanda, with each building shaded according to its identified use. The various clusters or ‘zones’ of buildings with a similar use can clearly be seen. It is also apparent that each ‘zone’ broadly respects the vicus road network.
working in such structures, with soldiers or non-combatants both being possibilities.

Buildings used for storage, such as sites CXXXV, CXXXVI, CXXXVII and CXXXVIII seem to have been clustered in the south of the vicus, immediately outside the fort’s south gate (Birley, R., 2009, 160). Their position was perhaps influenced by structures with other uses taking priority, leaving them to be positioned in spaces deemed less attractive, or perhaps their being on the edge of the vicus meant it was easier to unload incoming supplies there.

Finally, there seems to have been a deliberate attempt to concentrate the temples and other religious structures on the westernmost edge of the vicus (see for example Birley and Blake, 2007, 79-91). The only significant exception to this was the Dolichenum discovered to have been sited in the northern rampart of the fort in 2010 (Birley, A. and Birley, A. R., 2012). The fact that most of the temples at Vindolanda were clustered alongside major roadways leading away from the site is in keeping with similar structures from other parts of the empire (Toynbee, 1971, 73).

This apparent ‘zoning’ of the vicus into buildings with similar uses, usually segregated by the communication network of roads, indicates there was some sort of formalised planning system in place. If those living in the vicus or attracted there by its market opportunity had been allowed to build whatever they wanted, wherever suited them best, it seems highly unlikely that such a clear pattern of zoning could have become apparent. It seems more plausible that some authority was in place which was responsible for allocating space to those wishing to build or establish businesses in the vicus. A detailed analysis of exactly who this authority was, and how such planning was arranged, is a difficult question to answer, and outside the scope of this report. The most likely candidates would logically be the prefect in charge of the fort, a delegated bureaucrat with designated powers such as a potential beneficiarius consularis noted at Housesteads (R.I.B. 1599 and Snape, 1991, 469), or perhaps at Vindolanda a figure from within the vicus community itself may have been elected, or given the required authority. The altar to Vulcan (R.I.B. 1700) found by the large water tank (site XIII) at the western edge of the vicus and dedicated by the vicani Vindolanesses seems to suggest the

residents of the vicus had arranged themselves into some sort of cohesive group with the potential to have had an elected official.

Further evidence towards the vicus having had at least some sort of formalised plan is evident in the layout of the network of roads linking the various vicus zones together (figure 10). The positioning of the fort just to the south of the Stanegate road would have almost inevitably created the need for a major thoroughfare to link the western gate of the fort back to the main Stanegate, a major element in Sommer’s classification of Vindolanda as having a ‘tangent’ type of vicus (Sommer, 2006, 103). There may, however, be slightly more to it than that. Even when this main linking road moved from A2 to A1 (figure 10) when Stone Fort 2 was founded by Coh IV Gallorum in the early part of the third century, a whole series of secondary roads linking other areas of the vicus together appear to have been maintained and kept in use. These minor roads were also notably straight in course throughout their length. If there had been no planning involved in their layout and construction it seems unlikely that they could have followed such a straight course for the lengths that they did, as the organic construction of various buildings on an ad hoc basis would seem likely to have blocked their course.

Further planning controls may be also hinted at by the construction fabric of these secondary roads. While only the major ‘A’ roads appear to have been given a flagged surface, similar to the via principalis and via decumana inside the fort, leading Robin Birley to conclude of road A2 that “there can be no question of anyone but the military building such a fine road” (2009, 153), the ‘B’ roads were nonetheless well constructed, with a high degree of uniformity. They usually had a solid cobbled base, with finer aggregate in the centre and a top dressing of gravel. This uniformity of construction, their straight course and the fact that the zoning in the vicus seems to have respected the minor ‘B’ roads and other minor alleys as boundaries, perhaps indicate that the road network was planned and laid out first. The various structures in the vicus and their collective zoning would then have been arranged to fit within this communication infrastructure.

Overall, there seems to have been a high degree of planning in the layout of the infrastructure, as well as the arrangement and allocation of space within
the *vicus* area. The formalised road network, the degree of zoning and the various uses of space within the extramural *vicus* area, highlighted by various excavations since the 1970s, all appear to point to a heavy influence and degree of control by the Roman military.

Coupled with Andrew Birley’s detailed analysis and comparison of the deposited material culture in both areas (2010), which also suggests a heavy military presence in the extramural *vicus* area, there seems to be a clear answer to the overarching research question of the 2007-2012 Scheduled Monument Consent: ‘was the fort wall the great divide between the intramural and extramural populations at Vindolanda from the early third century?’ The evidence collected from the *vicus* over the last 40 years or so suggests the answer is a resounding ‘no’: the fort wall provided no great divide between the population living and working inside the fort and those outside its walls. Their lives appear to have been inextricably linked, with a heavy military presence affecting the *vicus* throughout its existence.
Severan Remains (Vindolanda Period VIB c.AD205-212)

Although the major focus of research at Vindolanda between 2007 and 2012 concentrated on the third and fourth-century deposits, earlier features were identified beneath the remains of the vicus in some places. For the most part, examination of these earlier levels was limited to small areas. The results they produced, however, have added to our understanding of aspects of their relationship to previously excavated features of a similar date elsewhere on the site.

Much has already been written about the irregular layout of the military and extramural structures at Vindolanda in the Severan period (Birley, E., 1936, 218-257; Bidwell, 1985, 24-31; Birley, Blake and Birley, 1998, 12-18; Blake, 2001, 7-11; Birley and Blake, 2005, 20-23; Birley and Blake, 2007, 27-30; and Birley, A., 2013b, 65-69). Robin Birley has also provided a distillation of the general state of knowledge along with an outline of the main theories for the purpose of the irregular series of roundhouses outside the fort’s eastern wall (2009, 135-140).

It would appear that at the turn of the third century Vindolanda was the site of a relatively small military fort, including a praetorium and various barracks, on land that would later become the site of the third-century vicus. This fort had been given some of the most substantial defences identified at any of the forts built at Vindolanda, with a clay rampart measuring over 10m wide at its base and at least one defensive ditch, some 5m wide and 2m deep, surrounding its western edge (Birley, R., 2009, 135).

Figure 42. Plan of Severan Vindolanda showing the substantial defences surrounding the north, west and south sides of the fort and the series of roundhouses outside its eastern edge. The locations of excavations which have examined its defences are outlined in red.
Immediately outside its eastern wall lay a series of circa 150 roundhouses of unknown function. Constructed using stone foundations and with heather thatched roofs, they had been short-lived and were thoroughly demolished to make way for a new stone fort to accommodate Cohors IV Gallorum in circa AD213.

Recent excavations in 2001, 2002 and 2003/4 had examined sections of the Severan military fort’s main west and southern defensive ditches (Blake, 2003, 41-43; Birley, A., 2003, 59-60; and Birley and Blake, 2005, 20). Further excavation beneath the later third-century vicus levels in 2009 examined a 10m long section of the ditch’s southwest corner at a site 18m southwest of the Severan praetorium and immediately east of the Antonine annexe gate, see figure 42.

Excavation in 2009 made clear that the southwest corner of the main defensive ditch for the Severan fort had cut through the defences of the old Antonine annexe, signalling its abandonment by that date. Running on a slightly more northwesterly angle than the defences of the Antonine annexe, the new ditch had by necessity cut through the old Antonine annexe gateway, meaning a large part of the gate’s northern respond and a section of the roadway running through it had been removed, see figure 54.

Overall, the ditch had measured 2.51m across its top and was 980mm deep. It was also clear during excavation that it had been re-cut at least once, with very different ditch fills at its west and eastern sides. The original fill (context V09B-50), deposited in the very bottom of the ditch, was a mixture of decomposed organic material containing fragments of rotted laminated layers of bracken and heather carving. It did not contain any items of material culture.

The material (context V09B-33) which had subsequently built up above context V09-50, but which had only survived in situ in the east side of the ditch because of the re-cut, consisted of dark brown, slightly organic, mud. It also contained the majority of the material culture recovered from the ditch. This included 12635 and 13703, both ceramic gaming counters; 12650, a bone gaming counter; 12636, a jet bead; 12637, 12649, 12662 and 13704, all glass beads; 12638, a copper-alloy pin; 12679, an iron javelin head; 13709, 13782 and 13783, all fragments of lead; 13711 and 13722, both flint flakes; 13779, a decorated samian handle/token; and 13780, a lead fitting.

The only datable material recovered from the ditch came from a small pocket of mixed silt (context V09B-46) in the middle of the ditch, immediately north of the Antonine annexe gateway. The silt contained three sherds of pottery with maker’s stamps. Two of these were on Dragendorff type 33 terra sigillata vessels. 12696, was a stamp of the potter Miccio whose production dates were between AD150-180. The second, 13737, was of the potter Reburrus who had a production range between AD140-170 (see Sheehan-Finn, 153 below). The third stamp, 13742, was on a mortarium rim, but was, unfortunately, illegible (Sheehan-Finn, 137 below). The same context also produced 12695, an uninscribed altar; 13729, a graffito; and 13747, a ceramic spindle whorl.

The ceramics recovered from this main part of the ditch were predominantly from cooking vessels with sherds from a minimum of 54 different black-burnished ware vessels identified as well as 34 separate grey-ware vessels. In addition, 9 sherds of mortaria were recovered, which represented 8 different bowls. This strong representation of coarse-ware cooking vessels contrasted with the relatively scarce evidence for fine wares deposited here. Sherds from only 10 different terra sigillata vessels were recovered and fragments of all the other
fine wares combined represented no more than 26% of the overall sherd count.

The southwest corner of the Severan fort’s ditch seems to have been used as a refuse deposit, in a similar fashion to the 15m long section of its south ditch excavated in 2004 (Birley and Blake, 2005, 22). However, refuse appeared to have been deposited in the southwest corner on a far more limited scale and there seems to have been a difference in discard pattern between the two areas. There was a complete lack of any leather deposited at the southwest corner, even though the soil conditions were anaerobic and therefore conducive to the preservation of such items; as evidenced by the bracken and heather noted in the bottom of the ditch in context V09-50. This was in stark contrast to the southern ditch, which produced 230 items of leather footwear (Birley and Blake, 2005, 22). Similarly, the discard pattern of ceramics was different with a bias towards table-wares being found in the southern ditch (Birley and Blake, 2005, 22) in comparison to the significantly greater portion of coarse-ware cooking vessels in the southwest corner of the ditch, noted above.

These differences in the type of discard may be nothing more than coincidental, but it was clear that in terms of quantity, significantly more refuse in terms of ceramics, bone and material culture had been thrown into the southern part of the Severan ditch system than on its southwest corner, where it appears to have silted up naturally at a more rapid rate. This faster rate of silting was also evidenced by the fact that the southwest corner had been re-cut or cleaned at least once during its working life.

The re-cut section (context V09B-49) lay in the ditch’s western half. Measuring 1.83m wide across its top, the newly excavated section was 390mm deep and had subsequently filled up with numerous thin bands of naturally deposited sands and silt. Each of these was little more than 8mm deep, and they seem likely to represent successive episodes of natural sediment deposition; none of which contained any items of material culture.

The surviving sections of both the main ditch, and its re-cut section, had relatively shallow ‘U’ shaped profiles and it was notable that, overall, the top of each appeared to be narrowing towards the south of the excavated section. This was a radically different profile to sections of the Severan fort’s southern ditch examined to the north and east, which had the classic ‘V’ shaped profile of a *fossa fastigata* (Birley and Blake, 2005, 23). It is possible that this narrowing with a shallower profile could represent the start of a similar terminus to that of the Severan fort’s southern ditch noted by Birley during excavation in 2003/4, (Andrew Birley, pers. comm., 2013), although this could not be proven within the limited area excavated in 2009.

A second ditch was found extending westward from the southwest corner of the Severan ditch, see figure 45. Aligned exactly with the Severan fort’s south ditch, it ran in an east-west direction and was traced for a total of 12 metres from the southwest corner of the main Severan ditch. Notably, it also curved slightly northwards over this 12m length, indicating that it may well have continued this course to form a second, outer, western ditch for the Severan fort.
The ditch measured 2.10m across its top and had a pronounced ‘U’ shaped profile. It had cut through the earlier timber posts and flooring material of the early/mid second-century remains, see figure 77, page 94, as well as the Antonine annexe wall and rampart, meaning it had post-dated those structures. Its bottom 200mm had been cut into the natural boulder clay. Overall it was 840mm deep, although it was clear that, similar to the main western ditch, it had been re-cut at least once. At 680mm in depth, this re-cut was also slightly shallower than the original.

The fills in the main part of this outer ditch, and its re-cut, were similar to those within the main western ditch. The original deposits at the bottom and the south side of the ditch (context V09B-35) consisted of thick clay including some organic material, while the re-cut (context V09B-64) contained numerous thin bands of naturally deposited sands and silt.

The soils in both the original ditch, and the re-cut, were anaerobic, meaning organic material was preserved in good condition. Unlike the southwest corner of the main ditch, several items of leather, including five shoes, L09B-3, L09B-4, L09B-5, L09B-6, and L09B-13 were recovered from the outer ditch, along with a burnt flint flake, 13748 and several scraps of tent leather, L09B-14. All of these items were found in the re-cut section of the ditch.

The exceptional size of the main western rampart and ditch of the Severan fort has been noted before (Birley, R., 2009, 135). In addition to these already formidable defences, it is now evident that a second, outer, ditch may also been cut to help defend the fort’s western edge. Given that a single ditch had been deemed sufficient to defend the south side of the fort, this additional outer ditch makes it clear that more effort was put into defending the west edge of the Severan fort. Perhaps it can be taken as an indication of the direction from which a perceived threat was most likely to arrive.
The later second-century remains are some of the most complex, unusual, and unfortunately, often the most heavily damaged at Vindolanda. The fact that earlier stone-built remains had lain beneath the early third-century fort was recognised in early work at the site by Eric Birley in the 1930s when the foundations of the walls of an earlier fort, which became known as ‘Stone Fort 1’ in Vindolanda’s site literature, were noted beneath the north, east and south walls of its successor (Birley E., 1931, 200-202).

Further work in the *principia* of the third-century fort, between 1932 and 1934, also identified an ‘unusually elaborate’ predecessor, which had contained a relief embodying the Sun God in his chariot (Birley, Richmond and Stanfield, 1936, 229-233). The building faced south and had been built in the unusual ‘adobe’ tradition, more commonly found in North Africa. At the time, this earlier *principia* was ascribed a pre-Constantian date, but the excavators felt less certain that it had been erected by the time of Severus.

The fact that this earlier stone fort had faced south then led Eric Birley and Ian Richmond to explore the possibility of it having had gateways in line with the south front of its *principia*, beneath the curtain walls of its early third-century successor. A western gateway with a single portal was duly found, its foundations made from massive ashlar blocks (Birley, Richmond and Stanford, 1936, 233-238). Similarly, the foundations of its eastern gate were identified beneath the remains of its successor, first examined by Anthony Hedley in the early nineteenth century.

Further traces of buildings associated with Stone Fort 1 were identified by Bidwell in 1980 during an examination of third and fourth-century barracks in the northeast quarter of the later stone fort (Bidwell, 1985, 11-33). Similarly, a long stone wall, running north-south and containing several doorways, was identified beneath the later *praetorium* in 1998 (Birley, Birley and Blake, 1998, 27-28).

As Robin Birley pointed out, (Birley, R., 2009, 122) at the time of these previous excavations, the main focus of research was on the later of the two stone forts and the implications of the earlier *principia* and the other associated, but fragmentary, remains of Stone Fort 1 were not fully addressed. However, further excavation between 2000 and 2012, including a re-examination of the early western gate identified by Richmond, finally provided a structural sequence with at least some positive dating for a minimum of two discrete phases of building activity in the later second century (Birley and Blake, 2007, 17-26). The same excavations also identified the exact position of the northwest and southwest corners of these forts (Birley and Blake, 2007, 9; and Birley, A., forthcoming).

It is now clear that what has been termed ‘Stone Fort 1’ had actually been built in turf and timber in its original phase, with its defences being exceptionally well preserved near the southwest corner where the individual rampart turves and their associated timber strapping were clearly visible (Birley and Blake, 2007, 18-19). At some stage, it is unclear exactly how long after, the western rampart had been extensively modified with a new turf revetment, this time secured with oak strapping in preference to the birch and alder used in its predecessor (Birley and Blake, 2007, 19-20). This second phase of building also saw the fort’s western gate modified to include a stone foundation. Such a modification to the Antonine fort had clearly substantially bolstered its defences, but further rebuilding was to follow.

In the later second century the fort was remodelled again. This time the entire defences appear to have been built in stone and the position of the western gate was moved from its previous site to a location some 28m further north. The fort walls were built using highly distinctive small, soft, yellow sandstone blocks, sourced from the Cockton burn quarry north of the fort, similar to those used to build Stone Fort 1’s *principia*.

It seems likely that the *principia* and fort walls were remodelled in stone at the same time to replace their timber predecessors. However, as the excavator of the fort’s defences, Andrew Birley, pointed out, the very limited excavations of Stone Fort 1’s *principia* in the 1930s did not find any trace of a pre-existing timber structure and it remains a possibility that it
had been built in stone from the outset (Birley and Blake, 2007, 22).

Clearly there is still much to learn about the structural sequence, garrisons and absolute dating of the forts at Vindolanda in the second century, but it has become evident from successive excavations that many modifications and a substantial bolstering of their defences had been deemed necessary in what is known to have been a turbulent period in the history of the province (Frere, 1992, 135f).

During the same period, there also appears to have been extensive Antonine building activity outside the west gate of the fort on land that was later to become the site of the vicus in the third century.

Excavations between 1973 and 1994 revealed that the two ditches which had helped defend the western side of the later second-century fort had been filled in and sealed with a layer of capping clay to provide a sound foundation on which to build a series of large, rectangular timber buildings. Material trapped in the ditches, sealed beneath the packing clay, included an As of Faustina I (AD141+) and the ceramic assemblage suggested material that extended to at least the late AD170s (Birley, R., 2009, 127). The timber buildings had contained hearths and it was suggested by their excavator, Robin Birley, that they may have been part of an annexe for additional soldiers to those accommodated in the main fort itself (Birley, R., 2009, 127).

In addition to these extramural timber buildings, stone-built structures of post-Hadrianic, but pre-Severan, date were found in at least three places between 1970 and 1972. As with many of the later second-century structures at the site, only fragments of their remains were traced during excavation. A small baths suite, subsequently included as part of the southern range of rooms of the Severan praetorium, but laid out on a different alignment, and butt-jointed to the later masonry, suggested the reuse by the Severan prefect of part of a pre-existing extramural building (Birley, R., 2009, 128). In addition, stone-built walls, which had clearly predated the Severan buildings that followed them, were found beneath sites XXI and XXXI, (Birley, R., 2009, 128) for the location of which see figure 6. Robin Birley (2009, 128) also highlighted the possibility that the military bath-house, associated with Stone Fort 2 and in use in the early third century, may have had its foundation during the later second century when the fort was converted from timber to stone. This would mean that it had originally also formed part of the extramural settlement in the later second century.

A small religious precinct containing at least two temples or temple-tombs, discovered in the far west of the site in 2005, is also likely to have been founded in the later second century (Birley and Blake, 2007). A coin of Faustina II (AD 161-175) was found trapped beneath one of the temple’s doorways, suggesting a date of foundation sometime after AD161. A number of free-standing statues were also discovered there as well as fragments of an ornate frieze, the design of which had included an elaborate pattern of foliage (Birley, P., 2007, 138). As Robin Birley pointed out (2009, 130) the quality of their workmanship, along with the similar nature of the sandstone, bore a strong similarity to the fine work of the ornate principia of Stone Fort 1. It is possible that the same skilled set of sculptors and masons was responsible for each. In view of the regulation in the Twelve Tables that the dead had to be disposed of outside a settlement (Cicero De leg. ii, 22, 56) the religious precinct containing the temple-tombs is likely to mark the western edge of Roman settlement at the site in the later second century.

A combination of various fragmentary pieces of evidence encountered in several areas over the last 40 years suggests that in the latter part of the second century Vindolanda was the scene of significant military building activity. A turf and timber fort was modified, or possibly replaced entirely, by a stone successor, which had one of the most ornate principia of any on the northern limes. It also appears that a structural sequence mirroring that of the main fort area had taken place in the extramural settlement outside its western walls. A series of short-lived timber buildings had been replaced by stone-built structures before being replaced in turn by buildings which formed the irregular Severan fort sometime shortly after the turn of the third century. The western limits of this extramural activity appear to have been the small religious precinct flanking the northern edge of one of the main roads leading in and out of the western part of the site.

Further excavations immediately to the west of those which informed the description of the remains discussed above took place between 2007 and 2012. These produced results which have added significantly to our knowledge of the extramural...
area in the second half of the second century. An annexe with a major defensive system comprising a stone wall, complete with a single portal access gate, and associated rampart and ditch, was found to surround the western part of the extramural area. Further, but more fragmentary, remains of various industrial buildings were identified beyond its western limits in the area between its western wall and the religious precinct beyond.

**Defensive features surrounding the western edge of the settlement in the later second century**

The plan below shows the location of the areas excavated towards the west of the site at Vindolanda between 2007 and 2012 in which remains of later second-century date were identified. As can be seen, these can be broken down into four main features; the defensive components of an annexe, consisting of wall, rampart, ditch and associated roadway; potential industrial workshops lying beyond the annexe’s western limits; the foundations of a major aqueduct, which had channelled water from a spring in the northwest of the site; and evidence of a floor surface inside the annexe wall beneath *vicus* building XXI.

In 2011, a section of a defensive wall with an associated rampart, road and defensive ditch was identified just west of the third-century bath-house. The wall measured 1.85m wide and was traced for 30.80m in a north-south direction. It had only survived to its foundation course and had been bisected at some stage in the post-Roman period by agricultural activities at its northern end and for a 3.60m wide section through its centre. There was also significant evidence of post-Roman plough damage to the tops of its surviving stones in the form of deep linear striations.

![Figure 47. Plan of Vindolanda in the later second century, showing stone-built features identified in the intra and extramural areas. The position of the annexe defences are marked in black where they have been proven and are dashed where their position has been postulated. The areas excavated between 2008 and 2011 are marked in red.](attachment:figure47.png)
Its west, external, face had been constructed using relatively soft, yellow sandstone blocks of squared rubble. Such distinctive masonry has been noted elsewhere on the site to have been commonly associated with Stone Fort 1 (Birley and Blake, 2007, 22; Birley, R., 2009, 123). The blocks in the wall averaged 480mm by 360mm in size and several chamfered stones had been used, or possibly re-used from another building, within its foundation course, see figure 48. The chamfered edge of these had sloped downwards and their bottom edges indicated the Roman ground level during the period in which the wall was in use.

The core of the wall, which was 1.49mm wide, had been made from a mix of clay, river stones and broken pieces of random rubble. These had been set behind the facing stones, but were tightly enough packed together to have, in combination with the clay, provided a solid bonding agent. There was no rear face to the wall, but a significant spread of homogeneous, hard packed, fawn coloured clay seems likely to represent the remains of a rampart. If so, there would have been little need for a second, inner face, which would never have been seen during the period in which the defences were used. The clay from this potential rampart spread 3m east of the wall face and bordered onto a north-south running cobbled street, described below.

It was also clear during excavation that the rampart clay had extended beyond the west or front face of the defensive wall. This meant that the wall had sat centrally on top of the rampart rather than flush with its outer edge. While it is possible that it had been constructed this way as part of its original design, it is perhaps more likely that the wall had been built on top of an existing rampart base. The west ditch of Vindolanda Period V’s fort lay within 10m of the rampart clay and the fact that at least two major phases of building activity had then taken place at the site during the later second century has been outlined above. It is quite possible that, as part of the penultimate phase of construction to have taken place in the area, the defensive wall had been built on top of the remains of a pre-existing rampart base. Originally, this could have been Period V’s western rampart during the Hadrianic era (c.AD120-130s), an earlier, timber-built phase of the Antonine defences, or possibly a combination of both.

6.30m south of its northern most surviving point, the wall had been removed entirely in the post-Roman period. A relatively narrow trench (context V11B-11) of 3.60m was identified as having run northeast-southwest from a point somewhere under the modern visitor footpath adjacent to site XI towards the northwest edge of the third-century bath-house, see figure 49. At an average of 600mm deep, this trench was relatively deep, and those responsible for it had taken away all of the stones they encountered, as well as any items of Roman material culture with the exception of a gaming counter, 16599, which had been overlooked.
If the sole purpose of this trench had been to win a cheap supply of stone for a local building project, it seemed odd that its diggers had not altered the course of their trench to follow the line of the annexe wall with its supply of good quality dressed stones. A plausible theory offered by Robin Birley (2013, pers. comm.) is that whoever was responsible may have been following the line of a lead water pipe feeding into the military bath-house just to the east. The few pieces of glazed ceramic evidence left in the fill of the trench suggested it was likely to have been cut sometime between the eighteenth and early twentieth centuries.

Immediately outside the wall to the west, a berm, consisting of river-washed cobbles set into clay, and measuring 1.40m wide, had separated the wall from a defensive ditch. The defensive ditch, which ran parallel to the wall, had been cut with the classic 'V' shaped profile of a fossa fastigata. Measuring 2.80m wide at its top, it had been preserved to a depth of 1.20m. Although subsequent reuse of the land later in the Roman period is highly likely to have removed some of its upper levels, meaning that, originally, it may have been deeper than this. Several episodes of deposition could be identified within its fill, some of which appeared to have occurred naturally, with others representing clear deposition of refuse.

The lower part of the ditch (context V11-08B) consisted of several episodes of silt deposition with a thin 10mm layer of organic mud at the very bottom. Its anaerobic nature meant that various twigs and other vegetation had been preserved within it. It also contained several items of material culture; 16540, a stone lid; 16541, a whetstone; 16586, a samian stamp of the potter Sacrillus (AD165-200); 16598, the greater part of a Dr 31R terra sigillata bowl with a stamp of the potter Marcus (AD 160-210); 16609, a graffito; 16610, a stone ballista ball and L2011-11, a shoe.

A large patch of rotted laminated carpeting (context V11-09B) lay within the silt of context V09B-08. This varied between 400mm and 80mm in depth and appeared to have been a deliberate discard of old flooring material into the ditch as refuse. It contained 16596, a spindle whorl and W2011-7, a wooden pulley wheel, as well as four shoes, L2011-10, L2011-12, L2011-13 and L2011-14.

The upper fill of the ditch, above contexts V11-08B and V11-09B contained an accumulation of around 680mm of mixed soils, mainly consisting of grey clay and silts (context V11-13B). Small finds 16563, a small copper alloy strip; 16566, a large corroded iron artefact; and 16568, a corroded iron bar were found in this upper layer of the ditch's fill.

Immediately behind the defensive wall to the east lay a cobbled street (context V11-05B). Measuring 4.80m wide, its surface lay within 300mm of the modern turf level and, consequently, significant areas of cobbling had been damaged by post-Roman ploughing. Sufficient cobbles had survived, however, to indicate that it had run adjacent to the east edge of the defensive wall and rampart, forming a ‘T’ junction with road A1 at the western edge of vicus building XXI. Six items of material culture were recovered from the road’s surface; 16532 and 16614, both stone lids; 16552, a piece of worked bone; 16553, a stone gaming counter; 16607, part of a corroded blade; and 16611, a stone ballista ball.

In 2009, further evidence of the same set of defensive features was found some 96m to the south of those described above, see figure 47 for their location. In addition to the wall, rampart and ditch, however, a single portal gateway was also identified in this area.

The defensive wall was traced for a total length of 18m, before it was found to have been cut by the southwest corner of the Severan ditch to the north.
and by vicus roadway A2 at its south end. Its construction style was identical to the section of wall found further north in every respect. It also measured 1.85m wide and its western (outer) face had been constructed with squared rubble blocks with a core of fawn clay and building rubble mixed with river stones. As with the section of wall found further north, there was no inner face, but, again, a substantial spread of thick fawn clay (context V09B-32), 2.90m wide, seemed likely to represent the remains of a rampart on the wall’s eastern side.

The wall also showed a clear change in angle, the axis being the southern respond of the single portal gateway, described below. To the south of the gate, the wall had run in a north-south direction on an alignment identical to that of the western defences of Stone Fort 1 identified by Richmond in the 1930s (Birley, Richmond and Stanfield, 1936, 233-238), and by Andrew Birley in 2005 (Birley and Blake, 2007, 17f) and 2007 (Birley, A., forthcoming).

However, north of the gate, the wall had been aligned 14 degrees further to the northeast. This alignment was identical to the section of similar wall found just west of the third-century bath-house in 2011, described above. Even with a 61m long unexcavated hiatus between the two sections, there can be little doubt that they are the same feature. Also of note was that fact that, north of the gateway, the wall’s alignment matched that of the ornate principia of Stone Fort 1, reported on by Birley, Richmond and Stanfield (1936).

The foundations of a gateway were found attached to the section wall excavated in 2009. Unfortunately, a significant proportion of it had been cut away by the southwest corner of the Severan ditch, and there was additional damage to its surviving features from post-Roman agricultural activities.

Figure 51. Aerial view looking southeast, showing the annexe wall (running from bottom-left to topright of shot), as well as the clay rampart and cobbled road surface behind it. The interruption to the wall caused by the robber trench can also be seen (centre).

Figure 52. The Antonine annexe wall (centre) and ditch (left), looking north. The 14 degree change in angle of the wall can be seen as the wall meets the gateway.
However, enough of it had survived to prove its association with the defensive wall as well as establish its dimensions and form.

The gateway had been constructed using block in course sandstone masonry, bonded together with clay. A single course of masonry survived above the foundation course and had been inset from it by 60mm. It had survived *in situ* for 2.25m in an east-west direction, before it had been cut by the southwest corner of the defensive ditch, which had surrounded the Severan fort. South of the gate, the defensive wall had been butt-jointed onto the gateway with its outside face set flush with the fronts of the gate responds. This suggested that the gate had been built first and the wall added at a later stage. However, there was no evidence to establish exactly how much of a time lag had taken place between the two episodes of building.

The southernmost of the two gate responds was the better preserved of the two and its stones were consistent in size at 500mm long by 300mm tall. They had also been carved with triangular tails of c.400mm length, which had allowed them to bed directly into the rampart clay behind them. The northern respond was not as well preserved and only two of its stones had survived above the foundation course. They were, however, identical in style to those in the southern respond. It also appeared, at least on the southern respond, that the gateway had only been given an outside face of masonry. Presumably, as the solid clay rampart was to cover the opposite, inner face, it was felt there was no need structurally, or aesthetically, to go to the trouble and expense of producing and laying dressed masonry there. This was identical to the rear face of the defensive wall, which had followed the same building style.

The gateway was a single portal, measuring 2.66m wide between its responds before widening out to 3.05m in the recess of its internal passageway. As was conventional with Roman military gateways elsewhere along Hadrian’s Wall, (Taylor, 2000, 68) the doors had opened inwards. This was evidenced by two pivot holes, plus a grooved socket, 18mm deep and 80mm in width, which had secured the doors when shut. The door pivot holes had been cut into the gate’s foundation stones, set in a small recess formed by the ‘L’ shaped quoins of the gate responds. They were circular, measuring 100mm in diameter, and the northernmost of the two showed remarkably little wear, possibly indicating that the gateway had not been used for long before being demolished.

The extensive damage to the gate by the Severan ditch meant it was impossible to establish if there had ever been a guard chamber on its northern side. However, there was evidence of a stone wall, which ran east-west, 3.18m south of the southern gate respond. The wall had run perpendicular to the rampart and defensive wall and was traced for 2.32m
before it had been cut by the Severan ditch. It was isolated from anything else of a similar building style in the immediate vicinity and, although the evidence for a conclusive association was slight, it seems likely to have been a part of the Antonine defensive system. As such, the most plausible interpretation would be as a guard chamber wall. It would have given the guard chamber an internal area of at least 7.38 square metres, which is not at odds with several other examples from the Hadrian’s Wall area, discussed by Taylor (2000, 40).

Running through the gateway, the remains of at least two separate cobbled road surfaces were traced. The original, earlier, road (context V09B-68) had been made of relatively small river washed cobbles set into grey clay. It sat approximately 50mm below the tops of the gate’s foundation stones. In addition, a stone drain (context V09B-67) had been positioned into the road’s surface. This had been fashioned using carved channel stones averaging 800mm long with shallow grooves, 50mm wide, positioned in the centre of their upper sides. Within the gateway itself, the drain ran down the centre of the road, before curving northwards once outside the gate’s western side, see figure 54.

At some stage the roadway had been resurfaced (context V09B-59). A foundation layer of dressed rubble blocks had been placed onto the existing surface before a final, thin, top dressing of cobbles had been added to form a relatively smooth surface. The builders must have felt it necessary to retain the drain running through the centre of the gate as it was maintained. However, to cope with the newly raised height of the road, the carved channel stones had been given additional side stones of dressed rubble and were capped with sandstone flags. Interestingly, this later road surface had also covered the northern of the two door pivots, indicating that, by that stage, the gate had been kept open on a permanent basis. However, this free access must have been relatively short-lived because by the early third century the Severan ditch had cut through the road ending its use as a functional route for traffic.

At the same time as the road had been re-surfaced, an additional street-side drain (context V09B-65) had been added along the south side of the metalled surface, see figure 55. Constructed of squared rubble blocks bonded with clay, this had only been a single course of masonry deep and appeared to have been open, rather than capped. It had had been allowed to fill up with silt and did not contain any items of material culture.

The bulk of the rampart (context V09B-32), was set
directly behind the defensive wall. It had been made from fawn coloured clay, almost certainly displaced natural clay and, possibly, the up-cast created from the excavation of the adjacent defensive ditch. It had measured at least 3.30m wide, but the later Severan ditch had cut through it, meaning it was impossible within the excavated area to gauge its full original width, or to establish if it had once had any form of revetment. The defensive wall had been positioned along centre of the rampart for most of its surviving length, surviving to two courses high above foundation level. The wall stones had been shaped with tapering, triangular tails, which had allowed them to bond directly into the clay of the rampart itself. Four glass beads 12639, 12640, 12641 and 12645 were found within the rampart clay.

As with the section of the same defences examined further north, a spread of identical re-deposited clay to that which had formed the rampart also extended further west than the outer face of the defensive wall. This had been utilised as the base for a berm between the wall and ditch, but also meant that, unusually, the defensive wall had run along the centre of the clay rampart instead of forming its outer face. It is possible that the clay rampart had originally been part of a previous defensive system, which had then been reused to house the annexe wall. This could have originated in the Hadrianic period as the Period V west ditch lay only a few metres further west, see 86-88 below. Alternatively, the clay may represent the remains of an earlier Antonine rampart, modified to accommodate stone-built annexe wall in preference to a timber palisade.

The surface of the berm (contexts V09B-31 and V09B-57), measured 1.63m wide, and was traced over a 15m length running parallel to the wall. The cobbles had been set onto a bed of fawn coloured clay and had been laid to overlie the offset foundation course of the defensive wall. They consisted of river washed pebbles pressed into clay. The pebbles averaged 50mm in diameter, and had been laid with a consistent depth of 150mm. Three items of material culture were found on the surface of the berm, 12642, a green glass bead; 12643, a ceramic counter; and 12646, a copper-alloy stud. A number of dressed rubble blocks were also found lying at random on top of the cobbles of the berm and it seems probable that these stones had fallen from the adjacent defensive wall at some stage, either because of a collapse, or because of demolition.

The berm had sloped gently downwards to the west throughout its width, at which point the eastern lip of a major defensive ditch was identified. Unfortunately, the bulk of this ditch was situated beneath a major modern field drain. The drain was in full working order, removing most of the excess water from the western part of the site at Vindolanda. As such, it was impossible to remove to fully investigate the underlying Roman ditch, meaning only a 1.10m wide examination could be made towards its eastern lip, see figure 52.

The eastern edge of the ditch appeared to slope steeply to the west, which indicated it was likely to have had a similar ‘V’ shaped profile to what was almost certainly the same defensive ditch 68m further north, where it was possible to establish a full profile. Its fill (context V09B-62) was a mixture of decomposed organic material, and various deposition episodes of grey sand and silt. Although it was only possible to examine a small area of its fill, it nevertheless appeared to have been relatively clean. The only item of material culture recovered from it was 13741, a shale spindle whorl.

**An Antonine annexe**

The possibility of an annexe having been situated on the western side of the later second-century forts at Vindolanda is not a new theory. After excavations...
between 1970 and 1994, Robin Birley noted that the defensive ditches outside Stone Fort 1’s western edge had been filled in to make way for additional buildings on the same land, leading him to suggest that they may have been part of an annexe for additional soldiers to those accommodated in the main fort itself. He has given summaries of the evidence in 2007 (Birley, R., in Birley and Blake, 2007, 4f) and 2009 (Birley, R., 2009, 127).

However, the discovery between 2007 and 2012 of a major set of defensive features comprising a defensive circuit wall with a substantial rampart, gateway and ditch, which appear to have surrounded the entire western side of the site in the later second century has proved the point. The position of the annexe’s north and south sides are still unknown, but it would seem likely that they would have extended west from the north and south walls of the fort itself and have been indicated as such on figure 47. If correct, this assumption would mean that the annexe covered an approximate area of 12267 square metres, which is around 82% of the area of the main fort itself.

Absolute dating evidence for the defensive features of the annexe was relatively slight, despite the substantial area excavated. The only three pieces of potentially datable evidence were a samian stamp, 16556, from the rampart clay, which, unfortunately, was illegible and two samian stamps from the lower fill of the ditch. Stamp 16586 was of Sacrillus (AD165-200) and 16598, on the greater part of a Dragendorff type 31R bowl, was of the potter Marcus, whose production range spanned AD160-210 (see Sheehan-Finn, 150 below).

Relative dating, in terms of the sequential relationship of the annexe’s defences to other, more securely dated, features was more informative in both of the areas examined.

In terms of construction, the components of the annexe in the northern area, excavated in 2011, had clearly been built over the top of, and therefore post-dated, the earlier demolished Period IV and V levels. The annexe ditch had sliced through the northern defensive ditch of the Period IV fort. The cross-section of the Period IV ditch was clearly visible in both the east and west edges of the later, Antonine, ditch.

The annexe defences also appeared to have removed, or at least replaced, any Period V features that had originally been situated in the same area. Only 12m to the west, the major western defensive ditch of the Period V fort was identified. Spatially, it was therefore expected that the western edges of internal fort buildings could have been identified in the same area as the annexe defences during excavation. The fact that no evidence was found for any Period V structures, despite the area being excavated to a similar depth as the bottom of the Period V ditch, strongly suggests that the old Period V fort had been completely demolished prior to the commencement of the annexe’s construction. Although, as noted above, the builders of the Antonine annexe may have utilised elements of the old Period V fort, such as its clay rampart, during their own building work.

Similarly, the southern section of the Antonine annexe, examined in 2009, was also found to have been built over the top of earlier features, allowing a relative date to be ascribed to its construction in terms of its stratigraphical sequence.

The annexe gateway had been built over the top of an earlier timber wall, see 94 below. This had been constructed with thin oak planks nailed onto the upright posts. Although there was no direct datable evidence associated with it, its construction style was a classic example of the oak boarded walls found in several of the Period IV fort’s internal buildings elsewhere on the site (Birley, R., 1994, 111; Birley, R., 2009, 102). This distinctive building style has seldom been found in buildings of any other period in over 40 years of excavation at Vindolanda. Perhaps more conclusive, however, was the fact that a section of the Period V fort’s western ditch appeared, again, to have been cut by the annexe ditch meaning it must have post-dated it.

In terms of the annexe’s abandonment or demolition, the stratigraphical sequence was again quite clear. At the southern section of the annexe, the main Severan ditch had cut through the full set of defensive features as it curved around the southwest corner of its fort. Its diggers had removed a substantial area of the annexe’s clay rampart and both cobbled road surfaces running through the gateway, as well as most of the gate’s northern respond. Immediately north of the annexe gateway, the defensive curtain wall had also been completely removed to facilitate the Severan ditch’s course. Clearly, the annexe had been built and
had come to the end of its useful working life by the time the Severan ditch was cut in the early years of the third century.

Similarly, the northwest part of the annexe defences appeared to have been completely demolished to foundation level by the early third century. As noted above, its ditch contained a number of the distinctive soft yellow sandstone blocks used in the annexe wall. This suggested the wall had either partially collapsed, or perhaps more likely, had been deliberately demolished into the ditch. The flagged floor of *vicus* building CXXXIV had then been built directly on top of the backfilled annexe ditch and the stones forming the retaining wall at its southern end had overlapped the foundations of the annexe wall. This all strongly suggests that the annexe defences had been thoroughly demolished by the early third century, with the subsequent *vicus* spreading further west over the top of its remains.

Another major structural link between the annexe and Stone Fort 1 strongly indicated that the two were functioning at the same time. The annexe gateway was situated directly in line with and parallel to the original west gate of Stone Fort 1, identified first by Richmond (Birley, Richmond and Stanfield, 1936, 233-238) and noted on re-excavation by Birley A in 2005-6 to have been some distance south of its successor (Birley and Blake, 2007, 23), see figure 47 for its position.

During re-excavation, Andrew Birley also noted that there had been two superimposed road surfaces leading to and from Stone Fort 1’s original west gate (Birley and Blake, 2007, 23). The similarity in construction style, dimensions, and, most importantly, the identical alignment of these roads to the two successive roadways found to have run through the annexe gate in 2009, make it very difficult to believe they were not the same two roads. While this likely association obviously does not conclusively date them to the same time period, it is strongly suggestive that, even if built with a time lag between them, they were built to function together at some stage.

Given that we have conclusive evidence for at least two forts having been constructed at Vindolanda in the later second century (Birley, R., 2009, 126), it is tempting to see the similarly angled extramural annexe defences as having mirrored the two intramural building phases of the fort. South of the annexe gate, the defensive wall matches the alignment of the turf ramparts and stone fort wall excavated by Andrew Birley in 2005 (Birley and Blake, 2007, 17f). The annexe gate and the defensive wall north of it match the alignment of the *principia* of Stone Fort 1, excavated in the 1930s (Birley, E., Richmond and Stanfield, 1936, 218-225). It is plausible that the annexe saw two phases of building activity, mirroring those of the fort.

The modification of the annexe defences would also match the two phases of construction activity noted by Robin Birley as having taken place outside the walls of the fort, (2007, 11-13; and 2009, 127-129), and now known to have been within the annexe. As noted above, at some stage in the last half of the second century, a series of timber built structures within the annexe appear to have been demolished to make way for a different set of stone buildings in the same area. It is conceivable that the modification to the annexe defences was undertaken as part of the same rebuilding programme. As yet, however, there is no conclusive evidence for exactly when in the later second century this re-build took place.

Even with a relatively small amount of direct dating evidence, the stratigraphical relationship of the annexe defences having replaced the Period V fort before subsequently being replaced by the Severan fort was clear. In addition, its similarity in construction style and alignment to Stone Fort 1 and its direct association with features such as the west gate make it clear that the annexe was functioning sometime in the latter part of the second century.

A detailed interpretation of exactly who had used the annexe and for what purpose was impossible to estimate from the surviving evidence produced from excavation of its defences and is outside the scope of this excavation report. It is almost certain that such a substantial set of defences within 100metres of the fort would have been built by the military, but whether this was to accommodate additional troops, to protect supplies, or to defend some form of non-military extramural community is unclear without a serious, detailed re-assessment of the evidence found in its internal area. What is very clear is that when the annexe was built, sometime in the later part of the second century, the residents of

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*Vindolanda Research. The excavations of 2007-2012 in the *vicus* or extramural settlement (‘Area B’)*
Vindolanda had felt under sufficient threat to have erected what were a substantial set of defences. This would appear to support the theory that the time period was a particularly turbulent one within the Roman occupation of the north as outlined by Breeze and Dobson (2000, 117f) and Robin Birley (in Birley, A. and Blake, 2007, 15).

Industrial activity west of the annexe

The main focus of research between 2007 and 2012 was on the third-century *vicus* structures. However, because of the relatively thin stratigraphy on the western part of the site at Vindolanda, earlier Roman structures and associated features were encountered in places. Significant damage caused by the successive episodes of later Roman building, coupled with the limited extent of the excavation into the more deeply buried levels, meant that very fragmentary plans and understanding of these earlier phases could be gleaned. Nevertheless, the results are described below so that they can be associated with any further information gathered from future research.

It was clear from the surviving evidence that the area immediately west of the Antonine annexe wall had been used for industry at some stage in the later second century. Fragmentary evidence was found west of the annexe gate for at least one structure with a large circular pit adjacent to it. Northwest of the annexe gate, a further timber building with significant evidence for an industrial use was also identified. The position of these features in relation to the annexe defences is shown on figure 47.

40m west of the annexe gate, fragmentary features of an industrial nature were identified in an area covering approximately 210 square metres, shown on figure 56. The cobbles of the later waggon park/storage yard, see 40 above, had badly disturbed much of the area, but sections of two potential floor surfaces, two stone drains, and several pits were identified.

The floor surface (contexts V08B-56 and V08B-61) in the far north west of the area excavated had originally been made from river-washed cobbles pressed into a bed of fawn coloured clay. The cobbles
had been tightly packed together and there was an 80mm thick layer of heavily burnt material covering them, which included soot and several pieces of generic industrial waste. Seven items of material culture were found on the floor’s surface in context V08B-56 including 12120, four fragments of lead; 12134, a separate piece of lead; 12128, a copper alloy brooch; 12131, a lead stud; and 12148, a fragment of a white glass bangle. Two samian stamps, 12139 and 12145, were also recovered, but neither of which provided a clear enough reading to ascribe a production date (see Sheehan-Finn, 155).

Context V08B-61, which was exactly the same floor as V08B-56, but situated slightly further to the east, also produced seven artefacts; 12141, a crucible; 12143, a copper-alloy brooch; 12153, a flint flake; 12142, a fragment of lead; 12158, a lead stud; 12161, a lead weight; and 12171 a samian stamp. This stamp, found embedded into the cobbled surface, was of the potter Reginus ii on a Dragendorff type 18/31. Reginus’ production dates ranged between AD120-150 (see Sheehan-Finn, 153 below) indicating the cobbled floor was likely to have been laid sometime after the early second century.

At some stage, the floor had been re-surfaced, or at least partially repaired, with a small area of flagging (context V08B-51), which was visible in the northwest part of the area excavated. The flags were of buff coloured sandstone and were relatively thin at only 60mm. Four artefacts and a coin were found on top of them. However, there was a significant amount of disturbance from the later waggon park/storage area immediately above, meaning none of them were securely enough stratified that they could be associated with the floor beyond doubt. The coin, C1160, was of Claudius II (AD270), the other artefacts being 12103, a piece of lead; 12107, part of a white glass bangle; and two glass beads, 12100 and 12117.

A small section of a stone-built drain (context V08B-57) was found on the western edge of the repaired section of flooring. Measuring 270mm wide and 360mm deep, it was traced for 780mm from the western edge of the excavation trench to a point where it had been cut by the cobbling of the later waggon park/storage yard. Its fill was a mix of sooty loam and small pebbles and it did not contain any items of material culture.

Immediately to the southeast of the drain, a circular pit (context V09B-38) had been cut into the natural ground clay. At 1.85m in diameter, it was a...
substantial feature, but was relatively shallow at 660mm deep and was devoid of any ceramic evidence, or items of material culture. During investigation, it was clear that its original excavators had used some of the resulting up-cast from its construction to form a slight lip around its edge. Unfortunately, the pit’s purpose was unclear and the fill in its centre, which was a mix of loose grey clay and roughly dressed rubble blocks, seemed to represent more of an attempt to fill it in rather than part of its original function. It is possible that this backfilling was by members of the construction team building the subsequent waggon park/storage yard, who would have needed a roughly level and solid surface on which to lay their cobbled surface.

Towards the south of the area excavated, there was a greater amount of damage from the later waggon park/storage yard. This meant that there was a hiatus of 8.25m in the surviving area of flooring. However, a further area of flagging (context V08B-52) was identified 13.22m further to the south of V08B-51. The size and style of the flags was similar to those of context V08B-51, but the gap between the two areas was substantial and it seems probable that they would have been at least separate rooms, if not entirely different buildings.

This more southerly area of flooring had been covered with a thin layer of compressed fawn clay which contained a number of items of material culture. Two coins, C1179, a second-century sestertius, probably of Antoninus Pius (AD138-161) and C1225, an illegible fragment, probably of second-century date were recovered. In addition, 12119, a copper-alloy ear ring; 12122, a shale gaming counter; 12124, a ceramic spindle whorl; 12127, a lead pin; 12152, an iron blade; 12159, half of a white glass gaming counter; 12165, an iron chisel blade; and two flint flakes, 12138 and 12150 were also found on its surface.

The flagging was flanked along its northern edge by a stone-built drain (context V08B-54), which had been constructed in a slightly unusual fashion. Several courses of thin sandstone slabs, averaging 400mm long by 320mm deep, but only 50mm thick, had been laid on top of each other and bonded with clay. Exactly why it had been built this way, instead of the more typical style of two parallel rows of squared sandstone blocks, was unclear. The drain had been given a flagged base of identical stones to its sides, the resulting channel measuring 200mm wide. It had a very mixed fill of heavily burnt clay, which was of several colours including red, orange, fawn and grey and included several fragments of iron pan and a substantial amount of soot. Three items of material culture were found in the drain fill; 12108, a copper-alloy handle; 12132, an iron punch; and 12157, a ceramic gaming counter.

A circular pit, or well (context V08B-65) was found to have cut through the floor flags of V08B-52. Measuring 1.18m in diameter, it had been dug to an overall depth of 1.10m through the natural ground clay. It did not appear to have been lined and it had filled up with a combination of natural grey silt
towards its bottom, and several roughly dressed building stones towards its top. These seemed to have been thrown in at random, possibly during a deliberate effort to fill it in. There were only two items of material culture found in it; 12163, a ceramic gaming counter; and 12164, a ceramic spindle whorl.

For much of the year, there is a relatively high water table in this part of the site and, given the suspected nature of the surrounding floor as part of a workshop, or building with an industrial function, it is likely that wells or water tanks of some description would have been a necessity. It is possible that this feature may have acted in such a capacity.

The fragmentary and badly damaged features described above meant it was impossible to produce a coherent structural plan and relatively little spatial sense could be derived from the remains. Nevertheless, their positions are marked on figure 47, in case future research is able to clarify matters any further. However, the uniformly burnt nature of the floor materials identified and the significant amounts of soot, charcoal and generic industrial waste on their surfaces were strongly suggestive of industrial activity. This was further strengthened by the nature of some of the artefacts recovered from the area, such as the crucible, 12141, the iron chisel blade, 12165, the iron punch, 12132, and the numerous fragments of lead, all of which would not be out of place in an area used for industry.

The little secure dating evidence retrieved, such as coin 1179, of Antoninus Pius and the samian stamp of Reginus ii (AD120-150) indicated that this industrial activity was taking place sometime in the second century. This was before several of the features, such as the large circular pit (V09B-38) and pit (V08B-65) were deliberately demolished and the area levelled in order to receive the extensive cobbled waggon park/storage yard which formed part of the extramural vicus settlement in the early third century.

**Industrial activity northwest of the annexe**

A second area, potentially used for industrial activity in the later second century, was identified 35m northwest of the annexe gate, see figure 47. As was the case with the similar features found further south, there was significant damage by later Roman building on the same site in the third century. This meant that only a fragmentary plan and a general impression of what had been taking place in the area could be gained from the surviving remains. However, the features which had survived the attentions of later builders were very well preserved as the soil in the area was largely anaerobic.

It appeared that area had been the site of at least one potential workshop. Fragments of timber walling were found along with a clay floor and a pit, which had containing a substantial amount of material that appeared to have been intended for re-cycling.

A section of a rectangular timber sill beam was found running on a north-south alignment and was traced for a total of 1.40m before it was found to have been cut at its northern end by a nineteenth-century field drain. Made of oak, it measured 250mm wide and 250mm deep. A total of seven
rectangular mortise holes to accommodate upright posts had been cut into its upper surface at roughly 500mm intervals. There was no evidence of the upright posts within the mortise holes, which may indicate that they had been carefully removed for re-use on the building’s demolition.

Evidence was also found for a short 1.28m length of wattle and daub fence. This had run parallel to the

sill beam but only 1.10m apart. Six, circular, upright posts of birch or alder were found in situ, spaced 150mm apart, see figure 64. The partially surviving fragments of three horizontal withies of willow or hazel were also found, threaded between them. The construction style of this fence was far less substantial than the heavy oak sill beam immediately to its west. It seems likely that the sill beam represented a major constructional timber, possibly the external wall of the workshop, with the wattle fence representing an internal dividing wall. At only 1.10m wide the space is perhaps most likely to represent a corridor rather than a room.

The building had been given a clay floor, the upper surface of which lay flush with the top of the sill beam. The clay was 200mm deep and had become very compacted throughout its use forming a solid surface. An accumulation of around 120mm of heavily burnt material (context V10B-37) lay on top of the base clay, which contained several items of material culture; 14601, a blue glass bead; 14707, a bone gaming counter; 14708, a bone handle; 14709, a stone mixing palette; and L10B-23, a leather shoe. The floor’s surface also produced a coin, C2002, of Julia Domna, which indicated it had been laid sometime before AD193.

A circular hearth had been situated 650mm northeast of the wattle fence. Constructed of fawn coloured clay surrounding a flagged base comprising of small sandstone slabs and a reused roofing tile, the hearth measured 580mm in diameter. The soil around it was heavily burnt containing substantial amounts of soot, but there was no conclusive evidence to highlight if it had been used in a domestic or industrial context.

Perhaps the most notable feature of the building was a rectangular pit (context V10B-07), which had been cut into the floor on a north-south alignment. Truncated at its northern end by third-century building activity and by a modern field drain to the south, it could only be traced for a total of 2.40m. Within its surviving length, however, it contained a substantial amount of material culture, which appeared to have been dumped as refuse, or possibly, given the impression was that the building may have had an industrial function, gathered together as scrap for re-cycling.

The pit contained: 13800 and 13812, both flint flakes; 13801 and 13843, both glass beads; 13809 and 13836, both fragments of copper-alloy armour; 13839, a whetstone; 13813, 13831 and 13846, fragments of different face pots; 13841 and 13845,
both fragments of a single shale palette; 14680, half of a white glass counter; 14681, the neck of a glass bowl; 14700, part of a glass bangle. Several pieces of lead were also found including; 13806, a lead weight; 13807, a lead pin; 13805, a piece of scrap lead; 13811, a small roll of lead, 13851, two large fragments of a lead sheet; and 13882, a lead plug. Three leather shoes, L10B-52, L10B-57, and L10B-60 were also found in it along with a single piece of scrap leather, L10B-05.

Figure 64. The Antonine workshop floor, looking southwest. The oak sill beam and wattle fence are visible towards the top right of shot and the hearth is shown in the centre. The pit containing the two inscribed mirror frames is shown left of shot, beneath the ranging poles, with its eastern edge visible as a slightly lighter shade of clay.

However, the two most extraordinary items were two small, inscribed, pocket mirror frames; 13849, inscribed Q. LICINIVS TVTINVS ARELATE FACIT; and 14682, inscribed VENATOR FECIT. A detailed report on these rare artefacts is given by Anthony Birley, 167-169 below. It is difficult to imagine two such expensive and precious items, which appeared to be still in good condition, being dumped as refuse. It is possible that they were deposited as a religious offering of some form, but, along with so many other lead objects, they may equally well have been being collected together as scrap for subsequent re-use in the workshop.

A number of potentially datable objects were also found in the pit fill, but which on this occasion proved fairly unhelpful. 13804, a samian stamp on a Dragendorff type 18/31 bowl read L [-] and 13840, was another largely illegible samian stamp. Two stamped pieces of mortaria were also recovered, both by apparently illiterate potters (see Sheehan-Finn, 136 below). 13847 was a fragmentary stamp with a decorative border, while 13881 had an elaborate leaf stamp, but no lettering.

A single coin, C1954, worn, but probably of Hadrian was found giving a terminus post quem of AD117, but perhaps the best indicator of date was provided by the ceramic assemblage recovered from the pit fill. After study, Robin Birley noted that it ‘gives the impression of dumped material, around AD 200’ see appendix, 260.

It was unfortunate that such an interesting building had been so badly damaged by subsequent Roman and post-Roman building activity. There was insufficient evidence remaining to establish any coherent building plan and its few internal features were of those that could have appeared in buildings of several different functions. Equally, the collection of ceramic evidence and material culture could be interpreted in a domestic or an industrial setting. However, the heavily burnt nature of its flooring, the substantial amount of industrial waste (all fragments of undiagnostic slag), and the fact that several items of relatively high scrap value were apparently being gathered together, favour an industrial purpose. If so, it would be in keeping with other structures of a similar date found immediately to the west of the annexe wall.

**Antonine aqueduct**

The major aqueduct which had channelled water downhill from a spring in the northwest of the vicus to the military bath-house in the third century has been described in the account of third-century features, see 50, above. There was strong evidence, however, that it had had a predecessor at some stage in the later second century. As noted above, the aqueduct had been given a substantial foundation to allow it to cross the backfilled area of the Period V, Hadriamic fort’s western ditch without the risk of subsidence. In the third century this foundation had taken the form of a series of large sandstone blocks, which had been laid in two rows on which the channel stones of the aqueduct itself had been supported. However, there was substantial evidence for an earlier foundation, built in a different, but highly distinctive, style.

The earlier foundation had been built as a broad
740mm wide wall. Its two outer faces had been built using small, squared rubble blocks of soft yellow sandstone, averaging 280mm wide by 160mm high and 220mm deep. These had been bonded together with a mixture of thick purple/grey coloured clay. The core of the wall had been filled up with a large quantity of un-squared rubble and building debris, a substantial portion of which had probably been created in the course of building the wall’s outer faces.

The top of the wall followed a very gradual slope to the east to allow the water in the aqueduct above to flow downhill to its intended destination. It was notable that, on its western edge, the bottom of the wall had been stepped in at each course of masonry allowing it to follow the angle of the west edge of the Period V defensive ditch. While the wall foundations did not appear to have been cut into the natural clay beyond the west lip of the ditch, it had matched its shape very snugly. At its deepest point, above the centre of the Period V ditch, the wall had five courses of masonry. Its eastern end could not be investigated fully because it lay under the course of one of the main modern visitor footpaths around the site.

There was no ceramic or other datable evidence found in its fabric, but as it had been built into and had respected the profile of the Period V, Hadrianic ditch so closely, it had clearly post-dated it. Some of the rubble foundation of the third-century aqueduct had subsequently overlapped its top suggesting it had predated that feature. Its distinctive building style using relatively small, soft, yellow sandstone blocks was also highly distinctive of the Antonine period elsewhere at Vindolanda (Birley, R., 2009, 120; Birley and Blake, 2007, 22). It seems almost certain that the wall represented the foundations of an earlier version of the third-century aqueduct first identified by Anthony Hedley in 1832 (Hodgson, 1840, 195), and given its stratigraphical sequence and building style this was likely to have been in the latter part of the second century.

Antonine evidence inside the annexe

In the course of excavations to examine vicus building XXI during 2011, some evidence was also found for parts of two later second-century floor surfaces, beneath the northern half of the later vicus structure. The western of the two floors (contexts V11-12B and V12-12B) had been flagged and was securely sealed by the later packing clay foundation of the vicus building. Three coins were found on its surface; C2250, fragments of a probable second-century denarius; C2251, a denarius, probably of Marcus Aurelius (AD161-180); and, C2253, a second-century sestertius, perhaps of Hadrian/Pius (AD117-161). These gave a terminus post quem for the later vicus building of AD180 and their general date range suggests that the earlier floor was likely to have been in use in the later second century.

A number of items of material culture were also found on the floor; 16572, a glass bead; 16575, a copper-alloy terminal; 16578, an enamelled disk brooch; 16579, a piece of scrap lead; 16580, an unidentifiable copper-alloy artefact; 16581, a samian
The floor had been separated from a different occupation surface, immediately to the east, by a stone built drain (context V12-17B). The drain had run north-south and turned ninety degrees east towards the south of the later *vicus* building XXI. It had filled up with iron pan and contained three artefacts; 16662 and 16663, both part of a legionary tile stamp of the sixth legion, stamped LEG VI V; and 16679, a blue glass bead.

East of the drain, a separate occupation surface of orange clay had been laid (context V12-13B). This contained; C2257, a *sestertius* of Hadrian (AD125-138); C2259, a *denarius* of Septimius Severus (AD194-211); C2260, a *sestertius* of Faustina I, posthumous (AD141-161); as well as 16641, a jet bead; 16642, a small silver ring; 16646 and 16650, both copper-alloy brooches; and 16670, a copper-alloy stud.

Insufficient evidence in terms of structural details and features was identified to be able to reconstruct a plan of the buildings to which the floors had been attached. However, it is likely that the later second-century stone wall that Robin Birley described as being found running north-south ‘immediately outside the eastern wall of site XXI’ (2009, 128) formed part of the same building as the floor surface V12-13B. Also, the range of artefacts could represent buildings with a range of different uses. It was notable though, that there had clearly been structures built within the Antonine annexe on that part of the site.

Excavations directed by Andrew Birley in 2003 uncovered the greater part of what was interpreted as a metalworking workshop, immediately to the south of the Severan commander’s residence (Birley and Blake, 2005, 24-26). While the greater part of the building was excavated in 2003, a small section of its western edge could not be examined because of a modern visitor footpath. Subsequent excavation in 2009 excavated an area within 7m of that examined by Birley, but on the opposite side of the modern footpath. During the course of work, a stone-built drain (contexts V09B-41 and V09B-44) was identified, which was likely to have flanked the workshop’s western edge.

It measured 300mm wide and was 380mm deep. Its sides had been built using dressed rubble blocks of yellowish sandstone, bonded with clay. Unfortunately, it had filled up with a relatively solid mass of iron pan, which meant it was impossible to establish any deposition patterning within its fill. However, a significant amount of material culture had accumulated there including 6 coins and 13 beads. The majority of the items were domestic, but
some, such as the crucible 12682, and some of the items made from lead were industrial in nature and may well have been discarded from the workshop.

The coins recovered were; C1555, illegible; C1556, illegible; C1557, probably Trajan (AD98-117); C1587, Hadrian (AD117-138); C1588, probably Hadrian (AD117-138); and C1589, illegible. In addition, three samian stamps were found; 12676, of Iulius Numidius (production dates of AD155-200); 13739, of Genetius (production dates of AD155-190); and 13702, stamped AV[-].

The material culture included; 12656, 12690 and 12698, all copper-alloy fittings; 12657, the end of a ligula; 12658, 12665, 12666 and 12684, all fragments of lead; 12659, a decorated copper-alloy handle; 12667, a copper-alloy bell-stud; 12668, 12671, 12683, 12685 and 12687, all copper-alloy pins; 12669, a copper-alloy spatula; 12670, an iron arrow head; 12673, a lead weight; 12681, a decorative copper-alloy slide-clip; 12682, a crucible; 12686, a lead pin; 12688, a flat copper-alloy strip; 12692, a copper-alloy belt-plate; 12694, a patera or skillet handle; 12699, a copper-alloy pendant; 13708, half of a copper-alloy finger ring; 13718, a fragment of a white glass bangle; 13706, a flint flake; 13707, a stone counter; and 12660, 12672, 12674, 12675, 12689, 12691, 12693, 12697, 13700, 13701, 13712, 13717, 13778, all beads (for details, see Barbara Birley’s report on the 2007-2012 beads, pages 171-182).
Hadrianic Remains (Vindolanda Period V c.AD120-130)

Similarly to today, the landscape at Roman Vindolanda had sloped gently uphill towards the western part of the site. Because of this slope, there was a shallower accumulation of soils above the natural ground clay in the west of the site than further east. This meant there was a substantially thinner stratigraphical archaeological sequence in terms of the depth of buried remains.

Towards the east of the site, on the lower part of the slope, it had been necessary for the various Roman construction teams to import substantial quantities of turf and clay to spread over previously demolished buildings (Birley, R., 1994, 113). These capping layers had provided a relatively level and solid foundation on which the construction teams could then build again. However, they also ensured the buried demolition layers were reasonably protected from further damage by subsequent phases of building activity. Although, as Robin Birley noted, even the Hadrianic remains towards the east of the site did not have the superb fully anaerobic soils of the underlying pre-Hadrianic remains there.

In addition, the later, stone-built, structures had also

Figure 68. Plan showing the Period V fort at Vindolanda in relation to the walls of Stone Fort 2 (greyed outline). Where the course of its ditch has been proven by excavation, it has been hatched in black and an indication of the date of excavation given. Where its course is hypothetical, the ditch has been hatched in grey.
damaged their remains in places (2009, 112).

However, as the landscape rose towards the western end of the site, it appears that little effort was taken to level up the land prior to rebuilding in terms of laying down packing layers of turf or clay. Indeed, the opposite was true and the buildings situated there seem to have been far more thoroughly demolished (Blake, 2003, 47; Birley and Blake, 2005, 26; Birley and Blake, 2007, 66). Consequently, evidence for the western part of the Period V (Hadrianic) timber fort at Vindolanda examined between 2007 and 2012 was substantially less well preserved than similar levels further to the east. This was not only in terms of the depth of stratified material, but also in terms of the quality of the surviving remains.

Even so, one feature with potentially great significance for our understanding of the site during the Hadrianic period was clearly identifiable. A series of defensive features, comprising of a rampart and two potential ditches, was identified in at least two separate excavated areas, for the location of which see figure 68.

**Possible Hadrianic Defences**

It has been highlighted above how the rampart of the Antonine annexe had projected west of the annexe wall, the wall being positioned on the apex of the clay spread. This is an unusual construction feature at Vindolanda, where it was more typical for the defensive wall to be positioned flush with the outer face of the rampart (Birley and Blake, 2007, 24). There is, therefore, a possibility that the clay rampart had been reused, having originally served as the rampart of an earlier fort, most likely Vindolanda’s Period V.

During excavation to examine the Antonine annexe ditch in 2011, an underlying, and therefore earlier, ditch was also identified running broadly parallel to the clay rampart immediately to its east (Andrew Birley, pers. comm., 2013). Unfortunately, severe weather in late August 2011 meant that an extremely limited section of this earlier ditch could be examined. No dimensions were established and very little was found in its fill. However, it had clearly been cut by the ditch surrounding the Antonine annexe meaning it had pre-dated that feature. Its alignment was also identical to a second, parallel ditch found immediately to the west in 2012.

This second substantial defensive ditch was found to have run north-south at a point 12m west of the Antonine annexe wall. It had also run parallel to the clay rampart of the Antonine annexe and was traced for a distance of 16m.

It had, in turn, clearly been crossed by elements of both the third-century *vicus* foundations, such as roadway B6, and by the foundations of the Antonine aqueduct channel described above, meaning it had predated both. Unfortunately, as with the original excavation of the area in the 1930s (Birley, E., 1931, 219), there was prolonged heavy rainfall over a substantial part of the excavation season in 2012. This meant that, even with the aid of three mechanical water pumps, it was impossible to lower the exceptionally high water table enough to fully section the ditch to accurately establish its overall dimensions.

![Figure 69. The Hadrianic ditch during excavation in 2012, looking northwest. The natural ground clay into which the ditch had been cut is visible top centre. Also visible are the later vicus road, B6 (right of shot), and the later aqueduct (top).](image-url)
its western lip, meaning that, if it was even remotely symmetrical, roughly two-thirds of it would have been excavated, giving an approximate overall width of 6.6m. 920mm of its fill had survived above the natural clay, which had formed its base. Given the amount of Roman building that had subsequently taken place immediately above, it is possible that it was originally deeper than that, with the later features removing some of its uppermost fill.

These dimensions make it one of the largest defensive ditches identified at Vindolanda thus far. For example, its width of circa 6.5m can be contrasted with the 2.5m width of the Antonine annexe ditch, and the southern ditch of Period IV, which measured 3.5m wide (Blake, 2003, 29). The next largest in the fort’s sequence was the south ditch of the Severan encampment, which measured circa 5.0m wide (Birley and Blake, 2005, 22). Clearly, the Hadrianic residents had put substantial efforts into protecting at least the west side of their fort at Vindolanda, perhaps reflecting what is known to have been a relatively turbulent period on the northern frontier (Birley, A. R., 1997, 123).

The ditch contained a mixture of what appeared to have been naturally deposited layers of silt and occasional patches of discarded bracken and heather. Because its lower levels were fully anaerobic, these clumps of vegetation were well preserved and, as similar deposits from ditches elsewhere on the site have been interpreted (Birley, R., 1994, 142; Birley and Blake, 2005, 80), seem likely to represent episodes of the discard of old flooring material as refuse.

The bulk of the material found in the section of ditch examined in 2012 was contained in context V12-33B and included: 16680 and 16701, both fragments of a fine glass bowl; 16702, part of a glass perfume flask; 16737, a copper-alloy fitment; 16745, a ceramic spindle whorl; 16760, a stone ballista ball; 16761, a fragment of lead; 16762, a copper-alloy spatula/ligula; 16820, a copper-alloy finger ring; 16823, an iron hook; 16853, a flint flake; 16854, an iron bracket; 16864, a copper fitment; 16875, an iron fitting; and 16876, a lead weight.

In addition, a number of organic artefacts were found including: L2012 -1, scrap leather; L2012-2, and L2012-5, both tent panels; L2012-3, L2012-4, L2012-6 and L2012-7, all shoes; W2012-2, a wooden barrel bung; W2012-3, a wooden peg with graffito ‘VS’; and W2012-7, a piece of shaped wood.

Deposits of an identical nature were found some 35m further south in 2002 when a narrow, exploratory trench was dug in the area to assess the extent of the third-century vicus, see figure 68. At the time, they were interpreted as a re-cut of the Severan ditch or possibly a ditch defending the Antonine annexe (Blake, 2003, 41). However, extensive excavation in the adjacent areas between 2007 and 2012 has now made it clear that they are in fact more likely to represent the same ditch as that excavated in 2012, described above.

Further evidence for the ditch was identified in 2009, beneath the southwest part of the third-century vicus, see figure 68. As in 2012, inclement weather and the fact that the ditch lay beneath a working
modern field drain meant that it was impossible to fully section. Compounding the difficulty in establishing its dimensions and alignment was the fact that it had also been truncated at that point by the ditch which had defended the Antonine annexe. This meant there was some contamination of its upper fill, context V09B-66.

However, its western lip was firmly established and two contexts of its lowest fill, V09B-23 and V09B-26 were securely stratified. V06B-23 contained 13705, a samian stamp of the potter Mercator (see Sheehan-Finn 151, below) as well as: 13752, a copper-alloy key handle; 12630, a copper-alloy brooch; 12632, an intaglio of a youthful fisherman; L09B-7, L09B-8, L09B-9 and L09B-10, all shoes; and L09B-11, a piece of scrap leather. Context V09B-26 contained L09B-1, a shoe and L09B-2, a piece of scrap leather.

There appears to be a strong possibility that the rampart and two ditches were associated features. Given their significant size, the rampart being at least 4m wide and the outer ditch at approximately 6.5m wide at its top, it is difficult to envisage these as anything other than a set of fort defences.

Absolute dating for the defensive system was relatively slight in each of the excavated areas. The samian stamp of the potter Mercator found in the ditch’s bottom indicated it was likely to have been deposited there sometime after the turn of the second century.

However, the stratigraphical sequence was clearer in producing a relative date. For example, towards its northern end, the securely dated Antonine aqueduct foundation had been built across the outer ditch. Similarly, the Antonine annexe ditch had cut through it in the south of the excavated area and through the inner ditch further north. This meant the defences had almost certainly gone out of use by the mid second century.

It remains unproven, but this set of defensive features, which had clearly pre-dated the Antonine phase of occupation at the site, may represent the western defences of the Period V, Hadrianic, fort at Vindolanda. As Anthony Birley noted (2002, 72), the garrison at Vindolanda appears to have peaked in Period IV during the years leading up to the commencement of the building of Hadrian’s Wall. Writing tablet 181 suggested that a detachment of Vardullian cavalry were stationed at the site in addition to the first cohort of Tungrians, who formed the main garrison (Bowman and Thomas, 1994, 129-131). In addition, writing tablet 180 noted the presence of at least some legionary soldiers at Vindolanda during the same period (Bowman and Thomas, 1994, 121-128). With the addition of forts to the curtain Wall itself, it may well have been the case that the fort at Vindolanda was remodelled with a reduction in size in Period V to accommodate the remaining Tungrian garrison after the legionaries and Vardulli had moved on.

If correct, the implications of this theory are significant and would necessitate a change in interpretation of the Hadrianic structures found beyond the western edge of the ditch between 2002 and 2006 (Blake, 2003, 47; Birley and Blake, 2005, 61-74; Birley and Blake, 2007, 66-72). After their excavation, it was postulated that the fragmentary timber buildings of Hadrianic date were most likely to have been a mixture of potential barracks and workshops inside the fort. However, if the rampart, and ditches discussed above do represent the western defences of Period V’s fort, the structures lying further west must be reinterpreted. If indeed they were external to the fort itself, they are perhaps more likely to have formed part of an annexe of some sort, or possibly part of an extramural settlement situated just outside the western edge of the fort.

It was unfortunate that a combination of exceptionally poor weather and disturbance by later Roman features limited the opportunity to examine the Hadrianic rampart and ditches in detail between 2007 and 2012. However, given the importance of these defences in defining the western limits of the Period V fort at Vindolanda, and the implications for the structures of a similar date found beyond their western limits, they should be considered an important research priority in the future.
Vindolanda Period IV (c.AD105-120s)

Before an account is given of the Period IV remains identified at Vindolanda between 2007 and 2012, it is perhaps pertinent to give a synopsis of features associated with the same fort which have been identified in previous excavations. The positions of these features are plotted on figure 71.

Excavation under the direction of Robin Birley in the early 1990s identified the position of the fort’s south rampart and fort ditch as well as a section of its intervallum road. Perhaps most significantly, however, a substantial timber building, interpreted as a barrack, was examined in detail (Birley, R., 1994, 92-112). The anaerobic nature of the soils covering the building meant that a substantial volume of organic material had been preserved, including numerous writing tablets which illuminated in great depth life on the northern frontier in the early second century (Birley, R., 1994, 92-112; 2009, 91-112; Birley, A. R., 2002, 70-76).

During excavation of the praetorium of Stone Fort 2 in 1997, Robin Birley noted that several walls on the eastern side of the building had subsided into an earlier linear feature, which had run north-south. This was partly examined and was found to have been at least 1.4m deep and filled with whinstone boulders and clay. Its similarity to packing found in the backfilled Period I fort’s western ditch led him to note that ‘it is very likely that it represented the line of an eastern ditch of the pre-Hadrianic forts’ (Birley, Birley and Blake, 1998, 7). It is, however, equally possible that it represented the eastern ditch of any of the Period II, III, IV or V forts, and perhaps combinations of more than one period if the ditch had been maintained and reused.

This theory was strengthened in 2005 when a large defensive ditch of pre-Hadrianic date was noted as having run east-west between the west wall of Stone Fort 2 and the third-century bath-house (Birley, A., forthcoming). Then, in 2011, what was almost certainly a continuation of the same ditch system was identified as having run east-west beneath the northern part of the northwest quadrant of Stone Fort 2 (Birley, A., forthcoming). The identification of these ditches, along with negative evidence for any pre-Hadrianic structures to their north (Blake, 2003, 24-25), has allowed a reasonable estimation to made as to the position of the Period IV fort’s north, south and east defences, illustrated on figure 71.

A major ‘Reihentyp’ bath-house was identified outside the fort’s southern defences in 2000 (Birley, A., 2001, 15-34). While the structure was identified as having been built sometime in the late AD90s (Vindolanda Period II), it had continued in use throughout Periods III and IV, before being demolished by the mid second century.

In addition, several internal buildings of the fort have been identified since Robin Birley’s initial work on the barrack excavated in the early 1990s. For example, in 2000, pre-Hadrianic remains of indeterminate function were identified beneath the southwest corner of Stone Fort 2 (Blake, 2001, 13f).

In 2001-2, excavation just west of the west gate of Stone Fort 2 re-examined what had been identified as an ‘elaborately constructed’ Hadrianic timber building on its original excavation in the early 1990s (Birley, R., 1994, 125-127). After more extensive excavation, it was subsequently re-interpreted as likely to have been the praetorium of the Period IV fort (Birley, A., 2003, 18). The same excavation also examined part of another major structure, immediately to the west of the praetorium, interpreted as a schola (Birley, A., 2003, 20-40).

Excavation further west in 2003-4, just south of the Severan praetorium, produced evidence of internal roadways within the Period IV fort as well as fragmentary internal buildings, tentatively interpreted as a hospital and barracks (Birley and Blake, 2005, 26-37). However, as noted in the description of the Hadrianic remains in the same area above, demolition of these structures had been more thorough as the ground sloped uphill to the west. This meant that the remains of Period IV’s internal structures were significantly less well preserved than those found to their east in previous excavations. Therefore, given their fragmentary remains, positive interpretation of buildings was difficult (Birley and Blake, 2005, 26).

This difficulty of interpretation was even greater further west, just south of the vicus water tank XIII, where very fragmentary remains of timber-built
structures of early second-century date were identified between 2002 and 2006 (Blake 2003, 48-56; Birley and Blake, 2005, 74-77; and Birley and Blake, 2007, 53-65). While it proved impossible to offer any coherent building plan from the surviving evidence, it was notable that the buildings there seemed to have had an industrial function. This led to their interpretation as potential *fabricae*.

The main garrison of Vindolanda during Period IV is known from several writing tablets as having been Cohors I Tungrorum, known to have been milliary by that stage. However, one intriguing writing tablet from Period IV, 181, also lists a detachment of Vardullian cavalrymen as being present at the fort (Birley, A. R., 2002, 72). Similarly, tablet 180 mentions the presence of legionary soldiers, although the name of their legion and the number of men are not mentioned.

This evidence for a potentially large number of soldiers stationed at the fort is backed up by the large spatial area in which structures of Trajanic/early Hadrianic date have been found, see figure 71. It has now been established that the Period IV fort measured circa 147m between its north and south defences and evidence for its internal buildings has been identified for at least 239m westwards from its eastern edge. This gives the fort an internal area of at least 3.8 hectares, which was significantly larger than other forts at the site of both earlier and later date. For example, its immediate predecessor at Vindolanda, Period III, which was garrisoned by cohors VIII Batavorum, seems to have covered circa 2.25 hectares. Its immediate successor, Period V, whose garrison is as yet unattested, covered circa 2.43 hectares. Its significantly larger size than many of the forts established on Hadrian’s Wall a few years later is shown in figure 72.

The most obvious explanation for this peaking in garrison size in the second decade of the second century was the imminent construction of Hadrian’s Wall. The existing Stanegate forts, such as Vindolanda, almost certainly took on significant importance as supply depots and industrial centres in the years leading up to the Wall’s construction. The increased garrison size at Vindolanda during that time is certainly evidence for a greater concentration of soldiers in the area and the numerous *fabricae* identified may give a clue as to their role. Such a model has perhaps been given

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*Figure 71. Plan showing the Period IV fort at Vindolanda (red) in relation to the remains of Stone Fort 2, visible on the site today. Where the western boundary of Period IV is unknown, it has been marked in pink.*
additional weight by Grafstaal’s recent convincing argument that Hadrian’s decision to construct the Wall was taken in AD119 rather than AD122 (Grafstaal, 2012, 123-184). The difference may be relatively slight, but it would allow for Vindolanda’s Period IV fort to have acted as a supply base and workshop centre in the years immediately prior to Wall building before being rebuilt, to a smaller size, in Period V. Perhaps this rebuild was in line with the wider scheme of works of adding forts to the Wall itself in the AD120s.

A similar structural sequence, but which, importantly, has been dated as taking place slightly later, has also been noted at Carlisle. The second timber fort there, reconstructed *circa* AD105, was extensively remodelled at some stage in Hadrian’s reign. The barracks in the southern part of the fort were demolished and replaced with new buildings, several of which had clearly had an industrial function (Zant, 2009, 453).

Zant suggests the fort at Carlisle ‘may have become, in part at least, less a base for a regular military unit, than a works and maintenance depot, manned by a relatively small number of specialist personnel’ (2009, 454). He notes the likely catalyst for this change would logically be the commencement of the construction of Hadrian’s Wall and highlights the likely date, based on the available ceramic evidence, as ‘almost certainly’ during the AD120s (Zant, 2009, 453). However, if Grafstaal’s arguments are accepted for work starting on Hadrian’s Wall in *circa* AD120, perhaps the remodelling at Carlisle may have taken

<table>
<thead>
<tr>
<th>Fort</th>
<th>Area (Hectares)</th>
<th>Garrison under Hadrian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wallsend</td>
<td>1.66</td>
<td>cohors quingenaria equitata (?)</td>
</tr>
<tr>
<td>Newcastle-upon-Tyne</td>
<td>0.640?</td>
<td>?</td>
</tr>
<tr>
<td>Benwell</td>
<td>2.06</td>
<td><em>ala quingenaria</em> (?)</td>
</tr>
<tr>
<td>Rudchester</td>
<td>1.8</td>
<td>cohors quingenaria equitata (?)</td>
</tr>
<tr>
<td>Halton Chesters</td>
<td>1.74</td>
<td>cohors quingenaria equitata (?)</td>
</tr>
<tr>
<td>Chester</td>
<td>2.32</td>
<td><em>ala Augusta ob virtuem appellata</em></td>
</tr>
<tr>
<td>Carrawburgh</td>
<td>1.6</td>
<td>cohors I Aquitanorum</td>
</tr>
<tr>
<td>Housesteads</td>
<td>2.02</td>
<td>cohors milliaria peditata</td>
</tr>
<tr>
<td>Great Chesters</td>
<td>1.2</td>
<td>cohors VI Nerviorum</td>
</tr>
<tr>
<td>Carvoran</td>
<td>1.65</td>
<td>cohors I Hamiorum</td>
</tr>
<tr>
<td>Birdoswald</td>
<td>2.14</td>
<td>cohors quingenaria equitata (?)</td>
</tr>
<tr>
<td>Castlesteads</td>
<td>1.5</td>
<td>cohors IV Gallorum equitata (?)</td>
</tr>
<tr>
<td>Stanwix</td>
<td>3.96</td>
<td><em>ala Petriana</em></td>
</tr>
<tr>
<td>Burgh-by-Sands</td>
<td>2.04</td>
<td>cohors quingenaria equitata/milliaria peditata (?)</td>
</tr>
<tr>
<td>Drumburgh</td>
<td>0.8</td>
<td>?</td>
</tr>
<tr>
<td>Bowness-on-Solway</td>
<td>2.31</td>
<td>cohors milliaria equitata (?)</td>
</tr>
</tbody>
</table>

Figure 72. Table showing the sizes of forts on Hadrian’s Wall and their garrison, with information drawn from Taylor 2000 and Breeze 2006.
place a few years earlier than recognised. The difficulties of establishing such a tightly dated sequence based predominantly on ceramic evidence, and specifically the absence of black burnished ware fabric 1 (Zant, 2009, 201), are obvious. However, if it can be accepted that the remodelling of the fort at Carlisle in period 4B may have taken place slightly earlier, in the later years of the second decade of the second century, the changes there would mirror activities at Vindolanda and perhaps better fit with Grafstaal’s revised dating for the commencement of Wall building.

As noted above, a relatively shallow depth of soil had covered the western part of the site at Vindolanda, beneath the third-century *vicus*. This meant that successive episodes of Roman building, coupled with extensive post-Roman agricultural activity, had substantially damaged the underlying pre-Hadrianic remains examined in the area between 2007 and 2012. Unfortunately, similar to the features of the same date examined between 2002 and 2006 in the surrounding area, very little structural sense could be made of the pre-Hadrianic remains, unless they had been deeply cut into the natural ground clay. The following represents an account of the features which could be identified, and which have been described and planned for the record, but also in the hope that any future excavation of ground in the immediate area may provide better context and allow a more thorough understanding of them.

### Period IV North Ditch

In 2012, a 10.5m long section of the Period IV fort’s northern ditch was examined in an area immediately north of the third-century *vicus* water tank XIII and well XII. The ditch had run in an east-west direction and there was also evidence of it having been re-cut at some stage.

The original ditch had been cut directly into the natural yellow ground clay and had a ‘U’ shaped profile. However, given the extremely wet nature of the soils in that part of the site, it is likely that it originally had a classic ‘V’ shaped profile and that subsequent subsidence took place when the clay sides went beyond their plastic limit. The amount of re-deposited clay found in the bottom of the ditch provided additional evidence for this process having taken place.

The ditch measured 3.25m wide across its top and was 1.40m deep. Its fill (context V12-106B) was almost entirely made up of successive thin deposits of fine grey silt and yellow sand. This was suggestive that the ditch had been allowed to silt up naturally, although a 560mm deep capping layer of grey clay had also been added to its top at some stage. The silt contained relatively little discarded material culture, but four artefacts and six items of leather were recovered. These were: 16909, a copper-alloy ring; 16921, a whetstone; 16926, a copper-alloy pin (possibly from a large buckle); 16928, an iron fitting; L2012-16, L2012-17, L2012-18, L2012-22 and L2012-23 all shoes; and L2012-61, a piece of scrap leather.

Two pieces of sculpted stone had also been discarded into the ditch. A rectangular, moulded stone, possibly once a painted or unfinished altar, was found in the bottom of the ditch along with a roughly cylindrical stone, which may have been part of a column or a hypocaust pillar.

However, the most significant find was the upper right-hand part of a buff sandstone dedication slab by the First Cohort of Tungrians to an otherwise unattested goddess named Ahvardva. It was found lying face down in the uppermost layer of silt at the northern lip of the ditch. A detailed discussion of the dedication and its archaeological provenance has

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*Figure 73. The Period IV north ditch, looking west. The ditch appeared to have had a ‘U’ shaped profile, but a substantial amount of this was likely due to subsequent subsidence of its natural clay sides.*
been given by Birley, A. R., Birley, A., and de Bernardo Stempel (2013, 287-300). A different expansion of the missing part of the text is offered by Tomlin, who argues that the shape of the panel was circular rather than oval, allowing him to postulate a longer missing part and to infer that the dedication was made by the prefect (Tomlin, 2013, 384-385). For a summary cf Anthony Birley, below, page 169.

As shown by Birley, Birley and de Bernardo Stempel, Ahvardva was a water goddess. The derivation of her name from the Germanic ahva, ‘water’ and Celtic ardva, ‘high’ or ‘sublime’, is very appropriate, given that the stone was found near the top of a hillside overlooking the main site. The dedication would not be out of place as having originally been part of the Romano-Celtic temple, CXXXI, or the springhead and its associated water tank, CXXX, both of which lay with 25m of Period IV fort’s northern ditch.

At some stage, the ditch had been re-cut with the second phase being substantially smaller than the original. The secondary cut measured 1.75m across its top and was 680mm deep. It had been cut into the southern half of the original ditch and had filled up with a mix of dark brown, slightly organic material and grey clay (context V12-101B). This fill contained two coins: C2336, a sestertius of Hadrian (AD117-138) and C2337, a sestertius of Trajan (AD103-111); as well as 16900, a large fragment of lead-filled copper-alloy; 16929, a jet cylinder; and 16935, a whetstone.
Lying beneath the western edge of the third-century vicus, evidence was found for what was likely to have been several timber-built structures, possibly representing successive construction phases, which were all early second century in date. A significant amount of burning on the surviving sections of several of their floors, suggested that they had either been deliberately burnt down, or that they may have had an industrial function. However, successive episodes of later second and third-century Roman building, followed by post-Roman agriculture, had damaged their remains to the point that only fragments of their structural plan could be identified. The limited amount of information gained, along with plan drawings, is presented below in anticipation that any future research in adjacent areas may be able to provide a more thorough understanding of them.

It has already been noted that a small amount of evidence for a timber building was found beneath the southwest corner of the Severan ditch and the Antonine annexe, page 74. The Severan ditch had removed the vast majority of evidence of the structure in the eastern part of the area excavated, but beneath the Antonine annexe rampart, three square oak posts and a section of oak boarded wall were identified in situ. The posts were consistent in their dimensions at 120mm by 120mm. The construction style was a classic example of the type of oak boarded walls found in several of the Period IV fort’s internal buildings elsewhere on the site (Birley, R., 1994, 111; Birley, R., 2009, 102). However, in this instance, all that can be said for certain about their date was that they had preceded the Antonine annexe defences.

More evidence was found for timber buildings of pre-Hadrianic date in an area lying beneath third-century vicus structure CXXIX. It was clear that at least two phases of building had taken place there prior to the construction of CXXIX, but it was impossible to establish a plan of them or confidently ascribe a particular function to them.

Figure 77. The three square posts underlying the Antonine annexe defences (the rampart of which can be seen, left) and Severan ditch (towards top centre). The photo has been taken looking north.

Figure 78. Plan showing the 1st phase of the pre-Hadrianic timber building in the vicinity of the later, third-century vicus structure CXXIX (marked in grey) and the nineteenth/twentieth-century field drains (marked in magenta).
The first phase of building had used roughly square oak posts, measuring 160mm by 160mm, which had been spaced roughly 1m apart. Only two walls of the structure could be identified, each of which had run perpendicular to each other forming a ‘T’ junction. This suggested that the building had been aligned northwest-southeast and that one of the walls was likely to have formed an internal room division.

A small amount of flooring had been preserved in situ immediately to the southeast of the intersection of the two walls, which included contexts V10B-43, V10B-56 and V10B-46, see figure 78.

Context V10B-43 was composed of an organic layer of sooty, laminated bracken and heather flooring, which was 320mm thick. It contained a number of artefacts, including several items of leather and wood. The non-organic artefacts included: 14614, a copper-alloy brooch pin; 14625, the rim of a fine glass vessel; 14631, a fragment from a melon bead; 14632, the greater part of a large, grey, three-handed face-pot; 14677, a copper-alloy fitting; 14687, a small lead bar; 14691, a graffito on a sherd of Dr 31, B […] 14693, an iron pin; 14698, a samian stamp of Flavius Germanus (AD85-120); 14704, a copper-alloy spoon (complete); 14705, a joiner’s dog; and 14706, a complete iron stylus pen. The leather included: L10B-48, L10B-53, L10B-54, L10B-55 and L10B-61, all shoes; L10B-59, a child’s shoe; and L10B-56, a piece of scrap leather. The wooden objects found were: W10B-17 and W10B-20, both boxwood combs; W10B-22 and W10B-23, both bungs; W10B-19, a handle; W10B-21, a wedge; W10B-24, a fragment from a box; and W10B-10, a miscellaneous shaped piece of wood.

This range of material would fit the discard pattern of a typical domestic dwelling and the lack of militaria was notable. The boxwood comb, W10B-17, with its inlaid panel depicting a soldier, or possibly a god, was a particularly fine example, see figure 79.
Flanking the east side of context V10B-43, a narrow gravel path had been laid. This could equally well have been an internal feature, such as a corridor, in the same structure as floor V10B-43, or an external path or corridor outside the building. The amount of disturbance from a nineteenth/twentieth-century field drain made it impossible to tell. The river-washed gravel making up its fabric (V10B-56) contained: 14679, a samian stamp of the potter Patricius (AD65-90); and 14683, a green glass bead. The samian stamp indicated that path itself was likely to have been laid sometime after the later part of the first century. Above the path, a thin accumulation of soil (context V10B-46) contained: 14623, a samian stamp of Tauricus (Tauricius) (AD150-180) and 14624, a copper-alloy strip.

Another patch of flooring, likely to have been from the same building, was found intact just to the southeast. It was only preserved in a small, circa 2 square metre area (context V10B-36), and was made of a similar lamination of bracken and heather to V10B-43. Only a limited number of artefacts were recovered from the surface. These were: 14633, a decorated iron pin; 14647, the spout from a small ceramic vessel; 14660, a graffito on a sherd of amphora; L10B-32, a leather off-cut; and T10B-01, a fragment of an ink writing tablet.

Around 8m to the south of V10B-36, two further areas of similar flooring material, (contexts V10B-25 and V10B-38) were identified. The absence of any associated structural evidence made it impossible to prove beyond doubt they had been part of the same building as the flooring described above, but their fabric of laminated bracken and heather was very similar. Unfortunately, the waterlogged conditions during excavation made exact identification of the complicated interconnecting soils very difficult. Consequently, some of the items of material culture recovered from V10B-25 and V10B-38 may have been slightly contaminated by later second-century features which had truncated them.

However, for the record, V10B-25 included, C2000 and C2001, two coins, both of Trajan (AD98-117); 13865 and 13896, both copper-alloy brooches; 13867, an iron file; 13898, an open, iron ink pen nib; 13899, a shale loom weight; 14603, a mirror fragment; 14604, a samian stamp of Albucius ii (AD145-175); 14605, a copper-alloy stud; L10B-25, a piece of scrap leather; and W10B-07, a fragment of shaped wood.

Context V10B-38 contained: 14608 an amphora stamp of L. A( ) F(lacci) P(ortus) (AD162-192); 14613, a bone gaming counter; 14692, an iron stylus pen; L10B-18, L10B-21 and L10B22, all shoes; and W10B-08, a fragment of shaped wood.

The second phase of building in the vicinity of vicus structure CXXIX had been built directly over the top of the demolished remains of the squared posts and flooring of context V10B-43. Four timber fences were found, three of which had been aligned northwest-southeast with the fourth running northeast-southwest, see figure 80. All four fences had built the same way using small, circular birch posts of around 50mm diameter, which had been driven directly into the natural ground clay. There were traces of horizontal wattle withies in places, but for the majority of the area excavated all that remained were shallow post holes in the ground clay.

An area of flooring material associated with these fences was also identified (context V10B-51). Consisting of a thin layer of mixed clay around 250mm thick, it contained: 14669, an iron bar; 14686, a samian stamp of Vitalis ii (AD70-100); 14688, a mortarium stamp of Matugenus (AD80-110); L10B-58, a shoe; and W10B-18, a barrel lid. Further evidence was found for what appeared to have been pre-Hadrianic or Hadrianic timber buildings in the area beneath vicus structure CXXVI, see figure 82. Again, disturbance from later Roman building and post-Roman agriculture meant that very little could be made of their structural plan, other than the fact that the buildings had a northeast-southwest alignment. However, a record of contextual information attributed to them, along with lists of their associated artefacts, is offered here in the hope that it can support the results of any future work in the immediate area.

Immediately north of CXXVI, three contexts, V07B-2, V07B-7 and V07B-85, appeared to have formed part of a single floor surface. A relatively thin, 200mm, clay capping layer had been placed on top of the drainage ditch/aqueduct channel V07B-19 and V07B-20 (for details of which see page 103 below) to act as a base for the floor itself. The flooring was consistent across all three contexts, consisting of heavily burnt loam and orange clay including a substantial volume of soot.

Context V07B-2 contained: C718, a dupondius of...
Hadrian (AD117-138); C801, a denarius of Hadrian (AD117-138); 10766, 10792, 10866 and 10871, all fragments of lead; 10767, a copper-alloy disc brooch (complete); 10768, a blue glass bead; 10769, an enamelled copper-alloy stud; 10775, a graffito on a Dr 18/31 samian sherd, BA[-]; and 10870, a samian stamp of Cinnamus ii (AD135-180).

Slightly to the east, context V07B-7 contained; C804, an illegible first/second-century As; 10777, a copper-alloy stud; 10778, a ceramic spindle whorl; 10805, a mortarium stamp of Coertinus (AD140-200); 10867, 10881, 10885 and 10888, all fragments of lead; 10868, a mortarium stamp of Anaus (AD120-160); 10875, a samian stamp [-]TVS; 10876, a lead nail or tack; 10879, three-quarters of a large lead disc; 10880, a white glass gaming counter; 10883, a glass melon bead; and 10887, a copper-alloy brooch.

Context V07B-85 did not contain any items of material culture.

Directly below the floor of vicus building CXXVI, but above the posts of the substantial timber building described on page 116f, below, lay a thin lens of heavily burnt material (context V07B 12), which was very similar to contexts V07B-2, V07B-7 and V07B-85. It was almost certainly once part of the same flooring and contained six coins. These were found scattered, possibly as a result of...
disturbance during the subsequent erection of *vicus* site CXXVI, but they may originally have been deposited as a small hoard. They included: C719, an *As* of Trajan (AD112-114); C721, an *As* of Domitian (AD87); C722, an *As* of Hadrian (AD117-138), C723, an illegible first/second-century *As*; C724, a *dupondius*, possibly of Domitian (AD81-96); and C725, an illegible Flavian *As* (AD69-96).

Just to the east of V07B-12, two other contexts, V07B-49 and V07B-50, were examined, which were also highly likely to have formed part of the same flooring.

V07B-49 contained 10882, half a blue glass melon bead, but V07B-50 did not contain any material culture.

A series of post-holes was found adjacent to context V07B-49, which measured around 50mm in diameter and had been spaced an average of 300mm apart. They had been driven directly into the natural orange ground clay and formed a right angle, perhaps suggesting they had once been the corner of a building.

The evidence was highly fragmented and badly disturbed, but the post-holes lined up exactly with other timber buildings discovered just to the north in 2002 (Blake, 2003, 48-56) and to the northwest in 2004 (Birley and Blake, 2005, 74-77). Similarly, the heavily burnt flooring may indicate an industrial use, which would also be consistent with the better preserved evidence from other buildings in the same general area identified by previous excavations.
Approximately 8m to the south, evidence was identified for what was likely to have been a similar type of floor surface, but from a different building. Contexts V07B-10, V07B-13, V07B-24 and V07B-28 formed the northernmost part of this floor and contexts V07B-36, V07B-42 and V07B-72 formed the southernmost excavated part.

Context V07B-10 was a lens of sooty loam, 160mm thick, which contained C720, an As of Claudius I (AD41-54). Immediately adjacent to the south was context V07B-13. This was exactly the same in terms of content and depth and contained 10776, a copper-alloy brooch. Context V07B-24 was found slightly further south and, although it was broadly similar in content, showed evidence of possible re-deposition. It is very likely that it had formed part of the same floor surface as V07B-10 and V07B-13 and the re-deposition may have been caused when drainage ditch V07B-46 was cut immediately to the west, see 103. Context V07B-24 contained: 10791, a samian stamp and graffiti (illegible); 10796 and 10801, both black glass gaming counters; and 10813, a fragment of lead.

Underlying V07B-10, V07B-13 and V07B-24 was a thick layer of packing clay (context V07B-28). This was made up of light grey, silty clay, which was highly mixed with several sooty inclusions. It appeared to have formed a base on top of which the burnt material described above had accumulated. It contained C755, an As of Vespasian (AD69-71); 10797, a fragment of copper-alloy; and 10798, a fragment of lead.

Detached from the surfaces described above, another patch of what was likely to have been the floor of an early second-century timber building was found just to the south. Made up of contexts V07B-36, V07B-42 and V07B-72, it was, again, heavily burnt and contained a substantial amount of iron pan. Although created by a natural process, the high iron content needed for this process to occur may have been created by the building potentially having been used as an industrial workshop.

Context V07B-36 contained C750, a denarius of Marcus Antonius (32-31BC); 10809, a fragment of lead; 10811, a copper-alloy strap end; 10838, an amphora stamp S(exi) Anni R(ufi,-ufini) (ex figlinis) Gr(umensibus?) (mid second century AD); 10839, two fragments of possible head pot decoration; 10842, a samian stamp [ANT .F (NT ligatured)]; 10847, a mortarium stamp of Docilis 3 (AD110-160); and 10886, a samian stamp of Marcellinus (AD130-160).

Forming part of the same floor, but slightly further south, context V07B-72 was also heavily burnt and contained: C792, a dupondius of Trajan (AD98-117) and 10862, a copper-alloy handle, which was large enough to have been used as part of a bucket.

Immediately to the south, context V07B-42 had formed an underlying packing layer of clay for context V07B-36. It contained: C754, a dupondius of Trajan (AD103-111); 10812, an oyster pick/medical instrument; 10821, a sherd of decorated glass; and 10822, a copper-alloy brooch pin.
Several powerful freshwater springs are situated at the western end of the site at Vindolanda and these had been tapped by the successive Roman residents since at least the early second century. Indeed, such a prolific source of water may well have been a significant consideration by the original planners of the fort in addition to the perhaps more obvious strategic and bureaucratic factors such as defensive position, distance from other forts and supply infrastructure.

In 2005, a shallow ‘V’ shaped ditch, suspected to have been for conveying water, was found running southwest beneath several timber buildings of Hadrianic date from an unknown point somewhere towards the western edge of the site (Birley and Blake, 2007, 53-54). The same ditch was also identified as having run southwest, beneath what was interpreted as a barrack building in 2003. Because of the highly anaerobic soil conditions there, a substantial timber water pipe was discovered running down its centre (Birley and Blake, 2005, 30-32). The pipe itself had been made from sections of alder and, with a bore of 50-60mm, was capable of conveying a substantial volume of water. Its subterranean nature meant it would not have been visible to the residents it served and the fact that it was still in working order after close to two millennia demonstrated a feat of fine Roman engineering.

That the springs at the west of the site had continued to supply fresh water to the site by the third century was evidenced by a stone well, site XII and a water tank, site XIII, which were originally excavated in 1914 before being re-excavated by Robin Birley in 1968 (Birley, R., 1977a, 65). At least two stone channels led water away from them towards the main part of the vicus further east.

Another major spring with an associated water tank, site CXXX, and aqueduct, which was situated just to the north, was discovered in 2012 and has been described in the account of the Antonine and third-century vicus remains above. It appeared to have been responsible for supplying the bath-house just downhill to the east.

It seems clear that throughout the Roman occupation of the site its various residents had made good use of such a valuable resource. Water had been directed from the springs near the hilltop at the northwest of the site to areas and buildings some distance further east by a variety of conduits including open ditches, stone aqueducts and timber pipes. At least some of these timber pipes also appear to have been subterranean.

However, the volume and force of water from these springs at the western part of Vindolanda was such that excess water may also have posed a significant drainage problem. Over the last century of archaeological investigation in the immediate area, a number of small channels and ditches have been noted as having been cut into the natural ground.

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**Figure 84.** Location plan of the drainage ditches/channels found between 2007 and 2012 in relation to later, third-century vicus structures.
Vindolanda Research. The excavations of 2007-2012 in the vicus or extramural settlement (‘Area B’)

clay, for example those identified by Eric Birley beneath the stone aqueduct leading from water tank CXXX (1932, 216-221). Most were too small to have been defensive ditches, and they show little spatial evidence of having been used as boundary markers. Given their close proximity to several natural springs, they seem most likely to represent successive efforts to drain excess water from the area over a significant time period.

Several of these small ditches were discovered during the course of work beneath the third-century vicus between 2007 and 2012. Their positions are marked on figure 84.

In the area underlying the third-century vicus, between the aqueduct and the northern edge of site XI, several of the ditches originally examined by Eric Birley in the 1930s (Birley, E., 1932, 217-221) were re-examined and traced for a further 7m to the south.

Ditch V12-90B, see figure 85, measured 1.53m across its top and 600mm across its bottom. It had a shallow ‘U’ shaped profile which was consistent throughout its length. It had been cut directly into the natural orange ground clay and had a homogeneous fill of mid brown, organic mud with thin bands of silt in its bottom 120mm. It contained 16856, a copper-alloy needle; L2012-11, a shoe; and WT2012-2, a fragment of stylus tablet. It contained 16856, a copper-alloy needle; L2012-11, a shoe; and WT2012-2, a fragment of stylus tablet. It had come to a confluence with ditch V12-44B immediately to the west of the surviving section of third-century aqueduct, but its top lay around 600mm beneath the aqueduct foundation. As the vast majority of the ditches had previously been examined by Eric Birley in 1931, there was consequently no surviving evidence for the stratigraphical relationship between the two ditches at this confluence.

Ditch V12-44B had again been thoroughly explored by Eric Birley in the 1930s, but some additional details can be given to the description given in his original reports (Birley, E., 1931, 202-208; 1932, 217-221). As he noted, it had a steep sided ‘V’ shaped profile, which had survived to an overall depth of 690mm. Overall, it had measured 1.10m wide across its top and there had been a square ‘cleaning slot’ in its base, which measured 360mm wide and 380mm deep. It had run in a north-south direction to a point 2.80m south of the aqueduct channel, where it began to turn northeast and formed a confluence with ditch V12-90B. It had filled up with mid-grey coloured clay and there were a substantial number of dolerite boulders in its cleaning slot. However, it was unclear if these had formed a backfill during the Roman period or when the trench was backfilled in the 1930s.

Also of note were a number of small timber posts on the eastern lip of the ditch. These were only 30-60mm in diameter, which would have made them extremely small for structural posts and it is possible they represent the tips of bushes or small trees which were growing on the edge of the ditch.

Only two items were found in the unexcavated portion of the ditch’s fill. These were 16718, a flint flake and a horse’s skull, which seemed to have been deliberately placed in the bottom of the cleaning slot, facing south. The reason for this placement was unclear, but it potentially could have been as some form of religious offering.

Ditch V12-43B had run in a north-south direction, 800mm east of V12-44B. Notably, it had cut through ditch V12-44B at its northern end meaning it must have post-dated V12-44B, but it had in turn been cut by channel V12-56B and therefore must have pre-dated that feature. The ditch was 630mm wide across its top and 480mm wide across its bottom. At only 240m deep, it was relatively shallow in comparison to several of the similar features in the immediate area. It had filled up with an accumulation of highly organic material, including

Figure 85. The series of drainage ditches and channels between site XI and the third-century aqueduct, looking south. The confluence of ditches V12-90B and V12-44B can be seen in the foreground.
several twigs and sticks, which had gathered in its bottom. It had already been cleared north of the point where it had been cut by V12-56B by Eric Birley in the 1930s. However, its fill was in situ south of that point and contained a number of items of material culture including: C2280, a dupondius of Antoninus Pius (AD153-154); 16751, a copper-alloy fitment; 16754, a tripod or quadruped vessel in light coloured, carinated fawn-ware, of which approximately half of the bowl had been deposited; 16763, a copper-alloy finger ring; and 16766, a joiner’s dog.

Ditch V12-57B appeared to come to a roughly semi-circular terminus at its northern end. It had run in a southerly direction from that point and appeared to have run into the east-west running ditch V12-103B. It was 1.74m wide across its top and 560mm wide across its base. It had survived to a depth of 430mm. Its fill was a mixture of up-cast clay, small stones and mid-grey coloured clay. Three items of material culture were deposited in its fill: 16757, a black glass gaming counter; 16767, a copper-alloy brooch; and 16932, a copper-alloy ring.

Ditches V12-44B, V12-43B and V12-57B all emptied into what appeared to have been a slightly larger ditch V12-103/V12-104B. This had run east-west and it was only possible to trace its northern edge during excavation because of the high inflow of water during an exceptionally wet summer.

The most easterly of the ditches in the area was V12-53B, which had, again, run in a north-south direction. Its northern end, where it had split into two smaller channels had been thoroughly explored by Eric Birley in the 1930s. However, it was intact towards its southern end where it had clearly cut channel V12-104B, meaning that it must have been dug relatively late in the sequence of channels. Its width varied along its length between 920mm and 1.20m and it was 580mm deep. It had filled up with fine, light grey silt and small stones. Only one object was found it the surviving portion of its fill, 16746, a fragment of lead.

V12-56B was a smaller channel which had run east-west across the earlier ditches noted above. Again, it had a shallow ‘U’ shaped profile, but measured 970mm across its top and was 400mm deep. It had filled up with numerous very thin bands of sandy, grey silt. These seemed to represent natural deposition episodes, although the period of time in which they had accumulated was impossible to

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Figure 86. Detailed plan of the drainage channels and ditches between vicus site XI and the third-century aqueduct channel. The blue circles represent natural freshwater springs. The greyed-out remains represent the Period IV roundhouse and associated structures which immediately pre-dated the drainage ditches.
ascertain. The silt contained a single artefact, which was 16818, an illiterate mortarium stamp. The channel had clearly cut both ditches V12-44B and V12-43B, meaning it was later in date than both of them. Given that V12-43B contained a dupondius of Antoninus Pius, it must have been cut sometime after AD153.

All the ditches and channels described appear to have been dug as drainage channels to direct excess water away from the numerous small freshwater springs which erupt from the natural ground clay in the immediate area, see figure 86. However, it was unclear during excavation where they had led to. Their stratigraphic relationship was very clear. They had overlain the roundhouse and its associated structures, which had been in use in the early second century and abandoned by the time the western ditch of the Period V fort was cut circa the AD120s, before being covered in turn by the foundation stones of the Antonine aqueduct. The date range of the ceramic material they produced in the 1930s (Birley, E., 1931, 204; 1932, 218-221), coupled with the coin of Antoninus Pius, c.2280, suggests they were dug and in operation between the early and mid second century.

A similar system of drainage ditches and potential water channels was found during excavations in 2010. They were located beneath the western part of the third-century vicus between sites CXXVI and CXXIX, see figure 87.

One of the ditches was a continuation of a channel first identified in 2003 (Birley and Blake, 2005, 75-76). It was identified then as having run eastwards from an unknown source, before passing beneath the southern edge of the third-century vicus industrial workshops CXXI, CXXII and CXXIII. In 2007 it was traced running past the northern edge of vicus site CXXVI, before turning 90 degrees south and forming a confluence with a second, similar ditch, which originated just southeast of vicus site CXXVI.

Averaging 1.2m wide across its top and 480mm deep, it was broadly similar in dimensions to the section of same ditch found further west in 2003. It had filled up with a mixture of loose, fine grey silt.
and dressed rubble blocks. These blocks may well have been deposited in the silt on the demolition, or collapse of the later *vicus* structures in the immediate area, such as CXXVI.

As the ditch ran past the northern edge of site CXXVI, its lower fill (context V07B-20) contained: C805, an illegible first/second-century As and 10873, a *graffito* on an amphora rim. Its upper fill (context V07B-19) contained 10784, 10786, 10787, 10794, and 10835 all fragments of lead. At a point just east of the northeast edge of site CXXVI, where the ditch turned south, an *intaglio*, 10810, probably depicting Mars, was found near its surface in context V07B-45, see Greene, below, page 188. In context V07B-21, which was essentially a continuation of V07B-45, but slightly further south, two mortarium stamps were found: 10789, was a stamp of Austinus (Hadrianic/Antonine) and 10802 was of Sullon(us,-ius,-iacus) (AD100-140).

Slightly further south, at a point just before the ditch’s confluence with V07B-57, it had been cut slightly deeper into the natural ground clay. Consequently, a greater depth of its fill had been preserved and the deposits were anaerobic. Context V07B-46 contained: 10814 and 10815, both flint flakes; 10816, half a melon bead; 10817, a fragment of lead, 10844, a potential *titulus pictus* on amphora; 10850, a copper plug; and 10893, a flint flake. In addition, several organic objects were found in context V07B-46 including: L07B-2, a shoe sole; L07B-3, part of a tent panel; L07B-4, a shoe; L07B-5, a piece of scrap leather; W07B-1, a wooden handle; and T07B-1, a fragment of stylus tablet.

Just to the south of V07B-46, there was no difference in fill between the main ditch (context V07B-79) and
that of the smaller channel which had joined it from the west (contexts V07B-43 and V07B-17). At the point of confluence between the two, the fill of each continued to be of fine grey silt, which had apparently been deposited naturally. Context V07B-79 contained: 10865, a stone sling shot; 10892, a graffiti on a sherd of samian; L07B-15, L07B-16 and L07B-20 all pieces of scrap leather; L07B-17, L07B-18 and L07B-19 all shoes; and W07B-3, a wooden peg.

The subsidiary ditch started at a point 1.6m south of mausoleum CXXVI. Its head was nothing more than a slight depression in the natural ground clay. This perhaps indicated that both had been used as drainage ditches rather than a freshwater conduit as there was no evidence of a spring in the immediate locality. It measured 2.10m across its head, before narrowing to around 1m wide and 480mm deep. It had filled up with fine grey silt in a similar fashion to the main ditch immediately to the east.

The top of the subsidiary ditch (context V07-43) did not contain any material culture, but the lower part of its fill contained several artefacts. Context V07-17, towards its northern end, contained 10781, a fragment of lead and L07B-1, a shoe sole. Context V07B-57, towards its southern end and the confluence with the main ditch, contained: L07B-6, L07B-7, L07B-9, L07B-11 and L07B-12 all shoes; L07B-8, a fragment of tent; and L07B-10, L07B-13 and L07B-14, all pieces of scrap leather.

A separate and later drainage ditch had run in a southerly direction just to the west of the channels described above, see figures 87 and 88. Again, it had run from an unknown point somewhere to the north, but a small subsidiary channel (context V07B-67) had fed into it from the west. This smaller channel had begun as a small depression in the natural ground clay in a similar fashion to V07B-43, just to the east. It measured 870mm across its top and was relatively shallow at 400mm. It had filled up with light grey silt and contained 10852, a fragment of lead.

The main part of the ditch (contexts V07B-55, V07B-56 and V07B-78), had run southeast and was 1.80m wide and 570mm deep. It had filled up with a mix of grey silt and pale yellow sand with a small amount of re-deposited orange clay in its base. The re-deposited clay was more than likely to have been washed from the clay sides as water moved down the ditch. Context V07B-55 contained: 10828 and 10853, both black glass gaming counters; 10829, a shale gaming counter; 10856, a whetstone; 10830, a samian stamp reading MA[-]; and 10859, an amphora stamp reading [-MIVS[-].

Context V07B-56 contained 10826, a black glass gaming counter and 10827, a white glass gaming counter. Context V07B-78 contained 10863 and 10864, both fragments of lead.

A small section of what appeared to have been a larger ditch (context V07B-86) was identified as having run southeast, 5m to the east of third-century vicus site CXXVI, see figures 87 and 89. This was a continuation of what was described as ‘Ditch 2’ in Birley and Blake 2005 (79-81), and in Birley and Blake 2007 (53-54), when the same ditch was traced for around 50m further west between 2003 and 2006.

Excavation of its easternmost section in 2007 highlighted that its dimensions were identical to further west at 1.60m wide across its top and 968mm deep. It had been cut directly into the natural orange ground clay and had a ‘V’ shaped profile. Its fill contained a mixture of anaerobic mud and thin bands of grey silt (context V07B-86), in which several items of material culture were found. These included: C802, an early As of Hadrian (AD121-122); 10878, an antler needle; 10889, a copper-alloy...
pin; 10890, a flint flake; and 10891, a fragment of lead. Also found were: L07B-23, L07B-24 and L07B-25, all shoes; L07B-21, the sole from a child’s shoe; L07B-22, a leather patch; and T07B-2, a fragment of stylus tablet.

After the ditch’s initial section had been excavated by 2006, it was postulated that it may have acted as a defensive ditch surrounding the northeast edge of the substantial timber buildings described in Birley and Blake 2007 (53-66). After further investigation in 2007, this theory seems increasingly less tenable. The ditch curves southeast to a point which is within 2m one of the groups of large timber posts forming part of those buildings, see below. In doing so, it is highly unlikely to have defended the large timber buildings and seems more likely to have been a similar drainage ditch or water channel to those described above.

Two further ditches or channels were found beneath vicus site CXXIX in 2010, see figures 87 and 90. The earlier of these was V10B-22, which had run in a southeast direction beneath the northeast corner of CXXIX. It was 1.35m wide and had survived to 490mm deep. Filled mainly with organic mud and laminated carpet material, it is quite possible that, in its northern end at least, a substantial amount of its contents represented flooring material from the later, timber roundhouse subsequently built over it (for a description of which see page 107, below). The flooring material from this later building was more likely to have subsided into the softer soils of the ditch than the surrounding ground clay and the subsequently large number of items of material culture recovered from it should therefore be treated with an element of caution. They are highly unlikely to be an accurate reflection of discard into the ditch as a whole and are more likely to represent a small area of subsidence in a discrete area.

The items of material culture recovered from the ditch fill (context V10B-22) were: C2064, a denarius of Domitian (AD81-96); 13887, a bone gaming counter; 13889, a piece of flint; 13890, an iron fitting; 13891, an enamelled copper-alloy stud; 13893, an amber bead; 13894, a ceramic spindle whorl; 13897, a copper-alloy stud; 14642, a fragment of a ceramic crucible; and 14678, half a blue glass melon bead. Several items of leather were also recovered from the ditch fill including: L10B-01, L10B-02, L10B-03, L10B-06, L10B-08, L10B-09, L10B-12, L10B-13, L10B-15, L10B-16, L10B-17, L10B-33, L10B-50, L10B-51, all shoes; L10B-04, L10B-07, L10B-25, all pieces of scrap leather; L10B-11, several offcuts; and L10B-14, a patch. The wooden items found included: W10B-01, a handle; W10B-02, a bucket stave; W10B-03, a mug stave; W10B-05, a possible fitting; W10B-06, a stave with a hole; W10B-15, a wheel spoke; and W10B-16, a fragment from a bowl.

The later of the two ditches, context V10B-31, was relatively narrow at 900mm and had survived to a depth of 400mm, although the amount of subsequent building on the same site means it is likely that it was once deeper than this. It was traced for a distance of 12m in a north-south direction before it had been interrupted at each end by later Roman building activity. It had crossed the earlier ditch, V10B-22, almost directly beneath the northeast corner of the third-century vicus building CXXIX. Filled up with sticky, thick brown mud, the ditch contained: 13883, part of a small sheet of copper-alloy; 14627, a small iron hook; 14644, an iron strip; and 14649, a strip of copper-alloy.

In terms of date, the coin of Domitian, C2064, found in the bottom of the earlier ditch (context V10B-22) meant the later ditch (V10B-31) could not have been cut before AD81. The earlier ditch was also sealed by a subsequent roundhouse in which a samian stamp, 14652, of Peregrinus (production dates between AD65-85) was found in an associated context. The lettering on the stamp was worn, indicating that it been produced using an old die, which implied that the vessel was manufactured in the latter part of the potter’s working life, i.e. closer to AD85 than AD65 (Hartley and Dickinson, 2011, 129, note 8). So, allowing time for the vessel to then have been imported to the site, used and discarded, it was perhaps unlikely to have been deposited beside the roundhouse much before AD90 or so. The roundhouse and its associated features had then been cut by ditch V10B-3, before being in turn covered by the Antonine workshop described on page 79f, above.

There is little doubt, then, that the two small ditches had been cut and were functional sometime towards the latter part of the first century and perhaps early in the second century. Like the similar sized channels beneath the northern and western parts of the later, third-century vicus, they appear to have been some form of water management system rather than boundary markers or defensive ditches.
Roundhouses and potential pre-Hadrianic extramural settlement

During excavation beneath the western part of the third-century vicus between 2007 and 2012, two separate roundhouses of pre-Hadrianic date were identified. The first, excavated in 2010, lay beneath vicus site CXXIX and the second was in an area between vicus site XI and the aqueduct channel just to its north.

Although the second roundhouse was first identified in 2012, the prolonged and extraordinarily wet weather during most of that excavation meant it was not possible to fully examine the building.

Subsequent excavation of the structure resumed in 2013, when the weather had returned to more typical conditions and allowed the maximum to be made from the surviving stratigraphy. However, the delay has meant that it has not been possible to process the small finds, or analyse the records of the building sufficiently to write a comprehensive report for inclusion in this volume. Consequently, what is offered below should be considered an initial introduction to the building, and a full report by the archaeologist responsible for the supervision of its excavation, Andrew Birley, will follow in the future.

The roundhouse excavated in 2012/13 had an associated rectangular structure immediately to its south. Both had been built directly on top of the natural ground clay and were built into the lee side of a natural southeast facing slope. There was evidence that both buildings had been replaced at some stage, being rebuilt to virtually the same plan, but 274mm further south in the case of the roundhouse and 1.02m in the case of the rectangular building. Both phases of each building had been built using horizontal withies woven between upright staves which had been driven directly into the natural ground clay.

The roundhouse itself was closer to an oval in shape than a true circle, with its east-west axis being the more elongated. In its first phase, the roundhouse averaged 4.67m in diameter meaning its internal area was circa 17.1 square metres. The second phase was substantially smaller, with a diameter of 3.87m and an internal area of circa 11.75 square metres. There was also a smaller, circular wattle feature towards its eastern edge in the latter phase, which was 982mm in diameter. Overall, the rectilinear buildings associated with the roundhouses covered an area measuring 4.20m north-south by 5.08m east-west.

The range of material culture found on the floor in each building, as well as some of their internal features such as hearths, storage pits and quern stones, strongly suggested they had been used as a domestic dwelling. However, significant further

Figure 91. Location plan showing the two roundhouses and their associated structures in relation to the third-century vicus buildings (marked in black).
research is required once the material culture dataset has been fully conserved to tease out more detailed nuances of the human actions which had taken place there. This will follow in due course in Andrew Birley’s forthcoming report.

A coin of Nerva (AD97) was found in a drainage gully/drip channel immediately outside the primary phase of the roundhouse. A samian stamp, of Patricius, whose production dates were between AD65-90, was found on the floor of the first of the rectangular buildings. Coupled with the ceramic assemblage, the dating evidence suggests that the primary phase of these structures may have been originally built as early as the late first century. The buildings in its secondary phase had certainly been in use throughout Period IV (circa AD105-120), before being demolished by the beginning of Period V (circa AD120-130), as evidenced by a substantial amount of the up-cast from the Period V fort’s western ditch, see above, which had covered the demolished remains of the roundhouse.

Unfortunately, the roundhouse discovered in 2010, just north of site CXXIX, had been severely truncated by several phases of subsequent Roman building activity followed by further damage by the cutting of four field drains in the late nineteenth or
early twentieth century. A substantial section of its southern end had been completely removed and it was therefore difficult to establish in detail its relationship with what looked to have been an associated rectangular timber building, especially in the area immediately to its south. It was also lamentable that the there was such a shallow depth of stratigraphy at that point of the site. Because only around a metre of soil had accumulated there and the various Roman occupants had been building on the same site for at least 150 years, their demolition of earlier structures had necessarily been particularly thorough.

Nevertheless, elements of the roundhouse and a timber structure, potentially associated with it, were preserved in situ. The roundhouse had been constructed from wattle and daub. The upright staves, spaced at an average of 20mm apart, were universally of birch (the bark had not been removed from the majority of the posts) and had been driven directly into the natural ground clay. Horizontal withies had then been woven between them to create the external wall of the structure. The sections of walling which had survived the structure’s demolition and subsequent damage from post-Roman drainage were preserved to an average height of 280mm.

The building was not a true circle, being more oval in shape with its more elongated axis running east-west. It had an overall diameter of around 4.98m giving an internal area of circa 19.5 square metres.

The small piece of flooring inside the roundhouse which had been preserved (context V10B-42) consisted of laminated layers of bracken and heather, which had been well preserved in the anaerobic soil conditions. It was relatively clean, with only two items of material culture being found. These were W10B-12, a shaped piece of wood and W10B-13, a comb. However, a number of leather off-cuts, L10B-40, were found scattered at random on the floor, some of which also appeared to have been deliberately packed into the wattle wall of the building itself.
Immediately outside the eastern edge of the roundhouse, a small area of potentially discarded flooring material, or perhaps an external work surface associated with the building, had been preserved. This lay between ditch V10B-31, which had cut through part of the surface, and the edge of the roundhouse itself. An accumulation of laminated bracken and heather (context V10B-45), mixed with silty clay, had built up above the natural, grey ground clay to a depth of 180mm. A number of items of material culture had been discarded onto the surface including a substantial amount of leather. The artefacts included: 14622, a square fragment of copper-alloy; 14626 and 14658, both copper-alloy studs; 14630, a glass spout; 14652, a samian stamp of the potter Peregrinus (production dates AD65-85); 14663, a graffito below the rim of a coarse ware jar reading [...] GETI TV [...]; and 14667, an iron sewing needle. The leather items included: L10B-26, L10B-28, L10B-30, L10B-31, L10B-36, L10B-42, L10B-44, L10B-45, L10B-46 and L10B-47, all shoes; L10B-27, a patch; L10B-29, L10B-35, L10B-38, L10B-39 and L10B-41, all off-cuts; L10B-43 and L10B-49 both pieces of scrap leather; and L10B-34, a square fragment with strap holes. Three wooden artefacts were also found on the surface: W10B-9 and W10B-14, both boxwood combs; and W10B-11, a piece of rope.

To the eastern side of the point at which the later ditch/channel V10B-31 had cut the surface, a small, irregular shaped pit (V10B-54) had been dug which was full of leather off-cuts, L10B-37, see figure 95. The off-cuts had clearly been deposited into the pit as refuse and, coupled with the off cuts from inside the roundhouse itself, indicated that leatherworking had been taking place in, and around the building, on a considerable scale.

An initial assessment of the ceramic evidence from the floor of the roundhouse (V10B-42), and the

Figure 96. Plan of the spatial relationship between the roundhouses and the Period III and IV forts at Vindolanda. Period III (c.AD100-105) is marked in blue with Period IV (c.AD105-120) in red. Where the western boundary of the Period IV fort remains unproven, it has been marked in faded ink. The position of the later, third-century, Stone Fort 2 is also marked (outlined in black) as a reference point to remains currently consolidated on site for public display.
floor or work surface immediately outside it (V10B-45), indicate that both had been in use in the early second century (Robin Birley, 2010, pers. comm.). The stamp of the potter Peregrinus, whose production ranged between AD65-85, is another pointer to the potential for the building having had a relatively early foundation within the dating sequence established for the site as a whole at Vindolanda. Based on the limited datable evidence, the building could have been founded and in use any time between Vindolanda Periods I-IV, i.e. AD85- \( \text{circa} \) AD120.

It was, however, clear that the roundhouse had definitely been demolished by the time that an Antonine workshop, see page 79f, above, had been built over the top of its northeast edge. In addition, the structural evidence suggested that the rectangular, timber built structure, context V10B-51 and its associated gravel path, contexts V10B-46 and V10B-56, also dating to the early second century, had cut through the roundhouse before the Antonine workshop was built. The wattle walls of the roundhouse had clearly been truncated by the posts and wattle of building V10B-51. However, the disturbance to the already thin soil stratigraphy at that point was so great that any attempt to establish an absolute dating sequence between the two based on the material culture assemblage would be unreliable.

It is tempting to draw a direct parallel between the roundhouse excavated in 2012/13 and that found in 2010. Both were similar in size, exhibited similar associated features and appear to have had a similar function, range in occupation and demolition date. However, their spatial relationship means this is potentially problematic.

Theoretically, both could have originally been constructed outside the western wall of any of the forts at Vindolanda up to Period IV \( \text{circa} \) AD105. This would have made them both extramural and their circular construction style, suspected domestic use and spatial relationship to each other would not be out of place in such a context.

However, it was very clear from its material culture assemblage that the northernmost roundhouse had continued in use throughout Period IV before then being demolished and covered by the up-cast from the cutting of Period V’s western ditch. During its use throughout Period IV, it had been situated immediately outside the fort’s northern ditch, again making it extramural. However, if the southern roundhouse was a direct parallel, it would at that point have fallen inside the Period IV fort’s walls and, as such, would be a highly irregular building inside a military fort, if the two were both still in use.

A possibility is that both roundhouses, and the structures immediately associated with them, had initially been built as parallel dwellings in an extramural context in the late first or very early second century, before the southernmost was demolished to make way for the new Period IV fort in \( \text{circa} \) AD105. The fact that the Period IV fort extended substantially further west than its predecessors has been discussed above. Because the northern roundhouse lay beyond the northern ditch of the new fort, it is possible that its occupants were permitted to carry on using it, unlike their contemporaries in the southern roundhouse, who evidently were moved on.
Previous excavations beneath the western periphery of the third-century *vicus* in 2005 and 2006 had identified what was interpreted then as a substantial single timber building. It had used massive oak posts in its construction and was thought to have been surrounded on its northeast edge by a defensive ditch (Blake and Birley, 2007, 53-66). Only subterranean features associated with its foundations had survived complete destruction by subsequent Roman building and post-Roman agriculture. This meant that no evidence was found for its use. Prior to 2007, dendrochronology had shown that at least one of the oak trees used in its construction had been felled between AD101-112 (Tyers, 2007, 130-137).

Additional evidence from what had initially been supposed to be the same structure was also found in 2007. This came from just west of *vicus* site CXXVI and in the vicinity of the two small temple-tombs, CXXIV and CXXV. The structural features found in these two areas are described below. The new information has proved that the posts actually represented at least two buildings, and has allowed a more accurate date to be ascribed to one of these. It has now been shown that these buildings covered an area of at least 780 square metres and there is a strong likelihood that they had originally extended over a much greater area of the western part of the site. Unfortunately, it remains the case that only subterranean features associated with the buildings’ foundations have been identified, all evidence for any surviving flooring having been entirely destroyed.

Evidence found north of *vicus* sites CXXIV and CXXV

Overall, four separate rows of posts have now been identified in this location, each of which had been constructed in a slightly different style. The northernmost, row A (Birley and Blake, 2007, 55 and figure 101 below), consisted of single posts averaging 600mm east-west by 400mm north-south, which had been spaced an average of 5m apart. Large rectangular pits measuring 2m east-west by 1.50m north-south had been cut into the natural ground clay to accommodate the posts, each pit being approximately 2.30m deep. It appeared that the posts had then been positioned near the centre of their respective post-pit with the displaced natural clay being backfilled around them. Occasionally, dolerite boulders had also been packed around the posts for stability and it was notable that, generally, the 100mm or so of soil immediately around each post had been backfilled with blue coloured puddled clay, see figure 100. It is possible that this sheath of clay had been intended to act as a damp course.

None of the posts in row A had been left standing any more than a few millimetres above the natural ground clay surface. It was also apparent that the top of at least one had been fire-blackened, perhaps indicating how the building had eventually been demolished.

The majority of the posts in row A had been chamfered at their tip from a point about 400mm above the base, the chamfered side having faced north in the post-pit. A number of them also had a
smaller chamfer on their east and west sides, although this was little more than 200mm in most cases. It seems most likely that such chamfering was used as an aid in the erection of the posts, perhaps to enable them to be manoeuvred into an upright position more easily. It was very evident that they had not been driven into the ground, but had been lowered into pre-existing post-pits, meaning the chamfering was unlikely to have been to aid any effort to drive the posts into the ground.

Each of the posts in row A also had substantial rectangular holes, averaging 200mm by 150mm, cut into their east and west sides. These were frequently cut at an angle close to 45 degrees so that they linked together to form either a single slot, or two holes in the south facing side of each post. In general, the holes were positioned no more than 600mm from the base of each post and had therefore been buried deep within the post-pit. This meant they could have played no structural role in the finished building and they seem most likely to have, again, been cut to help manoeuvre the timbers, perhaps from their felling place to the building site, or perhaps during their initial placement in the post pit.

One of the posts in this row, A7, had been given a cross-brace, identical in style to that found supporting A5 in 2006 (Birley and Blake, 2007, 59). Four oak blocks had each been shaped into a flat-bottomed ‘U’ shape and positioned around the post so that they interlocked with each other. The brace itself had been positioned quite high within the post-pit, lying only 250mm beneath the surface of the natural ground clay. It had almost certainly been used in an effort to try and stabilise the post, which showed evidence of a vertical split across its east-west axis, identical to A5. This splitting was evidence of the posts having been subjected to significant stress. This may have been tensile, shearing, torsional or from bending.

That posts almost 600mm square and set 2m into the ground, had still needed further stabilisation indicated that the builders had encountered significant engineering difficulties. Perhaps the forces created by the large size of the structure, or the significant dead load it must have borne, had pushed the oak beyond its physical limits as an anisotropic material. Another possibility may stem from the...
building having been sited near the top of a shallow hill on an exposed part of the site. The location is one of the windiest parts of the site today, with 60mph plus gusts being a regular occurrence. It is possible that the dynamic load caused by such adverse climatic conditions may have been too much for even such substantial timbers to bear.

Lying 3m away to the south of row A, more post-pits of row B were identified, see figure 101. These were parallel, although not perpendicular, to those in row A, but their similarity in size and stratigraphical position meant they were almost certain to have belonged to the same structure. Excavation during 2005/6 had uncovered five such post-pits in this row and a further three, containing posts B26-37, were examined in 2007, see figure 101. The additional three pits were situated immediately to the west of those discovered in 2005/6 and had followed the same east-west alignment. The post-pits were rectangular in shape and measured 2.18m east-west by 1.60m north-south. They had been dug into the natural ground clay to an approximate depth of 2m. A series of four large oak posts had then been inserted into each pit in the arrangement shown in figures 99 and 101.

This arrangement had had been kept for all of the posts in each of the three pits, with the two posts situated in the post-pit’s northern side being substantially larger than those on its south side. The post in the northwest corner of each pit was always the largest, measuring 510mm east-west by 372mm north-south. This made it similar in size to the posts in row A and it must have been a major structural timber. The posts in the northeast corner of each pit were slightly smaller but, at 315mm east-west by 285mm north-south, had still been substantial timbers. Their size is perhaps put into context when they are compared with the major oak posts used in the load bearing walls of the Period III fort’s praetorium, or the Period IV fort barracks, both excavated in the early 1990s (Birley, R., 1994, 64, 95). These had measured 150mm by 120mm, and 125mm by 105mm respectively but, at just over a third of the size, were dwarfed by the

Figure 100. Posts B25 (left) and B23 (right), looking west. The cut of the post-pit is visible along with the dark grey stain of the puddled clay placed around each post. It can clearly be seen that B23 was a substantially larger post and had been positioned deeper into the ground than B25.
Figure 101. Two plans of the timber posts identified by excavation up to the end of 2007. The plan on the left shows the position of the posts and the outline of their post-pits (where they could be identified). The right hand plan is identical, but also shows the individual post numbers.
posts in row B.

The three post-pits excavated in 2007 mean that a total of eight such pits have now been identified in row B. They cover a total of 32.8m in an east-west direction, but it should be stressed that there is a very strong likelihood that more, as yet unexcavated, would have been located to the east and the west.

Additional evidence for a third row of timbers, row C, was also identified in 2007, 2m to the south of row B. It was noted in Birley and Blake (2007, 63) that this row appeared to have been a single line of posts and it can now be added that the posts appear to have been erected in pairs. One additional post-pit was excavated in 2007, but two further pits containing posts C1, C2, C3 and C4 (ibid, 56) were also more fully examined than in 2005. All of the posts in row C appear to have been inserted in a similar arrangement to each other. An oval pit had been dug into the natural ground clay, measuring 1.40m east-west by 0.73m north-south. Two oak posts had subsequently been positioned towards each end of the pit. The eastern of these measured 310mm east-west by 210mm north-south, the western post measured 200mm east-west by 160mm north-south. The post-pit had then been packed with river-washed stones in an identical fashion to those in row D (Birley and Blake, 2007, 64).

More extensive excavation has now shown that the style of these posts is quite different to that of rows A and B. Where in 2007 it was thought that all three rows had been part of the same structure, there is now a considerable element of doubt. If they had all been part of one structure, it would have measured at least 75m long in an east-west direction. This is exceptionally large and there is little logical explanation as to why the structural fabric of the building should change from an arrangement of massive singular external posts with an internal row of pits, each containing four or five posts, to parallel single rows of oval post-pits each containing two substantially smaller timbers. It now appears more plausible that rows C and D, with their oval post-pits and paired posts, were more likely to have been part of a separate building, quite possibly of a slightly later date.

Evidence found west of vicus site CXXVI

The natural Roman ground surface had sloped downhill in an easterly direction from the west of the site. Over the 75m examined between vicus sites CXXIV and CXXVI thus far, there had been a 2m fall in the Roman ground level. This, coupled with significant amounts of later Roman activity, had major implications for the amount, and quality, of preservation of the large timber buildings that had once been situated there. Only eleven large posts (E1-11) could be identified from the 425 square metres examined to the west of site CXXVI in 2007. Their location is shown on figure 101, above.

After his dendrochronological analysis, Ian Tyers
highlighted the fact that the timber used in the posts of group E was different to that used in the other rows, see page 226, below. He pointed out that this may have been exploitation of different parts of the landscape around Vindolanda to provide timber for different parts of the building, or perhaps that it represented a separate phase of construction activity using different trees. He noted that rows A and E were certainly constructed at different times with post E1 being felled in the winter of AD97 (contemporary with the timber water pipe described in Birley and Blake, 2005, 30-32) and post A5, which had been felled between AD101-112.

This difference was also noticeable in the preserved archaeological remains. Posts E1-E4 had been situated on the same alignment, and had a similar spatial arrangement, to the posts in row A. However, their size and style were sufficiently different to suggest that they had probably formed part of a separate building. Whereas row A had contained single timbers of around 600mm by 400mm, the posts in group E were significantly smaller, for example, E3 and E4 only measured 260mm by 240mm.

Their general arrangement was also different. Posts E1-E4 had been inserted as a group of four into a rectangular pit (context V07B-14) measuring 1.53m east-west by 1.44m north-south. This was similar in style to the posts in row B, but with one crucial difference. Whereas the posts in row B had been arranged with the largest two on the north side of the post-pit and two significantly smaller posts along its south edge, the opposite was true for posts E1–E4. The two smaller posts of the four, E1 and E2, had been placed on the north edge of the post-pit and had only been inserted a few centimetres into the natural ground surface. The pit contained C726, a dupondius of Domitian (AD81-96).

Posts E5/E6 and E7/E8 along with their associated post-pits were also different to the single posts in row A. Instead, they had been inserted as a pair into oval post-pits in an identical fashion to the posts in rows C and D. These pits measured 1.94m east-west by 0.78m north-south and had been dug 0.85m into the natural ground clay. Once the posts had been positioned in them, they had been backfilled, with the displaced natural clay and river-washed stones being packed around the posts.

2m to the east of posts E7 and E8 another potential post-pit in the same row was located. Unfortunately, no timber had been preserved in its fill, and the large amount of subsequent Roman building activity had meant it was extremely heavily disturbed. Because of this disturbance, it cannot be stated with absolute certainty that the pit was part of the same sequence as those containing posts E1–E8. However, its position, both spatially and stratigraphically, means it was highly likely to have been.

A further four large oak posts were identified just to the south of E1–E8, see figure 101. Only their very tips had survived, but this was sufficient to establish that they had been of a similar size to posts E3 and E4. All that can be said of them is that they appear to have been inserted into the natural ground clay and had a similar position in the surrounding stratigraphy as posts E1–E8. They appear most likely to have been part of the same building.

After further investigation in 2007 it has still been impossible to establish coherent building plans from the fragmented remains of the arrangement of posts. However, what has now become apparent is that the 4 rows of posts identified represent...
structures in the plural sense rather than the single large building postulated in 2007. It is also now evident that the posts in group E slightly predated those in row A, meaning group E fall in the latter part of Vindolanda Period II (c.AD90-c.AD100) and row A in the early part of Vindolanda Period III (c.AD100-105).

The posts in group E seem likely to have been part of a completely different, and earlier, building than the posts in the other rows. However it is possible, especially given the similar size of the timbers in rows A and B and their identical alignment to those in group E, that they represent a major repair or direct replacement for the original structures rather than a building with a different function.

The massive nature of the timbers used in the structures strongly suggests that the skeletal framework they had formed was expected to withstand significant loads. Something like a basilica, or the footings for a series of major aqueducts are not beyond the realms of possibility. Similarly, the significant ground area they covered indicates they had been buildings of considerable size. It is not impossible that they may have been part of some form of temporary legionary compound lying beyond the western perimeter of the auxiliary forts known to have been sited immediately to the east.

It is highly unfortunate that the extent of the subsequent disturbance has left such fragmentary remains, including the total lack of evidence for flooring. This has meant that, for now, any hypothesis as to the buildings' likely function remains speculation. However, given the substantial area of the western part of the site that they covered, better preserved remains are likely to be discovered in adjacent areas in any future excavations.
Post-Roman activity

As noted in several of the sections above, at certain places in the west of the site at Vindolanda there had been extensive post-Roman damage to the relatively thin stratigraphy of the archaeological remains. However, this damage was not as severe as perhaps it could have been because of an obvious hiatus in human activity spanning several centuries from around the 6th century onwards. This was evident in the archaeological record and had afforded the site reasonably good protection up to around the turn of the eighteenth century, after which the majority of the damage appeared to have occurred.

As work in the vicus between the early 1970s and 2012 has shown, there appeared to have been a significant movement in the population of the vicus by the end of the third century. Coinage and ceramic deposition suggests the vicus itself had been largely abandoned by that stage, with the population moving to take up residence inside the fort and therefore within the safety of its defensive walls. The latest research within the fort itself indicates that habitation in that area was eventually concluded sometime after the sixth century (Birley A., 2013b, 15-23).

In his history of Northumberland, written in 1840, Hodgson observed that Vindolanda had become known as ‘the Bowers’, suggesting the site had reverted to scrub woodland after the site’s sub-Roman abandonment (1840, 195). As Robin Birley noted (2009, 172-174), the turbulence and dangers created by border warfare had effectively strangled settlement north of the river Tyne until 1603 when the Union of the Crowns finally encouraged landowners to permit tenant farmers to establish smallholdings in the frontier zone, including the land immediately surrounding Vindolanda.

Unfortunately, damage to the archaeological remains increased from that point onward. The various tenant farmers of crofts such as Archy’s Flat, Wellmeadow Close, Smiths Chesters and Codley Gate (see figure 1) utilised the Roman ruins as a cheap source of stone for their own building projects. While the antiquarian interests of

Figure 104. Three views of damage to the archaeological remains in the west of the site by agricultural drains. The main photo shows how a stone-built drain had truncated vicus site CXXIX. Top right shows how well CXLI had been cut by a field drain and the trench subsequently expanded to rob stones from its side. Bottom right shows a typical arrangement of how the small, 300mm long, ceramic pipes had been joined to run into larger field drains.
landowners such as Anthony Hedley and John Clayton certainly limited this damage to an extent in later years, there is significant archaeological evidence that several of the third-century *vicus* buildings had been plundered by stone robbers (Birley and Blake, 2007, 99).

Disturbance increased after the late eighteenth century when Acts of Parliament were granted to enclose the remaining open land. The subsequent demand for stone to build such boundaries can only have created further bouts of stone robbing of the Roman remains. In addition, the ploughing of land covering the Roman remains resulted in the plough share churning up and re-depositing Roman soil horizons. Quite often the successive episodes of ploughing left nothing more than deep striations on the larger foundation stones. However, in other places, for example the large open cobbled waggon park/market place (page 40), significant damage and re-deposition had taken place.

Finally, there were significant efforts in the nineteenth and twentieth centuries to improve the land for agriculture by drainage. During excavation, it was notable that there had been several attempts to drain land in the western part of the site over a substantial part of its modern history. Quite often stone-built drains, which were an average of 510mm wide, had been inserted into the ground and had sliced through the underlying Roman features down to the natural ground clay, see for example figure 104.

In addition, a complete network of ceramic field drains had been cut west of *vicus* sites XIV and

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**Figure 105.** Plan showing the system of nineteenth/twentieth-century field drains (marked in purple) beneath the western part of the third-century *vicus*. The areas excavated between 2003 and 2012 are outlined in red.
CXXVIII, figure 105. Spaced at 8m apart, these had been constructed using 300mm lengths of red clay ceramic pipe and are most likely to have been inserted during the twentieth century. The pipes themselves had done relatively little damage to the archaeology, having been cut into narrow 200mm wide trenches. However, in several cases, where their diggers had encountered stone buildings of Roman date, they had widened their trench in order to take the valuable dressed facing stones, for example well CXLI, page 44.

As noted above, in overall terms, the damage to the Roman remains from these successive episodes of post-Roman building, stone robbing and efforts to improve the land for agriculture, was relatively minor. However, the damage was still significant in places, and complicated the understanding of some of the less well preserved archaeological features.

Given the amount of plough damage to a significant area of the uppermost stratigraphy, it was inevitable that a certain amount of material culture would be found which was unstratified. The majority of these artefacts had little bearing on site interpretation and were of relatively minor significance. However, two items, 10953, a stone altar and 13796, a small copper-alloy griffin were of note.

The altar was discovered in 2008 in a narrow extension trench to the southwest of vicus building CXXVII, see figure 106. Although it was found in the plough disturbed topsoil, the only archaeological features in the immediate area were a narrow beam slot and a small pit, see figure 106. The fact that the building was made from timber suggested they were likely to have predated the third-century vicus buildings in the same area, which had all been built of stone. Although it cannot be proven, it is possible that the altar was associated with the building, possibly in the small pit, given that it was found in the topsoil immediately above it.

Because the lettering on the two surviving lines of text is worn and relatively poorly inscribed, there is ambiguity in its reading. It would appear that it had been dedicated to either dea Hammia, or the mother goddesses. For an outline of the possible readings see Anthony Birley’s report page 167.

The small copper-alloy griffin was also found in heavily plough disturbed topsoil, north of third-century vicus structure CXXIX. It was discovered only about 30mm beneath the modern turf and could have come from several features of different dates in the immediate area. Its light weight would mean it was relatively easily dragged by the plough. However, it was found immediately above a large rectangular pit (context V10B-7), which appeared to have been used to gather scrap metal, possibly for recycling, in an Antonine workshop see page 79f. It is possible that the griffin had also been gathered as scrap with other high value objects such as the two lead mirror frames, 13849 and 14682. For a detailed description and report on the griffin, see Barbara Birley’s report on page 184.

Figure 106. Main photo shows the beam slot and pit where altar 13796 was found, looking west (scale = 20mm divisions). Inset shows the front of the altar itself.


Warburton, J. (1753) Vallum Romanum or, The History and Antiquities of the Roman Wall, Commonly Called the Picts Wall, in Cumberland and Northumberland, Built by Hadrian and Severus. London.


## Coin Identifications

By Richard Brickstock

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<td>Septimius Severus, perhaps counterfeit (AD198-211) Den</td>
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<tr>
<td>C2247</td>
<td>V11-3B</td>
<td>Late sestertius, probably C3 (c. AD193-235?)</td>
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<td>V11-3B</td>
<td>Constantine II (AD320-325)</td>
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<td>V11-4B</td>
<td>Marcus Aurelius (AD161-180)</td>
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<td>V11-12B</td>
<td>Denarius, perhaps C2, fragments (?C2) Den</td>
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<td>Denarius, probably Marcus Aurelius (AD161-180?) Den</td>
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<td>Severus Alexander (AD222-235)</td>
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<tr>
<td>C2253</td>
<td>V11-12B</td>
<td>C2, perhaps Hadrian/Pius (AD117-161) Sest</td>
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**AREA B Coins 2012**

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Stamps on Amphorae, Mortaria and Samian Ware (Terra Sigillata) from excavations at Vindolanda (Area B 2007-2012)
By Kate Sheehan-Finn

Abbreviations

A Argonne (as in Appendix 3, Hartley & Dickinson, 2008a, 397-400)
AC Avocourt
ANT Antonine Period
B South-east Britain (as in Appendix 3, Hartley & Dickinson, 2008a, 397-400)
BAN Banassac
BD Brenda Dickinson
CG Central Gaul (as in Appendix 3, Hartley & Dickinson, 2008a, 397-400)
CBMO Corbridge Region Mortaria
CN Cournon
CRMO Carlisle Region Mortaria
EG Eastern Gaul (as in Appendix 3, Hartley & Dickinson, 2008a, 397-400)
HAD Hadrianic Period
ITW Ittenwiller
KH Katherine F. Hartley
L Lubié
LGR La Graufesenque
LIMO Lincolnshire Region Mortaria
LM La Madeline
LMV Les Martres-de-Veyre
LPDR Le Pont-de-Rémes
LZ Lavoye
LZ Lezoux
MH Mancetter-Hartshill Region Mortaria
PDR Production Date Range
RZB Rheinzabern
SF Small find number
SG Southern Gaul (as in Appendix 3, Hartley & Dickinson, 2008a, 397-400)
SZ Sinzig
TR Trier
UNK Unknown
U/S not stratified
VRMO Verulamium Region Mortaria
WRMO Wilderspool Region Mortaria

Introduction

A total of 116 pottery stamps were found in Area B during the 2007-2012 excavation seasons. Of these, 8 are amphora stamps, 32 are mortarium stamps and 83 are samian stamps. The main purpose of this report is to catalogue and identify each stamp when it was possible to do so. Another aim is to offer some preliminary analysis of the data from Area B, particularly of the large body of evidence offered by the latest finds of mortarium and samian stamps.

1 Kate Sheehan-Finn is Archaeological and Research Assistant for the Vindolanda Trust.
2 Several stamps were found in June 2013 when excavation was conducted in Area B to finish work begun in 2012. This was necessary because the extremely wet summer of 2012 hampered excavation and it was not possible to finish the excavation until 2013.
The report deals first with stamps on Amphora handles, then with mortarium stamps, and the last section reports the samian stamps from Area B. The following details are included in the text of the catalogue for each stamp: Small Find number (abbreviated SF); Vindolanda context number; the date of the context in which the stamp was found (as established by Justin Blake in this report); the period at Vindolanda to which the context is related (based on Appendix I in Birley, 2009, 83); the stamp reading; information on the form and/or fabric of the vessel where relevant; the identification of the potter or workshop where the vessel was made; the date at which the potter/workshop was operating, if known; and also bibliographic material when this was available.

Stamp readings follow some conventions. A dot underneath a letter indicates uncertainty in the identification of that letter. Letters in square brackets, e.g. [ATV], indicate known letters that are missing from a broken stamp. A dash in square brackets, [-], indicates that there are letters but they cannot be read and it is not certain how many letters are represented. Dots in square brackets, e.g. [...], indicate that letters are missing, the letters are not known, but it is known how many are missing. Each dot represents a missing letter.

The production date range (PDR) is provided for the makers of mortaria and samian vessels and this is clearly stated in the text where this is the case. These date ranges refer to when a vessel was produced, and not when it arrived at the site. Production date naturally does not indicate how long a particular vessel was in prime use (or re-use) at Vindolanda, and does not indicate its final deposition date. The PDR is included here to indicate the earliest possible date that a vessel may have been made and could conceivably have reached Vindolanda. Dating evidence provided for amphora stamps is slightly different. Amphorae are packaging and the external dates often represent dated contexts on other sites where these stamps have been found.

More details and full bibliographic material for amphora stamps have been provided elsewhere (Sheehan-Finn, 2012).

**Amphora Stamps from Vindolanda Area B 2007-2012**

Just 8 amphora stamps were recovered from Area B during the 2007-2012 excavation seasons. All stamps are on the handles of Dressel 20 amphorae that originated in the Guadalquivir valley in the Roman province of Baetica in southern Spain. The author has recently published a catalogue of amphora stamps recovered from all areas of the Vindolanda excavations 2007-2012 (Sheehan-Finn, 2012). Summary details of 7 amphora stamps from Area B, already published in that volume are provided here with their catalogue number and SF number for ease of reference (Table 1). Further information on these stamps is available in Sheehan-Finn (2012). The eighth unpublished stamp is added to the record here. This stamp was left out of the catalogue in error. All eight amphora stamps from Area B are illustrated in Figure 1.

SF13826 V10B-12 AD213+
Period VII+
Dressel 20
Stamp: A P F E
Interpretation: A( ) P(ortus) FE( )

The stamp is on the handle of a Dressel 20 amphora in an oval border. There is damage on the upper left edge. This stamp has been noted in Berni Millet (2008, 558, no. 68). However, it has not been illustrated in that work and external dating for this specific form of the stamp is currently unavailable. However, this stamp must belong to the 2nd century series of stamps beginning with A P (A P amphora/I, CF, CO, CC, F, NA etc). The reading is: cognomen + portus + another cognomen (Laubenheimer & Marlrière, 2010, 208-9, nos. 150a-b). The precise origin of this specific stamp in southern Spain is also unknown at present.

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1 All internal dates are those provided by Justin Blake in this excavation report. All periods are after Birley, R. (2009, 83, Appendix 1).
### Table 1: Seven Dressel 20 Amphora stamps from Vindolanda, Area B, 2007-2012.

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<th>Stamp</th>
<th>Interpretation</th>
<th>External Date(s)</th>
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<td>c.AD 105-205 Period IV/VIA</td>
<td>L.A.F.P</td>
<td>L. A( ) F(lacci, -lacciani) P(ortus)</td>
<td>AD162-192 Third century AD</td>
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<tr>
<td>SF10795 V07B-27</td>
<td>c.AD 130s-c. AD213 Period VI/VIB</td>
<td>LQSC</td>
<td>L( ) Q( ) S( ) C(anania?)</td>
<td>c.AD150-c.175</td>
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<tr>
<td>SF16743 V12-51B</td>
<td>AD 213+ Period VII+</td>
<td>OLEASTRO</td>
<td>(de fundo) Oleastro</td>
<td>Third century AD</td>
<td></td>
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<tr>
<td>SF10838 V07B-36</td>
<td>c.AD 120-130s Period V</td>
<td>SANNIRGR</td>
<td>S(exti) Anni R(ufi), -ufini (ex figlinis) Gr(umensibus?)</td>
<td>Mid-second century AD</td>
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<td>SF10859 V07B-55</td>
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<td>[-]MIV[ ]</td>
<td>[-]mius [F(ecit)]?</td>
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</table>

**Mortarium Stamps from Vindolanda Area B 2007-2012**

Excavations in Area B 2007-2012 added 26 stamped mortaria to the Vindolanda collection. A further 6 stamped mortaria were recovered during the 2013 excavation season in Area B. A total of 32 mortarium stamps are reported here. Of these, 19 stamps have been identified either certainly, or probably, and are listed in the catalogue below in alphabetical order and illustrated in Figure 2. There are 5 stamps that are the marks of illiterate potters (illustrated in Figure 2). The remaining 8 are too worn and/or fragmentary to make any attempt at identification (not illustrated). These fragmentary and illegible stamps are summarised after the identified stamps. Preliminary analysis and discussion follows the catalogue text.
Amenus (probably)
SF13827 V10B-13 AD213+ Period VII+
Stamp: AM[-] (break after M; Poor strike)
The fabric is coarse, orange-coloured on the exterior and with a grey core. There are traces of cream slip on the exterior of the vessel and there is no trituration grit. This stamp is comparable with a stamp from Warrington, dated c.AD110-c.155 (Hinchcliffe & Williams, 1992, no. 366).

Anaus
SF13853 V10B-02 AD213+ Period VII+
Stamp: ANAV[S] or ANAV[SF] (AN and AV ligatured; damaged at right edge)
A part of the rim and body of the vessel has survived. The fabric is coarse, orange-coloured throughout and may have been slipped. The trituration grit is composed of white, grey and black particles that are worn smooth. The stamp is comparable with examples from Corbridge (Birley and Gillam, 1948, Figure 1, 1Ai and 1Aii).

Anaus
SF16920 V12-102B pre-c.AD213 pre-Period VII
Stamp: ANAV[S] (AN ligatured; damaged after the second A; worn)
A tiny rim-sherd is all that remains and the fabric is coarse, orange-coloured on the exterior and with a grey core. There are traces of brown slip on the rim, which is a narrow curved shape, and there is no trituration grit. This stamp is comparable with examples from Corbridge (Birley & Gillam, 1948, Figure 1, nos. 1Ai-1Aii).

*For more on the potter Anaus, see the analysis and discussion after the catalogue text.*
Anaus
SF10807  V07B-11  c.AD165-205  Period VIA
Stamp: AN[-] (AN ligatured; break after the N)
A small part of the rim and body of the vessel has survived. The surviving sherd includes part of the spout. The fabric is coarse, orange in colour, with the colour fading to a paler orange in the core. No trituration grit has survived. This stamp is comparable with examples from Corbridge (Birley and Gillam, 1948, Figure 1, nos. 1Bi-1Bii).

Anaus
SF16899  V12-104B  c.AD130s+  Period VI+
Stamp: reads ANANS (reversed; AV ligatured).
The fabric is coarse, orange-coloured on the exterior and with a grey core. There are traces of cream slip on the exterior of the vessel and the trituration grit is composed of sparse white particles. This stamp is comparable with examples from Corbridge (Birley & Gillam, 1948, Figure 1, nos. 1Bi-1Bii).

Anaus
SF10868  V07B-07  c.AD100-130s  Period III/V
Stamp: AHAVI[/.A]HAVI (reversed)
A small part of the rim with the damaged spout and body of the vessel remains. The fabric is coarse, orange-coloured throughout and there are traces of cream slip on the exterior surface. The trituration grit is composed of white and small grey particles that are worn smooth. This stamp is comparable with examples from Corbridge (Birley and Gillam, 1948, Figure 1, nos. 1C-1D).

Anaus
SF16918  V12-102B  pre-c.AD213  pre-Period VII
Two stamps, one on either side of the spout:
A Complete; reads ANANS[-], (reversed), B Fragmentary; reads [-]HAVI, (reversed)
The fabric is coarse, orange-coloured on the exterior and with a grey core. There are traces of cream slip on the exterior of the vessel and evidence of burning on the interior. The trituration grit is composed of brown and white particles and the flange of the mortarium is grooved. This stamp is comparable with examples from Corbridge (Birley and Gillam, 1948, Figure 1, nos. 1C-1D).

Anitus
SF10789  V07B-21  pre-AD 140  Period I/V
Stamp: AVSTIN/[M][ANV] (damaged)
A part of the rim and body of the vessel has survived. The fabric is coarse, red-orange in colour throughout, and there are traces of cream slip on the exterior of the vessel. The trituration grit is composed of brown and white particles and is only partly worn. Comparable examples can be found in Birley & Gillam (1948, Figure 1, no. 4); Hartley (1989, Figure 120, no. 124) (AD 120-65, printed upside down); Wilmott (1997, Figure 176, no. 257-258) (AD 115-165); Miller (1922, Plate XL B, no. 17); and Birley (1938, Figure 34, no. 1).

Coertinus
SF10805  V07B-07  c.AD100-130s  Period III/V
Stamp: COERTINV (reversed)
A small fragment of the rim of the vessel is all that has survived. The fabric is coarse, pale orange-cream in colour throughout and there are traces of cream slip on the exterior surface of the vessel. There is no trituration grit. This stamp was probably made with the same die as one shown in Birley & Gillam (1948, Figure 1, no. 12) (AD 140-200). To the best of the author’s knowledge, a production location and/or date range has not been established for this potter. This stamp could not have been deposited at Vindolanda later than the 130’s, and this securely stratified find perhaps indicates a PDR within the early decades of the second century AD.

1 For more on the potter Anitus, see the analysis and discussion after the catalogue text.
Docilis

SF10847  V07B-36  c.AD120-130s  Period V
Stamp: [DOC][E-] (FE intended; damaged and worn)
A small part of the rim and body of the vessel has survived. The fabric is coarse, orange-coloured throughout, and there are traces of cream slip on the exterior of the vessel. The trituration grit is composed of brown and white particles that are worn smooth. This stamp is similar to one from Birdoswald (c.AD120-c.155) and the intended reading is DOCI(lis) FE(cit) (Wilmott, 1997, Figure 176, no. 259).

Felicioles

SF16777  V12-38B  Post-Roman  Period X
Stamp: FELICIOL[ES] (with herringbone pattern to the top and bottom of the stamp)
A small fragment of the rim and body of the vessel has survived. The rim is hooked and there is a small inner bead. The fabric is smooth and hard, red-orange on the exterior and paler orange at the core, with traces of cream slip on the exterior surface. The trituration grit is composed of white particles that are worn smooth. The stamp is comparable with examples from Ambleside, Benwell, Birdoswald, Carlisle (3), Chesters, Corbridge and South Shields (Hartley, 2010, 83, and Figure 61, no. 11). Unfortunately, this stamp appears to be residual, since this potter worked somewhere south of Hadrian’s Wall between c.AD110-140 (Hartley, 2010, 83).

Matugenus

SF14688  V10B-51  c.AD100-130  Period III/V
Stamp: MATVGENV (MA ligatured; chevron border)
Approximately one quarter of the rim with part of the spout and body of the vessel has survived. The fabric is coarse, fawn-coloured throughout and the trituration grit is composed of white particles that are worn smooth. The stamp is comparable with examples from Corbridge dated c.AD70-100 (Birley & Gillam, 1948, Figure 2, no. 38); two stamps from Wroxeter (Bushe-Fox, 1913, Figure 16, nos. 8, 14); and a stamp from Baldock (Rigby & Hartley, 1986, Figure 9, no. 12). Tyers noted that Matugenus was perhaps from a family of potters because other mortarium stamps indicate that he was the son of Albinus (Tyers, 2012c). Matugenus worked in one of the Verulamium workshops between c.AD80-125 (Tyers, 2012c). Gillam previously noted mortaria by Matugenus dated AD80-110 (Gillam, 1970, no. 240). This Vindolanda example fits well with the known production date range for Matugenus.

O(fficina) Sen(us, -ius) (perhaps)

SF10799  V07B-27  c.AD130s-213  Period VI/VII
Stamp: reads OSENV (almost complete)
A small fragment of the rim and body of the vessel has survived. The fabric is coarse, pale orange in colour throughout and there are traces of cream slip on the exterior surface. The trituration grit is composed of white and brown particles that are worn smooth. This stamp is comparable with two stamps from Corbridge.

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1 For more on the Docilis group of mortarium makers, see the analysis and discussion after the catalogue text.
2 For more on stamps of Felicioles, see the analysis and discussion after the catalogue text.
(Birley and Gillam, 1948, Figure 2, nos. 52i-52ii). It is in this publication that the suggestion that the O stands for Officina was made (Birley and Gillam, 1948, 191). It is possible that SENV represents the genitive of a potter named Senius. The author concurs with Birley and Gillam’s assessment and the interpretation should probably be O(fficina) Sen(ius). The fabric and grit suggests a northern England manufacture for vessels with this stamp and three other mortaria with this stamp have been found at Vindolanda (SF14470, SF14742, SF16033) (Sheehan-Finn, forthcoming).

Sullon(us, -ius, -iacus)²
SF10802 V07B-21 pre-AD 140  Period I/V
Stamp: SV[LLON] (chevron border to top and bottom of the letters; damaged)
A small part of the rim and body of the mortarium remains. The fabric is coarse orange-coloured throughout and there are traces of cream slip on the exterior of the vessel. The trituratio grit is composed of white and brown particles that are worn smooth. This stamp is identical to another stamp found at Vindolanda (SF5459) (Sheehan-Finn, forthcoming).

Sullon(us, -ius, -iacus) (probably)
SF1676 V12-28B  c.AD213-270s  Period VII
Stamp: ŠVL[LON] (retrograde; damaged) (possible identification)
Only a small part of the rim of the vessel has been found. The fabric is coarse, cream-coloured on the exterior with a grey core. There are traces of pale brown slip on the rim and there is no trituratio grit remaining. There is a groove on outside of the rim. The identification of this stamp is not completely certain, although the vessel is likely to have been made in the Corbridge region.

Sullon(us, -ius, -iacus)
SF16789 V12-67B  c.AD130+  Period VI+
Stamp: SV[LLO[N] (damage on the lower edge)
A small fragment of the rim and body of the vessel has survived. The fabric is hard, cream-coloured on the exterior with a pale grey core and there are traces of brown slip on the rim. There is an internal bead, the small flange is hooked and there is a pronounced external groove. The trituratio grit is composed of white particles that are worn almost smooth.

Sullon(us, -ius, -iacus)
SF17531 V13-01B  AD 130s+  Period VI+
Stamp: [S]VLLON
A small piece of the flange has survived. The fabric is hard, orange on the exterior and with a grey core. There are traces of cream slip on the flange, which is almost flat with a gentle curve. This stamp is identical to others found at Vindolanda (SF4864, SF5846, SF8376, SF8902, SF9109 and SF15891) and is also identical to Eric Birley’s variety B (Birley and Sheehan-Finn, 2011; Birley and Richmond, 1938, 243-94, Figure 10).

The interpretation of the potter’s name is left open because the overwhelming majority of the stamp types read simply SVLLO. The bibliography for Sullon(us, -ius, -iacus) has been published elsewhere (Birley and Sheehan-Finn, 2011).

Vorolas (probably)
SF16919 V12-04B  AD 130s+  Period VI+
Stamp: may read VOROLA [-] (LA ligatured; complete but very worn)
The fabric is smooth and hard, buff coloured on the exterior with a slightly paler core and there are red (ironstone?) and micaceous inclusions. The vessel has a buff slip and the trituratio grit is composed of brown and white particles that are worn smooth. There is a small groove under the outer edge of the hooked flange.

² The Sullon(us, -ius, -iacus) stamps from Vindolanda are now numerous enough to warrant a paper of their own. Some preliminary comments are made in the discussion that follows the catalogue and will be expanded elsewhere (Sheehan-Finn, forthcoming).
It is possible that there is another letter but the wear on the edge of the stamp makes it very difficult to be sure. If the final letter is ‘S,’ the correct interpretation ought to be Vorolas, a Linconshire region potter working c.AD140-200 (Tyers 2012b). This identification is not completely certain and more work is needed on this stamp.

Illiterate potter
SF10788 V07B-11 c.AD165-205 Period VIA
Stamp: reads XHHIII (complete and in good condition)
A small fragment of the rim and body of the vessel remains. The fabric is coarse, cream-coloured throughout and the trituration grit is composed of variegated white, brown, grey and black particles that are worn smooth. This is a well-made stamp of an illiterate potter.

Illiterate potter
SF16818 V12-56B c.AD120+ Period V+
Stamp: MMXIII/MMXIII (not certain if letters are intended)
There is a curious sub-circular stamp above the double stamp. It probably contains a straight vertical line with a small semi-circle above it. The two lines of the stamp appear to be identical. A small fragment of the rim and body of the vessel has survived. The fabric is coarse, red-orange on the exterior and the core is grey. There are traces of cream slip on the exterior of the vessel and there is no trituration grit because it is simply worn away by heavy use. It is possible to interpret this stamp as representing a numerical value MMXIII.

Illiterate potter
SF17530 V13-03B c.AD105-120s Period IV
Stamp: IIXII or IXII (in a border)
A sherd of the flange is all that has survived. There is an internal groove and the flange is gently hooked. The fabric is hard and smoothed, buff-coloured throughout, with a brown slip on the flange. There is no trituration grit.

There is growing evidence of stamps composed of what might be interpreted as Roman numerals, but must be the work of illiterate potters. Another stamp found at Vindolanda is identical to SF17530, but came from a different vessel (Birley and Sheehan-Finn, 2011, no. 47, SF15893).

Illiterate potter
SF12608 V09B-12 AD213+ Period VII+
Atypical stamp: incised cross-hatch pattern (not illustrated)
A part of the rim and body of the vessel has been found. The flange is quite flat, the fabric is smooth and hard and pale cream-coloured throughout (pipe clay). The trituration grit is composed of uniform black particles and is worn very smooth. This is a late first century mortarium form and is residual at this level. The incision may be better interpreted as graffito, but it is included here because it appears to be a maker’s mark because it was incised before firing of the vessel occurred.

Illiterate potter
SF13847/13881 V10B-07 c.AD130-205 Period VI/VIA
Atypical stamp: abstract line pattern
Two fragments of rim with the spout and part of the body of the vessel have survived. The fabric is coarse, pale orange on the outside with a grey core and traces of cream slip on the exterior surface. The trituration grit is composed of variegated brown, white and grey particles that are worn smooth.

Potter not identified
SF10944 V08B-23 AD213+ Period VII+
Stamp: [-] (letters but illegible due to wear and damage; not illustrated)
A tiny fragment of the rim of the vessel with the stamp is all that has been found. The fabric is coarse, creamy-pink-coloured throughout and there is no trituration grit. It is not possible to identify the source of this mortarium at present.
Potter not identified
SF10954  V08B-29  AD213+  Period VII+
Stamp: Illegible
A part of the rim and body of the vessel has survived. The fabric is smooth, pinkish to cream-coloured throughout and there is no slip. The trituration grit is composed of white and brown particles that are worn smooth. The stamp shows some evidence of damage and there are letters, but a reading is not possible.

Potter not identified
SF112136  V08B-59  c.AD85-130  Period I/V
Stamp: ɅỊỊ[-] or [-]ỊỊ먼[-] (damaged stamp)
Only a small fragment of the rim and body of the vessel has survived. The fabric is coarse, orange to buff-coloured throughout and the trituration grit is composed of brown and white particles that are worn smooth. The wear and condition of the stamp make interpretation difficult, but the two lines appear to be identical and there are traces of at least one more letter on each line. The rubbing is included to demonstrate the difficulties with reading the stamp.

Potter not identified
SF12607/SF12619  V09B-09  AD213+  Period VII+
Stamp: ḤṾṢ or FA VṢ (A V ligatured; stamp is in two pieces)
Several readings are possible for this stamp, including the two given above, and the rubbing is illustrated to indicate the difficulties in reading the stamp. Two fragments of the rim of the vessel have been found. The fabric is coarse, orange-coloured on the exterior with a grey core. There are traces of cream slip on the rim of the mortarium, but no trituration grit. It is comparable with stamps from Corbridge and Newstead (Birley and Gillam, 1948, Figure 1, no. 11; and Curle, 1911, Figure 35, no. 15). Both stamps were interpreted as CAIHS (retrograde), which is completely different to this author’s efforts, again highlighting the difficulties. None of the three stamps are identical to the other and it can be said that the Vindolanda stamp resembles the Corbridge example more than the Newstead one. The condition of the Vindolanda stamp renders definitive interpretation difficult without further research.

Potter not identified
SF13742  V09B-46  AD205-212  Period VIB
Stamp: [-/-] (letters but illegible; two lines; not illustrated)
A small part of the rim and body of the vessel has been found. The fabric is coarse, pale cream-coloured throughout and the trituration grit is composed of variegated white, brown and black particles that are partially worn. The wear and condition of the stamp make interpretation impossible, but the two lines of the stamp appear identical.

Potter not identified
SF17630  V13-15B  c.AD85-120s  Period I/IV
Stamp: [-/-] (break; at least 5 letters, but illegible; not illustrated)
Part of the rim and body of the vessel has been found. The spout is complete and the flange is deeply hooked with an internal bead. The fabric is coarse, red-brown in colour throughout, and there are traces of a white slip on the flange and exterior of the vessel. The trituration grit is composed of small white particles that are worn smooth. Interpretation is not possible due to the poor condition of the stamp.

Potter not identified
SF17760  V13-04B  c.AD120-130s  Period V
Stamp: [-/-] (break; traces of at least 4 letters, but illegible; not illustrated)
The sherd is a small piece of the flange with part of a stamp and an external groove on the edge of the flange. The fabric is hard and smoothed on the surface. It is cream-coloured and there are traces of brown slip on the exterior. There is no trituration grit. Interpretation is not possible due to the poor condition of the stamp.
Potter not identified
SF17647 V13-15B c.AD85-120s Period I/IV
Stamp: Ḷ Ḷ (break across the middle; reading very uncertain; not illustrated)
There are 9 sherds of the mortarium, and parts of the base, body and flange are extant. The flange is narrow, almost flat and there is an internal bead. The fabric is red-brown in colour throughout and there are traces of white slip on the flange and the exterior of the vessel. The trituration grit is composed of white particles that are worn smooth. Interpretation is not possible due to the condition of the stamp.

Figure 2: Mortarium stamps from Vindolanda Area B 2007-2012 (scale 1:2).
Analysis and Discussion of Mortarium Stamp Data from Vindolanda Area B 2007-2012

Mortarium stamps from Vindolanda form a significant collection from a single site in the northern frontier zone and the addition of thirty-two more examples from Area B is a significant adjunct to the mortarium stamps already recorded at the site (Birley and Sheehan-Finn, 2011). Mortarium stamp evidence from excavation in Area B 2007-2012 at Vindolanda indicates that, for mortaria made in the north of England close to and in the northern frontier zone between c. AD100 and c. AD160, a supply route to Vindolanda from Corbridge along the Stanegate road may have been preferred over a supply route from Carlisle along the same road.10 The relevant stamps and the potters are discussed first and then some tentative suggestions are made about this supply preference.

Of the nineteen identified mortarium stamps reported here, only five were almost certainly manufactured outside of the northern frontier zone. Just two stamps were manufactured post-AD 160 (one from the Mancetter-Hartshill potteries (MH) and one from the Linconshire Region workshops (LIMO)). This indicates that sourcing of stamped mortaria for use at Vindolanda tended to local suppliers wherever possible at least in the first half of the second century AD. The discussion that follows focuses on thirteen identified stamped mortaria that were manufactured in or near the northern frontier zone between c. AD100 and c. AD160 (Table 2).11

The potter Austinus is known to have worked at Wilderspool, Walton-le-Dale and Carlisle and the PDR for his work spans the Hadrianic-Antonine periods (Hartley, 2012, 112-3). A mortarium found at Vindolanda, and made by Austinus (SF10789), was in a ditch fill dating to before AD140 (V07B-21). A second mortarium stamp was also found in the same context. This is a stamp of Sullon(us, -ius, -iacus) who worked between c. AD100-140 (SF10802). This indicates that this Austinus vessel may be of Hadrianic date rather than Antonine.12 Meanwhile, evidence strongly suggests that the Sullon(us, -ius, -iacus) mortaria originated in Corbridge (Hartley, 1989, 265-66; Tyers, 2012a). The presence of a stamp of Austinus and of Sullon(us, -ius, -iacus) in the same ditch fill at Vindolanda indicates that mortaria were supplied to Vindolanda through two routes at roughly the same time, that is, from Corbridge in the east, and Carlisle in the west, along the Stanegate Road. But the question remains as to how important one supply route was over the other.

In the Vindolanda collection, there are now twenty-seven mortarium stamps from different vessels that can be attributed to the potter Sullon(us, -ius, -iacus), who was working at or near Corbridge (c. AD100-140) (Hartley, 1989, 265; Tyers, 2012a; Birley and Sheehan-Finn, 2011, no. 41). It can be said that SF10802 (and SF545913) from Vindolanda are a different type of stamp to eight varieties already known from Corbridge (Birley and Richmond, 1938, 278-82, Figures 11-12) and two other types (Birley and Gillam, 1948, 191-2, nos. 55J-K, Figure 2). It is suggested that the two new stamps from Area B at Vindolanda are an eleventh type. The stamps of Sullon(us, -ius, -iacus) Vindolanda are a significant body of evidence that mortaria were supplied in large numbers to Vindolanda from Corbridge in the first half of the second century AD.

The potter Anaus produced six of the stamped vessels reported here, and, like Sullon(us, -ius, -iacus), he may have worked at Corbridge, but at a slightly later PDR (c. AD120-c.160) (Hartley, 1989, 265; Tyers 2012a, CBMO) (Table 2). However, it is more probable that vessels of Anaus were actually produced at Binchester and/or Catterick since both sites have evidence of Anaus and other potters’ workshops there (Hartley and Tomber, 2006, 37). Corbridge may have played a role as a warehouse and distribution point for vessels of Anaus made at...
Table 2: Summary of 17 identified stamped mortaria from Vindolanda, Area B, 2007-2012.

<table>
<thead>
<tr>
<th>Potters whose stamps were found in Area B 2007-2012, and 2013</th>
<th>Production Date Range (PDR)</th>
<th>Origin of Mortarium Stamped Vessels</th>
<th>Number of Identified Stamped Vessels from Area B, 2007-2012, 2013</th>
<th>Number of Identified Stamped Vessels from Vindolanda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amenus</td>
<td>c.AD110-c.155</td>
<td>WRMO</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Anaus</td>
<td>c.AD120-c.160</td>
<td>CBMO</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Austinus</td>
<td>HAD-ANT</td>
<td>CRMO</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Coertinus</td>
<td>c.AD140-200</td>
<td>CBMO?</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Docilis 3</td>
<td>c.AD110-c.160</td>
<td>CRMO</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Esucanus</td>
<td>c.AD90-120?</td>
<td>Wroxeter?</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Felicioles</td>
<td>c.AD110-c.140</td>
<td>CBMO?</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Matugenus</td>
<td>c.AD80-110</td>
<td>VRMO</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>O(fficina) Sen(us, -ius)</td>
<td>c.AD165-185?</td>
<td>MH?</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Sullon (us, -ius, -iacus)</td>
<td>c.AD100-c.140</td>
<td>CBMO</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Vorolas?</td>
<td>c.AD140-200</td>
<td>LIMO</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

centres further south. A kiln was excavated at Corbridge, but the products of this are not identifiable in the Corbridge museum collection (Tomber and Dore, 1998, 172). According to Tomber and Dore, geophysical survey has suggested the presence of more kilns at Corbridge, but these have not been excavated and are currently not proven as kilns nor dated (Tomber and Dore, 1998, 172). The absence of kiln evidence from Corbridge tentatively supports the idea of Corbridge being a link in the storage and distribution of mortaria from workshops to the south, but it must be stressed that future work may yet identify a kiln(s) showing that Anaus also worked at Corbridge. Equally, there is no reason why Corbridge could not have been both a manufacturing centre for mortaria as well as a storage and distribution point for mortaria made elsewhere. Either way, Anaus’s work will have come to Vindolanda via Corbridge in the first half of the second century AD. All six Anaus stamps at Vindolanda broadly agree with the production date range established for this potter - the earliest context for a deposited vessel by Anaus dates to Period III/V (c.AD100-130s) (SF10868 from V07B-7).

Hartley has recently commented extensively on the different stamped mortaria of Docilis associated with kilns at or near 7a Fisher Street Carlisle (Hartley, 2012, 106-14). She has demonstrated a strong link between the Docilis who worked at Wroxeter (Docilis 1) and the Docilis who worked at Carlisle (Docilis 2) (Hartley, 2012, 112-3). Hartley

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14 Corbridge had four forts between c.AD90 and c.AD163 before stone buildings were constructed on Site 11 and south of the Stanegate road (Bishop and Dore, 1989, 3, 126-140, and Figures 3-4). Corbridge certainly had a military function in the first six decades of the second century AD. Its role in trade and supply at this time is less well-understood.

15 K. F. Hartley has identified Corbridge as a possible manufacturing site for mortaria based on the evidence of the distribution pattern of mortarium stamps for potters such as Anaus (Hartley, 1989, 265).
has also shown that the third Docilis (Docilis 3) had links with three pottery production sites, namely Wilderspool, Walton-le-Dale and Carlisle, perhaps in the form of a potter taking a die from one site to the other (Hartley, 2012, 112-113). The Vindolanda stamp from Area B 2007-2012 (SF10847) is from a die of Docilis 3, and the vessel was most likely produced in Carlisle. Hartley has dated the Carlisle work of Docilis 3 to c.AD110 (at the earliest) to c.AD160 (at the very latest) (Hartley, 2012, 113). This fits very well with the context which the Vindolanda stamp came from (V07B-36; c.AD. 120-130s; Period V/VI). The Vindolanda vessel must have been produced at the earlier end of Hartley’s date range. This stamp, like that of Austinus above, is evidence of supply to Vindolanda from Carlisle in the west (Sheehan-Finn, forthcoming).

There are now five mortaria found at Vindolanda that have the distinctive Felicioles stamp (SF8982, SF9412, SF15435, SF15694 and SF16777) (Birley & Sheehan-Finn, 2011, nos. 14A-D; Sheehan-Finn, forthcoming). Hartley has suggested that the fabric indicates production at a location in Cumbria, but that the distribution of the stamps makes Corbridge a more likely origin (Hartley, 2010, 83, and Figure 61, no. 11). The potters’ work indicates a production range within c.AD110-140 (Hartley, 2010, 83). This question of the origin his work is a problem that needs to be resolved if supply of mortaria to Vindolanda is to be understood more fully. However, it is possible to make some preliminary suggestions even without resolution to this problem.

Five potters, Austinus, Anaus, Docilis 3, Felicioles and Sullon(us, -ius, -iacus), have been analysed because they provide evidence of stamped mortaria manufactured within or close to the Northern Frontier zone that reached Vindolanda during the first six decades of the second century AD. These five potters are represented in thirteen stamps from Area B 2007-2012 and Area B 2013 (Table 2). If Felicioles was a Corbridge potter, or his work was warehoused there before transport to Vindolanda, then 11/13 Area B stamps (85%) arrived at Vindolanda after dispatch from Corbridge. Even if Felicioles is later shown to be a Carlisle or western potter, then 10/13 stamps from Area B (77%) originated at Corbridge. The total number of stamps from Vindolanda for each of these five potters has been included in the last column of Table 2 for comparison with the Area B 2007-2012. Once expanded to include all of the identified mortarium stamps from Vindolanda, these five potters are represented by 52 mortarium stamps in total. Counting Felicioles as a Corbridge potter, 41/52 stamped vessels at Vindolanda (79%) originated from Corbridge in the first six decades of the second century AD. This figure would reduce to 36/52 (69%) should Felicioles’ mortaria be proved to originate from Carlisle or a western pottery.

These percentages suggest that, of stamped mortaria manufactured in the northern frontier zone from c.AD100-c.AD160, more than two thirds of those found at Vindolanda came through Corbridge and were supplied from the east of the province, whilst less than one third were supplied to Vindolanda from Carlisle in the west of the province. There must be a good reason for this discrepancy given that Carlisle is known to have had workshops of significant potters such as Austinus and Docilis 3 at this time (Hartley, 2012, 112-3).

Distance from production site to site of use is one factor to consider. It is almost double the distance from Vindolanda to Carlisle (24.5 miles/39.4 kilometres) than from Vindolanda to Corbridge (13.5 miles/21.7 kilometres) along the Stanegate Road (Breeze and Dobson, 2000, 20, Table I). This represents roughly two days military march to travel from Carlisle to Vindolanda and one day to travel from Corbridge to Vindolanda (Breeze and Dobson, 2000, 17). Presumably carts laden with pottery and other goods would take slightly longer to travel than marching soldiers and this might go some way towards explaining why there are more stamped mortaria from Corbridge than Carlisle at Vindolanda. However, bulky goods, such as olive oil, wine, samian ware, etc., were brought to Vindolanda from continental provinces regularly, and the much smaller distances involved locally should not prove such a barrier to local trade and transport. Another explanation must be sought for the discrepancy.

The years c.AD100-160s encompass at least four fort periods at Vindolanda (III-VI) (Birley, 2009, 63-133, and Appendix I, 183). Within these six decades there is a move from timber construction to more permanent stone construction at Vindolanda, with the construction of the fort known as Stone Fort I from the AD130s onwards (Period VI/VIA at Vindolanda) (Birley, 2009, 117-133). Beyond Vindolanda, these six decades also encompass the establishment of a frontier zone, the building of Hadrian’s Wall and its associated forts and Vallum,
the abandonment of the Hadrianic Wall forts, the establishment of the Antonine Wall on the Forth Clyde isthmus, and the abandonment of the Antonine Wall and re-establishment of the Hadrianic Wall frontier by about c.AD160s (Breeze & Dobson, 2010, 13-133). These six decades are a time of enormous change at Vindolanda and in the region at large, with the need to accommodate changing demands for supplies of all kinds. The result is, ultimately, the establishment of a more or less permanent military zone, with a large community of military and associated personnel needing regular supplies.

It seems that the presence of the potters at the sites they chose to work at within the northern frontier zone (or perhaps the sites that were chosen for them to work in) must be tied to at least some of the changes that took place during these years. It follows that the evidence of stamped mortaria made during these years at sites in the frontier zone, but found at Vindolanda, must also reflect changes associated with an evolving frontier zone. Furthermore, specific historical circumstances in the northern frontier zone must provide the answer as to why Corbridge supplied the majority of stamped mortaria to Vindolanda, while Carlisle was a supplier of stamped mortaria, but a much less significant one, for the people of Vindolanda between c.AD100-c.AD160.

Although there is much more work to be done on the mortaria (stamped and unstamped) from Vindolanda, together with comparative work with vessels from other sites in the northern frontier zone, it is likely that the supply pattern became established in the years preceding and during the construction of Hadrian’s Wall (that is, from the last years of the second century AD up to around c.AD130). The earliest supplier of stamped mortaria to Vindolanda from within the northern frontier zone, and within this time-frame, is the potter known as Sullon(us, -ius, -iacus) who, as stated above, most likely worked at Corbridge c.AD100-c.140. His work is also the most common among the stamped mortaria from Vindolanda overall (Table 2 and Birley and Sheehan-Finn 2011, no. 41). His mortaria will have been arriving at Vindolanda before, during and probably after, the years of warfare in the north of Britain during the first years of Hadrian’s reign as emperor, which was probably resolved by the time or when Hadrian arrived in Britain in AD122 (Birley, 2013, 1-13). The large number of stamped examples made by Sullon(us, -ius, -iacus) found at Vindolanda are good evidence that Corbridge was a major supplier of mortaria to Vindolanda at this time.

Meanwhile, Austinus, Docilis 3, Felicioles and Anaus will have begun to produce mortaria in the northern frontier zone and supplied their wares to the occupied sites in the region slightly later than Sullon(us, -ius, -iacus) (see Table 2). By then the pattern of Corbridge as a major was already becoming established and it is arguable that the disruption caused by the warfare at the beginning of Hadrian’s reign, may have played a role in cementing this pattern into the middle decades of the second century AD. Many scholars now believe that the construction of Hadrian’s Wall began before the emperor’s arrival in Britain (Graafstal, 2012, 123-184 is the most recent account and analysis of the planning and order of construction). Such a project will have funnelled local and long-distance suppliers and supplies of all kinds to the northern frontier zone ahead of and during the building project.

The role of Corbridge as a ‘hub’ in the supply route to and from forts in the region is well attested archaeologically from the Antonine period and onwards into the third century (Anderson, 1992, 71-75). However, the Vindolanda writing tablets provide some supporting evidence that Corbridge was already important to the people of Vindolanda in the late first and early second century AD. A simple count of writing tablets that mention Coria (Corbridge) and Luguvallium (Carlisle) is revealing. There are eight known references to Corbridge and only two references to Carlisle in the writing tablets and these are summarised in Table 3 (data extracted from Bowman and Thomas, 1993; Bowman and Thomas, 2003).

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6 For note that ‘second war’ assumed historical by Graafstal on p. 123 of his paper is not given much credence by other scholars despite their general assessment of the soundness and relevance of the majority of that work. Breeze, Dobson, and Maxfield finally prefer the date of AD122 for Hadrian’s visit to Britain after detailed analysis of sources and scholarly tradition and see no need for a war after that in the mid-AD 120s (2012, 17-30). Prof. Anthony Birley also believes that the weight of the evidence now indicates that the view of cessation of conflict by AD122 at the latest is the correct interpretation (Birley A. R., forthcoming and pers. comm.).

7 The table excludes all probable or possible references to Coria (Corbridge) in the following seven writing tablets: App.292.a.4, 312.back 1; 412; 493.a; 87.722; 598.c.8; and 814.1 (Bowman and Thomas, 1993; Bowman and Thomas, 2003). The author was not able to find other probable or possible references to Luguvallium in the Vindolanda Writing Tablets.
<table>
<thead>
<tr>
<th>Writing Tablet Reference Number</th>
<th>Type of Document</th>
<th>Place</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>154.7</td>
<td>Military Strength Report</td>
<td>Coria Corbridge</td>
<td>Evidence that men from Vindolanda (COH I Tungorum) were based at Corbridge for a time in Period I (c.AD85-c.90). See also Tab 857, a strength report from the outermost Period I ditch, which mentions the same prefect (Bowman, Thomas and Tomlin, 2010, 196-198; Birley, A.R., 2002, 192, Addendum Inv. 01-15)</td>
</tr>
<tr>
<td>175.3</td>
<td>Military Letter</td>
<td>Coria Corbridge</td>
<td>Messicus wants permission to go to Corbridge on a period of leave</td>
</tr>
<tr>
<td>266.2</td>
<td>Correspondence of Flavius Cerialis</td>
<td>Coria Corbridge</td>
<td>Request for one of Cerialis’ men or household to travel to Corbridge to collect item(s) unknown in Period III</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A list of fowl (chickens and/or geese), some of which were sent from Vindolanda to Corbridge</td>
</tr>
<tr>
<td>611.b.i.5</td>
<td>Correspondence of Flavius Genialis Letter</td>
<td>Coria Corbridge</td>
<td>Invitation to Genialis to travel to see Haterius Nepos, probably, at Corbridge in the mid-90s AD</td>
</tr>
<tr>
<td>617.3</td>
<td>Correspondence of Flavius Cerialis</td>
<td>Coria Corbridge</td>
<td>A reference to someone travelling to or from Corbridge after a dinner party in Period III</td>
</tr>
<tr>
<td>670.A address</td>
<td>Letter from Martius to Victor</td>
<td>Coria Corbridge</td>
<td>Unusual in that it is as late as Period VI Victor is at Coria, Martius is at Vindolanda</td>
</tr>
<tr>
<td>App.176.4</td>
<td>Fragmentary letter</td>
<td>Coria Corbridge</td>
<td>Something or someone definitely at Corbridge</td>
</tr>
<tr>
<td>211.2</td>
<td>Letter to Iulius Verecundus</td>
<td>Luguvalium Carlisle</td>
<td>The writer is at Carlisle and has written to Verecundus about visiting him at Vindolanda (Period II)</td>
</tr>
<tr>
<td>250.9</td>
<td>Correspondence of Flavius Cerialis</td>
<td>Luguvalium Carlisle</td>
<td>Request from Karus to Cerialis to recommend Brigonius to Annius Questor, regional centurion at Carlisle (Period III)</td>
</tr>
</tbody>
</table>

Table 3: Summary of the direct references to Coria (Corbridge) and Luguvalium (Carlisle) in the Vindolanda Writing Tablets (Bowman and Thomas, 1993; Bowman and Thomas, 2003).
It may not be a coincidence that Corbridge features more prominently than Carlisle in the Vindolanda writing tablets. This could indicate that there was more contact between Vindolanda and Corbridge than between Vindolanda and Carlisle in the last years of the first century AD and the early second century AD. The later tablet (Tab 670.A) from an Antonine ditch at Vindolanda is addressed to Victor at Corbridge, but on its own, is not sufficient to gauge the amount of contact between the two sites in the second half of the second century AD. The point is that the writing tablet evidence does not contradict the discrepancy noted for the propensity of stamped mortaria to be supplied to Vindolanda from Corbridge rather than Carlisle in the first half of the second century AD. On the contrary, one set of data almost mirrors the other. Both support the idea that there was strong contact economically and militarily between Vindolanda and Corbridge in the first half of the second century AD and that this relationship was already evident in the last decade of the first century AD.

This is preliminary work and the author is well aware of the need to be cautious in drawing large conclusions from limited evidence. These ideas ought to be tested against archaeological evidence from Corbridge and Carlisle and a wider study of all stamped mortaria and mortaria manufactured in the northern frontier zone is needed. This work must be integrated with studies of other commodities supplied to sites within the northern frontier zone, such as samian ware, and oil and wine transported in amphorae. However, it is hoped that this preliminary work demonstrates some of the potential of studying collections of stamped mortaria as source of evidence for understanding supply patterns within the northern frontier zone of Roman Britain.

**Samian Stamps from Vindolanda Area B 2007-2012**

There are 83 stamped samian vessels from Vindolanda Area B 2007-2012. It has been possible to identify the potter and the production date range for 59 (71%) of these samian stamps. A further 22 stamps (27%) pose problems due to wear or are too fragmentary to be confident about the reading. This high number of unidentified stamps is in part a reflection of the poor preservation of some of the archaeology in Area B. One stamp (SF14659) (1%) is a cursive signature stamp and the author has not been able to identify the potter (but see Figure 4 for the rubbing). The final stamp (SF 12162) (1%) is an illiterate stamp on a cup made in central Gaul (Brenda Dickinson, pers. comm.)

The identified stamps are catalogued fully in the text. Those that could not be interpreted are summarised only in Table 4. Illustrated stamps are shown in Figures 3 and 4. Some of the stamped sherds were also found to have a graffito and this is recorded here. Evidence of re-use of a vessel for a secondary purpose is also noted (e.g. counters or pot-lids).

A discussion of points of interest follows the catalogue text. This includes preliminary analysis of the samian stamp data from Area B, and will be followed up by more detailed analysis of the entire samian stamp collection from Vindolanda, which currently comprises more than 1100 samian stamps (Sheehan-Finn, forthcoming).

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**Advocisus**

SF13822 V10B-06 AD213+ Period VII+ Dr 37
Stamp: [AD]VOCISI (mould stamp)
Advocisus Die 8a PDR: c. AD160-200 Lezoux (CG)
The stamp is incomplete, with the break occurring on the letter V. The stamp is vertical in the moulded decoration on a panelled bowl, which is typical of this potter (Hartley and Dickinson 2008a, 75-9). Exports to British sites dominate the known examples of this potter’s work (HD, 2008, 75-9).

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18 The author would like to thank Brenda Dickinson and Geoffrey Dannell for their help in identifying some of the stamps reported here. Any errors are the author’s own.
19 This brings the total number of vessels stamped by Advocisus to eleven (Sheehan-Finn, forthcoming).
20 Production Date Range.
21 Hartley and Dickinson hereafter abbreviated to HD.
Albillus i
SF13785 V10B-03 AD213+ Period VII+ Dr 31
Stamp: [ALBIL]LI
Albillus i Die 6a (probably) PDR: c. AD155-195 Lezoux (CG)
The stamp is incomplete, but the identification is probable (HD, 2008a, 119-21). Three of this potter’s stamp types (dies 2a, 2b and 6a) are common on British military sites that were reinstated about AD160 (HD, 2008a, 120). This vessel will have arrived at Vindolanda after AD160.

Albus iii
SF16748 V12-05B U/S Dr 37
Stamp: ALBI:MA (rim stamp)
Albus iii Die 2a PDR: c. AD145-180 Lezoux (CG)*
The stamp is complete and clearly legible and is stamped on the plain rim of a decorated bowl. The vessel finisher was Albus iii, who worked at Lezoux and (probably) Les-Martres-de-Veyre (CG)* (HD, 2008a, 150-2). The vessel probably arrived at Vindolanda within periods VI/VIA, being discarded sometime after that. Vessels with this die appear to be uncommon finds on British sites, although the potter’s other stamps are well represented, with just one example of a stamp with this die from Verulamium on a plain ware dish (Dr 31) reported by HD (2008a, 151).

Albucius ii
SF14604 V10B-25 c. AD85-c.130 Period I/V Dr 37
Stamp: ALBVCI (mould stamp)
Albucius ii Die 6h PDR: c. AD145-175 Lezoux (CG)
The stamp is complete and is horizontal in the moulded decoration below the beaded rim. Albucius ii was a mould maker (HD, 2008a, 137-44). Distribution of this potter’s work is widespread in Roman Britain, with large numbers also occurring in upper Germany and the Danubian region, and it has been suggested that his vessels may have come to British sites from Gallia Belgica rather than Lugdunensis (HD, 2008a, 143).

Atilianus i
SF13833 V10B-19 c. AD130s-205 Period VI/VIA Dr 33
Stamp: ATILIANIM
Atilianus i Die 5f PDR: AD170-200 Lezoux (CG) (this die)
The stamp is complete and the identification is certain (HD, 2008a, 290-4). The main distribution pattern is the Gaulish provinces and Britain (HD, 2008a, 293).

Bassus iii
SF16939 V12-113B c. AD105-120 Period IV Dr 18
Stamp: OFB[ASSI] Graffito
Bassus iii Die 2n PDR: AD85-120 La Graufesenque (SG)
The stamp is broken off on the letter B and the remainder is missing, but the identification is certain (BD pers. comm.; HD, 2008b, 36-9).

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22 This vessel may be the first evidence that this potter was involved in the production of decorated wares as the bowl finisher. HD (2008a, 130-2) has not cited any other examples of Albus iii’s stamps associated with decorated vessels.
23 This is the second example of this potter’s work found at Vindolanda. The other stamp was made with a different die on a plain ware cup (Dr 33) and was found in the north field (Sheehan-Finn, forthcoming).
24 There are now six stamps of this potter in the Vindolanda collection (Sheehan-Finn, forthcoming).
25 This is the second stamp of this potter to have been found at Vindolanda (Sheehan-Finn, forthcoming).
Biracautus\textsuperscript{26}  
SF14696 V10B-17 c.AD213-270s Period VII Dr 18/31  
Stamp: [BIRA]CAVTVSF  
Biracautus Die 1a PDR: c.AD125-150 Lezoux (CG)  
The stamp has two breaks, one on the letter C, the other on the letter F, but the identification is certain.  
Biracautus’ vessels were all made within the period c.AD125-150 and his output has been found on Roman  
sites (mostly military) in Britain and the Rhineland (HD, 2008b, 78). This vessel will have arrived at  
Vindolanda in the second quarter of the second century.  

Birrantus\textsuperscript{27}  
SF10875 V07B-07 c.AD100-130s Period III/V Dr 18/31  
Stamp: [BI]RRANTVS (dot under \(\Lambda\))  
Birrantus i Die 2a PDR: AD110-140 Lezoux (CG)  
The stamp is worn and there is a break before the R, but the identification is certain (BD, pers. comm.; HD,  
2008b, 82-3).  

Carantas\textsuperscript{28}  
SF10842 V07B-36 c.AD120-130s Period V Dr 15/17 or 18  
Stamp: [C|AR]ANT-F (NT ligatured) Counter  
Carantus i Die 8a PDR: AD65-95 Le Graufesenque (SG)  
The stamp is broken off on the first \(\Lambda\), but the identification is certain (BD pers.comm; HD, 2008b, 236-8).  

Cariatius\textsuperscript{29}  
SF10785 V07B-08 c.AD213+ Period VII+ Dr 15/17R or 18R  
Stamp: [CARIAT]VS-  
Cariatius Die 1a PDR: AD80-110 Le Graufesenque (SG)  
The stamp is broken off before the letter V, but the end of this stamp is distinctive and the identification is  
certain (BD, pers. comm.; HD, 2008b, 248).  

Cinnamus ii\textsuperscript{30}  
SF10870 V07B-2 AD105-130s Period IV/V Dr 37  
Stamp: [CINN]AMI (retrograde; mould stamp)  
Cinnamus ii Die 5b PDR: AD135-180 Lexoux (CG)  
The stamp is broken off on the letter A, but it is a distinctive stamp and the identification is certain. The  
stamp is vertical in the moulded decoration on a panelled bowl (HD, 2008c, 22-31). The 5b die is very common  
on decorated ware and is one of the earlier dies used on his decorated forms (HD, 2008c, 29).  

Cinnamus ii  
SF12625 V09B-04 AD213+ Period VII Dr 37  
Stamp: [CINNA]MI (retrograde; mould stamp)  
Cinnamus ii Die 3b PDR: AD135-180 Lexoux (CG)  
The stamp is broken off before the letter M, but it is a distinctive stamp and the identification is certain. The  
stamp is vertical in the moulded decoration on a panelled bowl (HD, 2008c, 22-31). The 5b die is very common  
on decorated ware and is one of the earlier dies used on his decorated forms (HD, 2008c, 29).  

\textsuperscript{26} This is the second stamp of Biracautus to have been found at Vindolanda. The other stamp was also on a Dr 18/31 vessel and  
was made with the same die (Sheehan-Finn, forthcoming).  
\textsuperscript{27} This is the second stamp of this potter to have been found at Vindolanda (Sheehan-Finn, forthcoming).  
\textsuperscript{28} There is one other vessel stamped by this potter found at Vindolanda (Sheehan-Finn, forthcoming).  
\textsuperscript{29} This is the first recorded vessel of Cariatius found at Vindolanda.  
\textsuperscript{30} Cinnamus ii is now represented on thirteen stamps at Vindolanda (Sheehan-Finn, forthcoming).
Cintugenus\textsuperscript{31} 
SF14690 V10B-58 c.AD130-205 Period VI/VIA Dr 33
Stamp: CIN\{T-VGENI\}
Cintugenus Die 3a PDR: c.AD155-180 Lezoux (\& Lubié) (CG)
The stamp is broken off after the letter N and the remainder is missing, but the identification is certain. Die 3a stamped vessels were made at Lezoux and are the commonest of this potter’s output (HD, 2008c, 33). Cintugenus’ products are well-represented on military sites in Britain and also to a slightly lesser extent on sites close to the river Danube (HD, 2008, 32-3). This vessel will have arrived at Vindolanda in the mid- late second century and was out of use by period VII.

Cintusmus i\textsuperscript{32} 
SF10916 V08B-16 AD213-270s Period VII Dr 18/31
Stamp: CINTV\{SMF\} (NT ligatured)
Cintusmus i Die 4a PDR: c.AD140-180 Lezoux (CG)
The stamp is broken off on the letter V and the remainder is missing, but the identification is certain (HD, 2008c, 38-43).

Cracisa\textsuperscript{33} 
SF13720 V09B-54 AD213+ Period VII+ Dr 18/31R
Stamp: [CRA]CISAF
Cracisa Die 1a PDR: c.AD135-180 Le Pont-des-Rèmes (A) (EG)
The stamp is broken off before the letter C and the identification is certain (HD, 2008c, 165-6). The products of Argonne potteries did not reach British sites in huge numbers and the fact that this potter’s work is represented in Britain has been noted as unusual (HD, 2008c, 166). A stamp of this potter has also been found at Housesteads (HD, 2008c, 165).

Crassiacus\textsuperscript{34} 
SF12616 V09B-15 AD213+ Period VII+ Walters 79R
Stamp: [CRA\textsuperscript{265}SI]ACVSF
Crassiacus Die 1a PDR: c.AD180-220 Rheinzabern (EG)
There is a break on the letter A and the beginning of the stamp is missing. However, the identification is certain (HD, 2008c, 170-1). This potter’s working life is believed to have been relatively short and there is some doubt that he was making pottery as late as c.AD220 (HD, 2008c, 171).

\textsuperscript{31} There are just two stamps of Cintugenus from the site so far. The other stamp is also on a Dr 33 cup and was made with the same die (Sheehan-Finn, forthcoming).
\textsuperscript{32} The work of Cintusmus i is now represented very well at Vindolanda. The two stamps reported here bring the current total of Cintusmus stamps from Vindolanda to thirteen (Sheehan-Finn, forthcoming).
\textsuperscript{33} This is the first example of this potter’s work found at Vindolanda.
\textsuperscript{34} There are just two examples of this potter’s work at Vindolanda. The other is a stamp made with the same die on a Dr 32 plain bowl (Sheehan-Finn, forthcoming).
Cucalus
SF14675 V10B-47 AD213-270s Period VII Dr 33
Stamp: CVCALIM
Cucalus Die 2f PDR: c.AD140-170 Lezoux (CG)
The stamp is complete and the identification is certain (HD, 2008c, 213-4). This potter’s work is attested on military sites in Roman Britain, including early Antonine forts in Scotland such as Newstead and Bearsden, and it is this information that has been used as evidence that his output began well before c.AD160 (HD, 2008c, 214). This is the only example of this potter’s work recorded at Vindolanda to date.

Cuccillus i\(^{35}\)
SF14616 V10B-44 AD213+ Period VII+ Dr 31R
Stamp: CVCCIL·LI Graffito: X (on the underside of the base)
Cuccillus i Die 6-a PDR: c.AD145-180 Lezoux (CG)
The stamp is complete and the identification is certain (HD, 2008c, 215-6). The use of Antonine samian forms and the presence of his work on military sites in Scotland indicate this date range (HD, 2008c, 216).

Dagomarus
SF16877 V12-05B U/S Dr 27
Stamp: DAGOMARVS F
Dagomarus Die 4c PDR: c.AD100-140 Les-Martres-de-Veyre/Lezoux (CG)
The stamp is complete and the identification is certain (HD, 2008c, 236-40). Die 4c was used at both Les Martres-de-Veyre and Lezoux, so it is difficult to ascertain where the vessel was actually made (HD, 2008c, 239). Interestingly the vessels of Dagomarus that have been found at Hadrian’s Wall sites tend to have been stamped with the die 4c (HD, 2008c, 239). Another example of Dagomarus’ work has been found at Vindolanda (SF3151) and was stamped with die 3b (Sheehan-Finn, forthcoming; BD pers. comm.). Die 3b and 3a vessels were mainly made at Les Martres-de-Veyre (HD, 2008c, 239).

Doeccus i (Doveccus)\(^{37}\)
SF16728 V12-29B c.AD160-212 Period VIA/VIB Dr 37
Stamp: DOIICCIM (retrograde; mould stamp)
Doeccus i (Doveccus) Die 4a tab PDR: AD170-200 Lezoux/Lubié (CG)
The stamp is in the mould and is worn, but legible and the identification is certain. It is a retrograde stamp with hollow letters (HD, 2008c, 296-301). Technically, it is the mould maker’s mark and the bowl finisher might have been a potter other than Doeccus i. His moulds may have continued to be used later than AD200 (HD, 2008c, 300).

Doeccus i (Doveccus)
SF14655 V10B-32 AD213+ Period VII+ Dr 33
Stamp: [D]OVIICCVS
Doeccus i (Doveccus) Die 13b PDR: AD170-200 Lezoux/Lubié (CG)
The stamp is broken off before the letter O, but the missing letter is D and the identification is certain (HD, 2008c, 296-301).

Flavius Germanus\(^{38, 39}\)
SF14698 V10B-43 c.AD105-120 Period IV Dr 18
Stamp: FFLA\{GER\}- (FL ligatured, with the horizontal on the L running to the left instead of to the right, representing L reversed)

\(^{35}\) There are now three stamps of Cucillus found at Vindolanda (Sheehan-Finn, forthcoming).
\(^{36}\) Brenda Dickinson.
\(^{37}\) To date, these two stamps bring the total number of stamps of Doeccus i (Doveccus) identified at Vindolanda to twelve (Sheehan-Finn, forthcoming).
\(^{38}\) Potter also known as L. Flavius Germanus.
\(^{39}\) To date, these two stamps bring the total number of stamps of Flavius Germanus identified at Vindolanda to sixteen and they warrant further study and comment (Sheehan-Finn, forthcoming).
Flavius Germanus Die 4b” PDR: c.AD85-120 Banassac/La Graufesenque (SG)
The stamp is broken off after the Λ symbol, but the identification is certain (HD, 2009a, 69-77). Most of this potter’s work was produced at La Graufesenque and it is almost certain that this vessel was made there (HD, 2009a, 76).

Flavius Germanus
SF16938 V12-48B AD213-270s Period VII Dr 18/31
Stamp: [OFF]CER
Flavius Germanus Die 9h PDR: c.AD85-120 Banassac/La Graufesenque (SG)
The stamp is broken off before the letter C, which is taken to represent G, but the identification is certain (HD, 2009a, 69-77). Most of his work was produced at La Graufesenque and it is almost certain that this vessel was made there (HD, 2009a, 76).

Genetius ii40
SF13739 V09B-41 AD130-205 Period VI/VIA Dr 31
Stamp: GENETIM
Genetius ii Die 4a PDR: c.AD155-190 Lezoux (CG)
The stamp is broken off on the second letter E, but the identification is certain (HD, 2009a, 166-7).

Genetius ii
SF16936 V12-110B AD213+ Period VII+ Dr 18/31
Stamp: GENETIM
Genetius ii Die 4a PDR: c.AD155-190 Lezoux (CG)
The stamp is complete, but has been worn, especially in the centre. The letter G is distinctive and the wear on the second E is a sign of an older die and this is common in these stamps (HD, 2009a, 166-7, and n.4).

Genialis iv41
SF17611 V13-08B AD120s-160s Period V/VI Dr 33
Stamp: GENIALIS-F Graffito: XX (on underside of the base)
Genialis iv Die 6a PDR: AD150-180 Lezoux (CG)
The stamp is complete and the identification is certain (HD, 2009a, 169-172).

Ioenalis42
SF10985 V08B-35 AD213-270s Period VII Dr 18/31
Stamp: IOENALIS
Ioenalis Die 2a43 PDR: AD100-130 Les-Martres-de-Veyre/Lezoux (CG)
The dish has been burnt black, but the stamp is complete and the identification is certain (HD, 2009a, 290-2).

Iullinus i44
SF16967 V12-114B c.AD105-120s Period IV Dr 15/17
Stamp: IVLLIN[ Iullinus i Die UNK PDR: AD65-110 La Graufesenque (SG)
The stamp is worn and the identification is still open to question. The stamp is definitely on a Flavian vessel made in La Graufesenque (BD pers. comm.; HD, 2009a, 361-4).

40 There are now four stamps of this potter found at Vindolanda (Sheehan-Finn, forthcoming).
41 This stamp brings the total number of stamps of Genialis iv at Vindolanda to four (Sheehan-Finn, forthcoming).
42 One other vessel with this stamp has been identified at Vindolanda (SF16481) (Sheehan-Finn, forthcoming).
43 This die was used at Les-Martres-de-Veyre and therefore this vessel originated there.
44 If the identification is correct, there are now eleven stamps of Iullinus i in the Vindolanda collection (Sheehan-Finn, forthcoming).
Iulius Numidius\textsuperscript{45, 46}
SF12676 V09B-41 AD130-205 Period VI/VIA Dr 33
Stamp: NVMDI-M
Iulius Numidius Die 5a PDR: c.AD155-200 Lezoux (CG)
The vessel base had been modified for re-use as a counter or a small pot-lid. The stamp is complete and the identification is certain (HD, 2009a, 349-50). This potter’s work is most often found on sites in Britain (HD, 2009a, 349).

Lipuca
SF16882 V12-05B U/S Dr 18/31
Stamp: LIPVCA
Lipuca Die 2b PDR: c.AD130-165 Colchester (B); La Madeline (EG)
The stamp is complete and the identification is certain (HD, 2009b, 83-4). This potter worked at several centres, Colchester (B), La Madeline and, possibly, Sinzig (EG) (HD, 2009b, 84). This die was used at both Sinzig and Colchester (HD, 2009b, 84). This is the first stamp of this potter found at Vindolanda.

Littera i\textsuperscript{47}
SF10955 V08B-29 AD213+ Period VII+ Dr 31
Stamp: [L]ITTERAF (dash in A)
Littera i Die 2a PDR: AD120-150 Lezoux (CG)
The stamp is worn at the left edge and the letter L is missing. The identification is certain (BD pers. comm.; HD, 2009b, 84-6).

Macrianus\textsuperscript{48}
SF10906 V08B-07 AD213-270s Period VII Dr 31
Stamp: MAC[\textsuperscript{A}NIA] (dot under the A) Counter Graffito: X IV[-] (underside of base)
Macrianus Die 1a PDR: c.AD155-190 Les Martres-de-Veyre (CG)
The stamp is broken off after the letter I, but the identification is certain (HD, 2009b, 188-9). The secondary use of the stamped portion of the vessel will have extended the use-life considerably.

Marcellinus\textsuperscript{49}
SF10886 V07B-36 c.AD120-130s Period V Dr 18/31
Stamp: MARCILLIN (MA ligatured)
Marcellinus Die 1c PDR: c.AD130-160 Les Martres-de-Veyre (CG)
The stamp is complete and the identification is certain (HD, 2009b, 259-60). The sherd is not significantly worn and the vessel must have broken and been deposited not long after its arrival at Vindolanda.

Marcus v\textsuperscript{50}
SF16598 V11-8B c.AD130-205 Period VI/VIA Dr 31R
Stamp: MARCIF (dot under A; upper horizontal stroke of F shortened)
Marcus v Die 7b PDR: AD160-c.210 Lezoux (CG)
The stamp is complete, but it was broken across the middle letters and has since been repaired. The vessel is (now) almost complete. The identification of the potter and die is certain (HD, 2009b, 280-4). This vessel is most likely to have been made at Lezoux.

\textsuperscript{45} Potter also known as Iul- Numid-.
\textsuperscript{46} There are three more vessels with stamps of Iulius Numidius at Vindolanda (Sheehan-Finn, forthcoming).
\textsuperscript{47} There is one other stamp of this potter from Vindolanda (Sheehan-Finn, forthcoming).
\textsuperscript{48} There are five stamps of Macrianus in the Vindolanda collection (Sheehan-Finn, forthcoming).
\textsuperscript{49} Four stamps of Marcellinus have been found at Vindolanda to date (Sheehan-Finn, forthcoming).
\textsuperscript{50} There are seven vessels at Vindolanda made by Marcus v (Sheehan-Finn, forthcoming).
Martius iv
SF16581  V11-12B  c.AD165-212  Period VIA/VIB  Dr 33
Stamp: MARTIM
Martius iv  Die 1b  PDR: AD155-190  Lezoux (CG)
The stamp is complete, although broken in two pieces, and the identification is certain (HD, 2009b, 329-31).

Masclus i (Masculus)
SF10957  V08B-29  AD213+  Period VII+  Dr 18
Stamp: OF·MASCI
Masclus i (Masculus)  Die UNK  PDR: AD35-65  La Graufesenque/Millau, Rajol (SG)
The stamp is complete and, given the form, the vessel is most probably the work of Masclus i (HD, 2009b, 344-56). A note of caution must be applied to the interpretation because the stamp is not identical to any of this potter’s stamps already published and it is either a new die of this potter’s work, or there is room for reinterpretation.

Memor
SF16778  V12-46B  AD213+  Period VII+  Dr 27g
Stamp: ΛEMORIS (ΛE represents ME ligatured)
Memor  Die 3a'  PDR: c.AD60-90  La Graufesenque (SG)
The stamp is complete and the identification is certain (HD, 2010, 74-8).

Mercator i
SF13705  V09B-23  c.AD120-130  Period V  Dr 37 (small sherd)
Stamp: ΟΤΑΟΕΕ [M] (retrograde; R reversed; mould stamp)
Mercator i  Die 7a-tab  PDR: c.AD70-110  La Graufesenque (SG)
The stamp is broken and the letter M is missing and the identification is certain (HD, 2010, 81-6).

Miccio vii
SF12696  V09B-46  AD205-212  Period VIB  Dr 33
Stamp: MICCIO◊F (diamond shaped stop between O and F)  Counter
Miccio vii  Die 1a  PDR: c.AD150-180  Colchester (B)/Sinzig (EG)
The stamp is complete and the identification is certain (HD, 2010, 104-5). There is evidence that Miccio vii worked at both Colchester (B) and Sinzig (EG) and this vessel could have been made at either of these centres (HD, 2010, 104-5). This vessel has been re-shaped and used as a counter and this suggests that it was deposited sometime after the initial production date. Some further comment is made below.

Miccio vii
SF16755  V12-29 B  c.AD160-212  Period VIA/VIB  Dr18/31
Stamp: MICC[IOF]
Miccio vii  Die 1a  PDR: c.AD150-180  Colchester (B)/Sinzig (EG)
The stamp is broken off after the letter C, but the identification is certain (HD, 2010, 104-5).

Note that most of Miccio vii’s products from British sites are considered to have been made in Colchester, apart from the Corbridge and Newstead vessels, both stamped with the 1a die, and probably made in Sinzig (HD, 2010, 104-5). It is likely that the two vessels reported here were made at Sinzig (BD, pers. comm.).

51 There are five other vessels at Vindolanda made by Martius iv (Sheehan-Finn, forthcoming).
52 There are ten more vessels with stamps of Memor at Vindolanda (Sheehan-Finn, forthcoming).
53 There are five more vessels with stamps of Mercator i at Vindolanda (Sheehan-Finn, forthcoming).
54 There are now four vessels stamped by Miccio vii at Vindolanda (Sheehan-Finn, forthcoming).
Paternus v
SF13774 V09B-66 c.AD120-130s Period V Dr 37
Stamp: PARNII (retrograde; small horizontal stroke at top of Λ indicating ΛT ligatured; mould stamp)
Paternus v Die 7a PDR: c.AD150-185 Les Martres-de-Veyre/Lezoux (CG)
The stamp is complete and the identification is certain. The stamp is in the mould of this decorated bowl (HD, 2011, 58-63). Paternus v definitely worked at Les-Martres-de-Veyre, Lezoux and probably at Toulon-sur-Allier (CG) (HD, 2011, 62).

Patricius i
SF16964 V12-115B c.AD105-120 Period IV Dr 27g
Stamp: PATRICI
Patricius i Die 13b PDR: c.AD65-90 La Graufesenque (SG)
The stamp is complete and the identification is certain (HD, 2011, 70-85). Further comment is made below.

Patricius i
SF14679 V10B-56 c.AD100-205 Period III/VIA Dr 18
Stamp: PATRICI
Patricius i Die 13e PDR: c.AD65-90 La Graufesenque (SG)
The stamp is complete and the identification is certain (HD, 2011, 70-85).

Paullus v
SF6700 V09B-66 c.AD120-130s Period V Dr 31
Stamp: PAVLI·M]
Paullus v Die 4a PDR: c.AD165-200 Lezoux (CG)
The stamp is broken off after the letter V, but the identification is certain (HD, 2011, 112-5).

Peregrinus i
SF14652 V10B-45 c.AD105-120 Period IV Dr 18
Stamp: PEACRIV (worn version of a die that originally read PEREGRIN, N reversed)
Peregrinus i Die 3a (ii) PDR: c.AD65-85 La Graufesenque (SG)
The stamp is damaged at the far right edge on the letter V, but the identification is certain (HD, 2011, 127-9).

Pontus (Pontius)
SF10872 V07B-74 c.AD85-130 Period/I Dr 33
Stamp: [O]FPONTI (NT ligatured)
Pontus (Pontius) Die 8e PDR: c.AD65-95 La Graufesenque (SG)
The stamp is broken off before the letter F, but the identification is certain (HD, 2011, 170-7). His work is uncommon in the northern part of Roman Britain and this is the first example of his work found at Vindolanda (HD, 2011, 170-7).

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55 There are nine more vessels stamped by Paternus v at Vindolanda, including SF4752/4829, SF3217/VF/61, SF5025 and VH57 reported by HD (2011, 58-60). Five more will be reported by Sheehan-Finn (forthcoming).
56 He may be the same man as C. Silvius Patricius (HD, 2011, 83).
57 There are now eleven vessels stamped by Patricius i found at Vindolanda (Sheehan-Finn, forthcoming).
58 There are now six vessels stamped by Paullus v found at Vindolanda (Sheehan-Finn, forthcoming).
59 There are three more stamps of this potter in the Vindolanda collection (Sheehan-Finn, forthcoming).
60 But note that HD stated that the stamps under this heading may be those of two potters (HD, 2011, 176).
Quadratus iii\textsuperscript{61}
SF13763 V09B-61 AD213+ Period VII+ Dr 31
Stamp: QUADRAT[I]t
Quadratus iii Die 1b PDR: c.AD155-185 Lezoux (CG)
The stamp is broken off after the letter T, but the identification is certain (HD, 2011, 292-3).\textsuperscript{62}

Reburrus ii\textsuperscript{61}
SF16675 V12-28B c.AD213-270s Period VII Dr 44
Stamp: REBVRRI-OFF
Reburrus ii Die 3b PDR: c.AD140-170 Lezoux (CG)
The stamp is complete and the identification is certain (HD, 2011, 327-31).

Reburrus ii
SF13737 V09B-46 AD205-212 Period VIB Dr 33
Stamp: REBVRRI-OFF (OF ligatured)
Reburrus ii New Die PDR: c.AD140-170 Lezoux (CG)
The stamp is complete and the reading is certain. This is the work of the potter Reburrus ii and the vessel has been struck with a die not previously recorded (HD, 2011, 327-31).

Reginus ii\textsuperscript{64}
SF12171 V08B-61 c.AD130-205 Period VI/VIA Dr 18/31
Stamp: REGINVS-F
Reginus ii Die 2a PDR: c.AD120-150 Les Martres-de-Veyre (CG)
The stamp is complete and the identification is certain (HD, 2011, 343-5).\textsuperscript{65} The distribution of this potter’s work is heavily biased towards Britain and the two commonest dies, 1a and 2a, have been divided chronologically (2a is the earlier die) (HD, 2011, 345).

Reginus vi\textsuperscript{66}
SF16689 V12-28B c.AD213-270s Period VII Dr 39
Stamp: REGINVS
Reginus vi Die 9a PDR: c.AD155-180 Many centres (EG) (see below)
The stamp is complete and the identification is certain (HD, 2011, 349-59). Reginus vi produced pottery at the following workshops in EG: Heiligenberg, Ittenwiller, Kräherwald, Rheinzabern and Waiblingen-Beinstein (HD, 2011, 357). The die used to make this stamp was in use at both Ittenwiller and Rheinzabern to stamp plain samian ware indicating that this vessel was made at one of these two centres (HD, 2011, 357).

Roppus ii-Rut-
SF12147 V08B-59 c.AD85-130 Period I/V Dr 18/31R
Stamp: ROPPI-RV[T-M]
Roppus ii-Rut- Die 1a’’ PDR: c.AD110-135 Les Martres-de-Veyre (CG)
The stamp is broken off after the letter V, but the identification is certain (HD, 2011, 405-6).\textsuperscript{67} This is the first stamp of this potter identified at Vindolanda.

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\textsuperscript{61} This stamp brings the total number of stamps of Quadratus iii from Vindolanda to six. Three have been reported SF4738, SF4734 and SF4781 (HD, 2011, 292). The other two will be included in Sheehan-Finn (forthcoming).
\textsuperscript{62} This stamp brings the total number of stamps of Quadratus iii from Vindolanda to six. Three have been reported SF4738, SF4734 and SF4781 (HD, 2011, 292). The other two will be included in Sheehan-Finn (forthcoming).
\textsuperscript{63} There are now five stamps of Reburrus ii from Vindolanda (Sheehan-Finn, forthcoming).
\textsuperscript{64} There is one other stamp of Reginus ii at Vindolanda (SF9367) (Sheehan-Finn, forthcoming).
\textsuperscript{65} Although note that Reginus ii and Reginus iv (Lezoux) may in fact be the same person (HD, 2011, 345).
\textsuperscript{66} There are two other stamps of Reginus vi in the Vindolanda collection (Sheehan-Finn, forthcoming).
\textsuperscript{67} But note that he may be the same man as Roppus i, AD70-110 (HD, 2011, 402-405).
Sacrillus\textsuperscript{68}
SF16586  V11-08B  c.AD130-205  Period VI/VIA  Dr 31R
Stamp: SAC[RILL·I-M] (dash in R; narrow, distinctive C)
Sacrillus  Die 3a  PDR: c.AD165-200  Lezoux (CG)
The stamp is broken off on the letter R, but the identification is certain (HD, 2012a, 63-4). Sacrillus’ work occurs at forts on Hadrian’s Wall that were re-occupied after c.AD160 (HD, 2012a, 64).

Sacrillus
SF13736  V09B-61  AD213+  Period VII+  Dr 33
Stamp: SACRILLI
Sacrillus  Die 5a  PDR: c.AD165-200  Lezoux (CG)
The stamp is complete and the identification is certain (HD, 2012a, 63-4). Sacrillus’ work occurs at forts on Hadrian’s Wall that were re-occupied after c.AD160 (HD, 2012a, 64).

Sedatianus\textsuperscript{69}
SF16779  V12-38B  U/S  Dr 33
Stamp: SEDATIAN[I]
Sedatianus  Die 2b  PDR: c.AD160-200  Lezoux (CG)
The stamp is broken off after the letter N, but the identification is certain (HD, 2012a, 189-90).

Silvius ii\textsuperscript{70}
SF10967  V08B-41  c.AD105-205  Period IV/VIA  Dr 18/31
Stamp: SILVI-OF
Silvius ii  Die 1a  PDR: c.AD120-160  Les Martres-de-Veyre/Lezoux (CG)
The stamp is complete and the identification is certain (HD, 2012a, 313-5).

Tauricus i (Tauricius)
SF14623  V10B-46  c.AD100-205  Period III/VIA  Dr 31
Stamp: TAVRICIM
Tauricus i (Tauricius)  Die 4a  PDR: c.AD150-180  Lezoux (CG)
The stamp is complete and the identification is certain (HD, 2012b, 21-3). This is the first stamp of this potter to have been found at Vindolanda, but British sites have yielded most of this potter’s work (HD, 2012b, 21-3).

Vitalis ii\textsuperscript{71}
SF14686  V10B-51  c.AD100-130  Period III/V  Dr 27
Stamp: VITAI (I indicates L)
Vitalis ii  Die 26b’  PDR: c.AD70-100  La Graufesenque (SG)
The stamp is complete on a very small potsherd, but the identification is certain (HD, 2012b, 299-321). Vitalis may have been the name of the owner of a business that produced the stamps under Vitalis i and ii (HD, 2012b, 319).

The remainder of the stamps were not identified and are documented below in Table 4.

\textsuperscript{68} These two stamps now bring the total number of stamps of Sacrillus at Vindolanda to seven (Sheehan-Finn, forthcoming).
\textsuperscript{69} This stamp now brings the total number of stamps of Sedatianus at Vindolanda to four (Sheehan-Finn, forthcoming).
\textsuperscript{70} This stamp now brings the total number of stamps of Silvius ii at Vindolanda to four (Sheehan-Finn, forthcoming).
\textsuperscript{71} There are about fifteen stamps of Vitalis ii at Vindolanda (Sheehan-Finn forthcoming). Confirmation of some of these stamps is needed to be certain about the numbers.
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Table 4: Unidentified stamps on terra sigillata from Vindolanda, Area B 2007-2012.
Figure 3: Stamps on Terra Sigillata from Vindolanda Area B 2007-2012 (A- to PA-).
Analysis and Discussion of Samian Stamp Data from Vindolanda Area B, 2007-2012

The author has identified 59 samian stamps, either certainly or probably, in this report.\textsuperscript{72} The samian stamp data from the catalogue is summarised in Table 5. This is a significant body of data that warrants some analysis and is the main focus of the discussion that follows.

\textsuperscript{72} The author thanks Brenda Dickinson and Geoffrey Dannell for their assistance with the samian stamp identification. Errors and omissions remain the author’s own.
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<td>V13-08B</td>
<td>AD 120s-160s</td>
<td>V/VI</td>
<td>Gemalii iv</td>
<td>6a</td>
<td>150-180</td>
<td>LZ</td>
<td>CG</td>
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<td>AD 213-270s</td>
<td>Dr 18/31</td>
<td>Ioenalis</td>
<td>2a</td>
<td>100-130</td>
<td>LMV; LZ</td>
<td>CG</td>
</tr>
<tr>
<td>16967</td>
<td>V12-114B</td>
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<td>Dr 15/17</td>
<td>Iuliusinus i?</td>
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<td>LGR</td>
<td>SG</td>
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<tr>
<td>12676</td>
<td>V09B-41</td>
<td>AD 130-205</td>
<td>Dr 33</td>
<td>Iulius Numidius</td>
<td>5a</td>
<td>155-200</td>
<td>LZ</td>
<td>CG</td>
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<td>Dr 18/31</td>
<td>Lipuca</td>
<td>2b</td>
<td>130-165</td>
<td>LM; S; C</td>
<td>EG; B</td>
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<td>10955</td>
<td>V08B-29</td>
<td>AD213+</td>
<td>Dr 31</td>
<td>Littera i</td>
<td>1a</td>
<td>120-150</td>
<td>LZ</td>
<td>CG</td>
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Table 5: Summary of identified stamped samian ware vessels from Vindolanda, Area B 2007-2012 (n=55).
<table>
<thead>
<tr>
<th>Small Find No.</th>
<th>Context</th>
<th>Site Date</th>
<th>Form</th>
<th>Potter</th>
<th>Die</th>
<th>PDR (AD)</th>
<th>Kiln</th>
<th>Region</th>
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<td>Macrianus</td>
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<td>155-190</td>
<td>LZ</td>
<td>CG</td>
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<tr>
<td>10886</td>
<td>V07B-36</td>
<td>c.AD 120-130s</td>
<td>Dr 18/31</td>
<td>Marcellinus</td>
<td>1c</td>
<td>130-160</td>
<td>LMV</td>
<td>CG</td>
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<tr>
<td>16598</td>
<td>V11-08B</td>
<td>c.AD 130-205</td>
<td>Dr 31R</td>
<td>Marcus v</td>
<td>7b</td>
<td>160-210</td>
<td>LZ</td>
<td>CG</td>
</tr>
<tr>
<td>16581</td>
<td>V11-12B</td>
<td>c.AD 165-212</td>
<td>Dr 33</td>
<td>Martius iv</td>
<td>1b</td>
<td>155-190</td>
<td>LZ</td>
<td>CG</td>
</tr>
<tr>
<td>10957</td>
<td>V08B-29</td>
<td>AD213+</td>
<td>Dr 18</td>
<td>Masculus i</td>
<td>UNK</td>
<td>35-65</td>
<td>LGR</td>
<td>SG</td>
</tr>
<tr>
<td>16778</td>
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<td>Memor</td>
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<td>SG</td>
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<tr>
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<td>V09B-23</td>
<td>c.AD 120-130</td>
<td>Dr 37</td>
<td>Mercator i</td>
<td>7a-tab</td>
<td>70-110</td>
<td>LGR</td>
<td>SG</td>
</tr>
<tr>
<td>12696</td>
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<td>AD 205-212</td>
<td>Dr 33</td>
<td>Miccio vii</td>
<td>1a</td>
<td>150-180</td>
<td>S; C</td>
<td>EG B</td>
</tr>
<tr>
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<td>V12-29B</td>
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<td>Dr 18/31</td>
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<td>150-180</td>
<td>S; C</td>
<td>EG B</td>
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<tr>
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<tr>
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<td>Dr 31</td>
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<td>LZ</td>
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<td>c.AD 105-120</td>
<td>Dr 18</td>
<td>Peregrinus</td>
<td>3a(ii)</td>
<td>65-85</td>
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<td>c.AD 85-130</td>
<td>Dr 33</td>
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<td>AD213+</td>
<td>Dr 31</td>
<td>Quadratus iii</td>
<td>1b</td>
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<td>c.AD 213-270s</td>
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<td>CG</td>
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<td>13737</td>
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<td>Dr 33</td>
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<td>NEW DIE</td>
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<td>2a</td>
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<td>LMV</td>
<td>CG</td>
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<td>EG</td>
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<td>1a</td>
<td>110-135</td>
<td>LMV</td>
<td>CG</td>
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<tr>
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<td>Dr 31R</td>
<td>Sacrillus</td>
<td>3a</td>
<td>165-200</td>
<td>LZ</td>
<td>CG</td>
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<tr>
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<td>LZ</td>
<td>CG</td>
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<td>16779</td>
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<td>u/s</td>
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<td>Sedatianus</td>
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<td>CG</td>
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<td>L LZ; CG</td>
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<td>CG</td>
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<td>c.AD 100-130</td>
<td>Dr 27</td>
<td>Vitalis ii</td>
<td>26b'</td>
<td>70-100</td>
<td>LGR</td>
<td>SG</td>
</tr>
</tbody>
</table>

Table 5: Summary of identified stamped samian ware vessels from Vindolanda, Area B 2007-2012 (n=55).
Firstly, a previously unreported die of the potter Reburrus ii (SF13737) is included in the stamps from Area B (HD, 2011, 327-31). Reburrus ii is one of the many Lezoux potters whose work has been found at Vindolanda. Secondly, a stamp of Masclus i of La Graufesenque (SG) (SF10957) does not match any of the stamps reported (HD, 2009b, 344-56). Thirdly, a stamp of Iullinus i (probably) of La Graufesenque appears to have been made of an unknown die of this potter. Lastly, A stamp of the potter Albus iii was found on the rim of a Dr 37 (decorated bowl). This is the first evidence that this potter produced anything other than plain samian ware (HD, 2008a, 150-2). This demonstrates that new evidence is yet to be discovered and reported as excavations continue at Vindolanda.

Breaking the stamp data down, 39/59 samian stamps (66%) originated at a workshop in Central Gaul, just 6/59 samian stamps (10%) originated at an Eastern Gaulish workshop, whilst 14/59 samian stamps (24%) were from Southern Gaulish potteries (Chart 1).

Chart 1: The origins of 59 identified samian stamps from Vindolanda, Area B, 2007-2012.

This data can be further subdivided within each region. Taking the stamps from southern Gaul first, it is likely that they were all produced at La Graufesenque (Chart 2). Just two stamps of Flavius Germanus could conceivably have been made at Banassac (SF14698 & SF16938), although this is unlikely since neither of the two dies with which these stamps were made has been shown to have been used at Banassac (HD, 2009a, 76). It is noteworthy that La Graufesenque is probably the only workshop that provided the identified stamps at Vindolanda found in Area B 2007-2012 from south Gaul. This finding is currently being tested against the remainder of the samian stamp data from Vindolanda and it will be shown that the La Graufesenque potteries did furnish the majority of the south Gaulish stamped samian ware found at Vindolanda to date (Sheehan-Finn, forthcoming).

Chart 2: Production sites of identified samian stamps of Southern Gaulish origin from Vindolanda, Area B, 2007-2012.

Samian stamps that were made in a central Gaulish workshop form the bulk of the identified samian stamps from Vindolanda Area B 2007-2012 (39/59 or 66%). The data indicates that Lezoux was the major contributor of central Gaulish stamped vessels to Vindolanda, with 30/39 stamped vessels (77%) having been made there (Chart 3). Only 3 stamped vessels were certainly made at Les-Martres-de-Veyre (8%), whilst the remaining 6 stamped vessels (15%) could have also originated from a Lezoux workshop, although this is not completely certain. This finding will be tested against the entire samian stamp collection from Vindolanda (Sheehan-Finn, forthcoming).

Chart 3: Production sites of identified samian stamps of Central Gaulish origin from Vindolanda, Area B, 2007-2012.

Only 6/59 (10%) identified samian stamps from Vindolanda Area B 2007-2012 were made at an East Gaulish pottery workshop. The dataset is small, but revealing (Chart 4). It demonstrates a scatter of
production sites, with no single site producing more than two of the stamped vessels identified at Vindolanda. This scatter contrasts with the other two regional centres of samian ware production (SG and CG). It is known that the East Gaulish potters were more mobile than their Central and Southern Gaulish predecessors and often produced work at a variety of kiln sites (Hartley, 1977, 251-61). However, the variety of production locations and potters in such a small number of Vindolanda’s stamps does hint that supply to Vindolanda from this region’s workshops involved sourcing samian ware from a much greater variety of workshops than was necessary when Vindolanda was supplied from the southern and central Gaulish regions. This topic does warrant further investigation and, when the entire collection of samian stamps at Vindolanda is published, more nuanced analysis may be possible (Sheehan-Finn, forthcoming).

Finally, the dataset of samian stamps from Vindolanda Area B 2007-2012 is large enough to warrant a separate analysis of all samian stamps from the excavation plotted against the period of occupation in which each was found. This data indicates that the stamped samian ware was deposited in period IV levels and right the way through to period VII levels dating to the third century AD, when the Fourth Cohort of Gauls were in residence (Chart 5). After period VII there is a sharp drop in numbers of stamps in Area B, and this could be due to the collapse of the samian ware industry in Gaul around the mid-third century AD (HD, 2008a 4-8). However, it is likely that the abandonment of the extramural settlement after c.AD270 also contributes to this finding. Coinage data from fourth century Vindolanda indicates that the roads, wells and water tanks in the extramural area remained in use while people no longer actually resided in extramural spaces (Brickstock, 2013, 121-67).
Five samian stamps that were made at a South Gaulish industry were found in contexts that were much later than the PDR of the vessels (see Table 6). None of these stamps were reshaped for prolonged use as secondary artefacts (e.g. as vessels, counters or small lids). It is likely that they were all out of use some time before their final deposition. Vindolanda’s long occupation sequence means that early material is often re-deposited in secondary or even tertiary deposits after primary deposition. It is most probable that the five stamped vessels arrived at Vindolanda within or close to the established PDR and therefore their primary use took place in earlier periods at Vindolanda than their final deposition context dates suggest. If this is so, then Periods IV and V are more likely the primary use contexts for these five stamps. This adds five more stamps to the totals from Hadrianic and pre-Hadrianic contexts, bringing the total number of samian stamps likely to have arrived and been in use at Vindolanda during periods I-V to twenty-two. It also reduces the number of stamps potentially in use in post-Hadrianic contexts by five, thereby reducing the total down to sixty-one stamps (see Table 7).

It is necessary to take two factors into account to understand the significance of this, namely the excavation biases and the time period represented by Periods IV/V and Periods VI+. As a whole, the construction of post-Hadrianic buildings over the earlier timber forts and associated structures has hindered open excavation of these earlier levels. Excavation in Hadrianic and pre-Hadrianic levels at Vindolanda is more akin to key-hole surgery than open heart surgery. Subsequently, the area excavated of these earlier levels is significantly less than that of later post-Hadrianic levels, particularly periods VII onwards, when the vicus of the fourth cohort of Gauls was constructed over all earlier structures outside the second stone fort. This skews the data in favour of Period VII and those of VI-VIB to a lesser extent. Therefore, it is expected that more samian stamps will be found from the larger, more open excavations of the later post-Hadrianic levels in Area B, while lesser numbers of samian stamps are expected to originate in Hadrianic and pre-Hadrianic levels in Area B, which are more poorly explored. This phenomenon is reflected in the data shown here (Chart 5 and Table 7).

The second factor has its origins in the lived sequence at Vindolanda in antiquity. The first five occupational phases at Vindolanda took place between c.AD85 and c.AD130s, a total period of approximately forty years (Periods I-V). The next phases of occupation at Vindolanda encompassed the years c.AD130s-c.AD270s (Periods VI-VII), a total period of some one hundred and forty years.

![Chart 5: Plot of all samian stamps (n=83) found at Vindolanda in Area B 2007-2012, against period of occupation at Vindolanda (after Birley, 2009, 83, Appendix I).](chart5.png)
Therefore, it is expected that the longer post-Hadrianic phases would yield more samian stamps than the shorter Hadrianic and pre-Hadrianic phases of the site. This is, like the archaeological bias, reflected in the data shown here (Chart 5 and Table 7).

The data needs recalibration to reflect these two factors. The author does not know the volume of soil that was removed from Area B 2007-2012 and 2013. This means that the first factor, area excavated, is observed rather than measured systematically and it is not currently possible to fully account for this bias. The second factor is easier to deal with by working out a hypothetical number of stamps arriving at the site per annum based on the adjusted figures (see Table 8 below). Although only 22/83 samian stamps arrived at Vindolanda in the forty years between the years c.AD85-c.AD130s (Period I-V), these represent a hypothetical arrival rate of 0.6 stamped vessels per annum at the site. The hypothetical arrival rate is lower in the post-Hadrianic years (periods VI-VII), with 0.4 stamped vessels arriving per-annum (Table 8).

Although the rate is hypothetical, and the body of data from Area B is small, the implications are clear. There was more samian ware in the earlier timber phases of the site, especially in the years c.AD100-c.AD130s, than in the later firstly timber and then stone phases of activity at Vindolanda. Reasons for this finding could be varied, and the author believes that conclusions ought to await the examination of all the samian stamps found at Vindolanda. Unit type(s), unit size(s), the presence of detachments of legionaries at Vindolanda during the years leading up to and during the construction of Hadrian's Wall, individual and/or group personal preferences, differences between those living in intra-mural and extra-mural parts of the site, and external issues of military supply might all be relevant.

<table>
<thead>
<tr>
<th>SF Number</th>
<th>Context</th>
<th>Period</th>
<th>Context Date (AD)</th>
<th>Potter</th>
<th>PDR (AD)</th>
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<td>VII+</td>
<td>213+</td>
<td>Cariatius</td>
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<tr>
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<td>V12-48B</td>
<td>VII</td>
<td>213-270s</td>
<td>Flavius Germanus</td>
<td>85-120</td>
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<tr>
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<td>V08B-29</td>
<td>VII+</td>
<td>213+</td>
<td>Masclus i</td>
<td>35-65</td>
</tr>
<tr>
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<td>V12-46B</td>
<td>VII+</td>
<td>213+</td>
<td>Memor</td>
<td>60-90</td>
</tr>
<tr>
<td>14679</td>
<td>V10B-56</td>
<td>III/VIA</td>
<td>100-205</td>
<td>Patricius i</td>
<td>65-90</td>
</tr>
</tbody>
</table>

*Table 6: Five Southern Gaulish samian stamps in late contexts at Vindolanda.*

<table>
<thead>
<tr>
<th>Number of Period I-V (pre-Hadrianic &amp; Hadrianic stamps)</th>
<th>Adjusted Period I-V (pre-Hadrianic &amp; Hadrianic stamps)</th>
<th>Number of Period VI+ (post Hadrianic stamps)</th>
<th>Number of Period I-V (pre-Hadrianic &amp; Hadrianic stamps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>22</td>
<td>66</td>
<td>61</td>
</tr>
<tr>
<td>20%</td>
<td>27%</td>
<td>80%</td>
<td>73%</td>
</tr>
</tbody>
</table>

*Table 7: Hadrianic/pre-Hadrianic samian stamps and figures adjusted to include pre-Hadrianic stamps residual in post-Hadrianic contexts (n=83).*
In conclusion, it is clear that the analysis of samian stamps from Vindolanda provides differential data that reflects changing patterns of supply of this ware to Vindolanda from the late first century to the mid-third century AD. It is most likely that study of all of the samian stamps found at Vindolanda will also reflect differences in social practices at different times during the site’s Roman occupational sequence from the late first to the last quarter of the third century AD.

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Tyers, P. (2012b) ‘Lincolnshire Mortaria,’ accessed on 31/10/2012 at: http://potsherd.net/atlas/Ware/LIMO

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Three significant small finds from Area B
By Anthony Birley

A small altar

An altar of pale buff-coloured sandstone, measuring 0.15 by 0.19 m and 0.15 m deep, was found in the vicus excavations in 2008, unfortunately unstratified. It was published by Roger Tomlin as follows:

DEHMA
EHNIS

He treats MA in the first line as ligatured, and interprets this lettering as 'perhaps an illiterate rendering of deis maternis', taken to be an otherwise unknown variant of the mother-goddesses. A rather similar altar from Carvoran, RIB I 1780, measuring 0.15 by 0.35 m, i.e. of the same width as but, having four lines, much higher than the Vindolanda example, is inscribed:

DEEHA
M M I
SABI
F

This is taken as de(a)e Ha(mm)a|t(nus) | f(ecit), 'To the goddess Hammia, Sabinus made this.' The first letter in line 3 could be a G, in which case the dedicator's name would have been e.g. Gabi(nius) or the like. The letter in line 4 is carved as E, which is assumed to be a mistake for F. As known from RIB I 1791-2, the Syrian Goddess, dea Syria, called Atargatis in her own country, where the cult centre was at Hierapolis, 'the sacred city', was worshipped at Carvoran, no doubt brought there by the cohors I Hamiorum, stationed there in the second century. As seen by the text cited above, RIB I 1780, there is also evidence for the worship of another deity from the cohort's immediate homeland, Hama(th)/Epiphaneia. It may be suggested that the Vindolanda altar could be another record of dea Hammia, taking the ligatured letters in line 1 to represent AM rather than MA, giving HAM, and, further, noting that there survives at the end of the line what may be the bottom of an I. Finally, in line 2, it is legitimate to take Tomlin's N as a ligatured AV. One could thus read the following:

DEHAM|EHA VIS

This gives de(a)e Ham(m)a|t(nus) | f(ecit). Havis will then be the previously unattested name of the dedicator.2

Two lead frames of pocket mirrors, stamped with makers’ names, found in the civil settlement at Vindolanda in 2010

The items discussed below were found in Area B, in the excavation directed by Justin Blake. It is not yet possible to give an exact date for the level in which they were found. They have been identified as lead frames for pocket glass mirrors. In an article published a century ago the Austrian archaeologist Novotny (1910, 270), after consulting the contribution by his French counterpart Michon (1909), counted no fewer than 134 examples. These mirror frames held convex glass mirrors, with a thin lead silvering, held in place with bitumen. They are less well known than the more expensive, often ornately decorated, entirely metal mirrors and only a few examples from Britain are cited by Lloyd-Morgan in her survey article on mirrors from the province; she illustrates a fragmentary one from Chester, which was evidently similar in size and shape to the first example from Vindolanda (Lloyd-Morgan 1977, 237 with plate 9.IIb).

1. Measuring 48 x 48 mm on the outside, and with the opening where the mirror would have been set 28 mm in diameter. The maker's stamp reads:

Q LICINIVS TUTINVSARELATE FACIT
Quintus Licinius Tutanus makes (this) at Arelate.

Warm thanks are due to Dr. Giulia Baratta of the University of Macerata, who recognised our stamp as a Latin version of a previously known Greek one and provided references to the relevant publications.

---

1 Britannia 40 (2009) 317, and n. 11, with his drawing, fig. 5.
by Barruol and by Liou and Sciallino of mirrors by this craftsman, whose workshop was at Arles. Fourteen of his mirror frames had been found up till now: three are incomplete or illegible, eight include a dedication to a goddess, while three simply give the Greek version of the Vindolanda stamp:

\[
\text{Κύ(ίντος) Λικ(ίνιος) Τουτεινος ἐν Ἀρελάτῳ πο(τ)εῖ}
\]

Interestingly, the Vindolanda example has facit, 'makes', rather than the more usual fecit, 'made' or 'has made', found with our second mirror frame, just as the Greek version has the present tense rather than the aorist or perfect.

The stamps with a dedication have the same maker's name, Λικίνιος Τουτεινος, with the gentilicium written out in full but without the praenomen, followed by ἱεράς Σελήνη(ς), 'to the holy Selene' (nos 1, 2, 3), or ἱεράς Ἀφροδείτη(ς) χάρ(υ), 'to holy Aphrodite as a thank-offering' (nos 6, 7, 8, 11), or ἱεράς Σελένη(ς) (sic: for Σελήνη(ς)), 'to the holy Selene and Aphrodite' (no. 14). It may be noted that the t subscript for ἱεράς is given as an adscript, while those for Σελήνη and Ἀφροδείτη are omitted, as is that for Ἀρελάτων, and t is also omitted from πο(τ)εῖ and χάρ(υ). A further two examples (nos 4 and 5) are incomplete and one (no. 9) is illegible, although all three clearly derive from Licinius Tustinus' workshop.

Nos 1-10 have been published and discussed by Barruol 1985, no. 11 by Barruol 1987, and nos. 12-14 by Liou and Sciallino 2003. All but one of the previously known examples have been found in Provence, the exception being that from Xanten (no. 10 below), which is also the only one that had been previously published, albeit without correct interpretation of the stamp's text. The measurements of the complete examples are as follows:

- nos 1-3 33 x 33 mm, with opening 25 mm in diameter
- no. 6 43 x 43 mm, with opening 33/35 mm in diameter
- no. 7 43 x 43 mm, with opening 34 mm in diameter
- no. 9 52 x 51 mm, with opening originally 38 mm in diameter
- no. 10 36 x 37 mm, with opening 25 mm in diameter
- no. 11 44 x 44 mm, with opening 34 mm in diameter
- no. 12 36 x 37 mm, with opening 25/27 mm in diameter
- no. 13 48 x 52 mm, with opening 38 mm in diameter
- no. 14 44 x 45 mm, with opening 35 mm in diameter

The maker's cognomen Touteinos or Tustinus was previously unattested. Barruol (1985, 361) takes it, clearly correctly, to be of Gallic origin, and refers to comparable names with the root tout-/teut-/tut-/tot-. He also notes that Licinius may be an adaptation of a Gallic original, Licnos.

1 See for the corrected reading Baratta 2010, 127 n.4: Liou and Sciallino 2003, 438ff. took this as ἱεράς Σελήνη(ς) Ἀφροδείτη(ς). Earlier readings are discussed by Barruol 1985, 159. That by H. Rumpf, Bonner Jahrbücher 50-51 (1871) 153-8, was almost correct, bar one letter out of 27, but was given a completely fanciful interpretation, κύλικ(ιον) τουτεινος(ιον) ἄν(ωταρ(ον) ἑλατ(τ)ιω πο(τ)εῖ, supposedly meaning ‘This receptacle makes an unpleasant disease less so’. Rumpf’s version was taken over almost unchanged in CIL XIII 3, 10029, 319, cited approvingly by Nowotny 1910, 118 and 124.

2 This led to a wild goose chase, on the assumption that the Vindolanda stamp referred to the old Latin phallic deity Tustinus (or Mutinus Tustinus), with misreadings of some letters. Details of that mistaken interpretation are best forgotten.
VENATOR FECIT

This craftsman seems not to be attested previously, and the name Venator is rather uncommon: Kajanto 1965, 324 was aware of only ten examples in the whole empire. Hence it is impossible to say where his workshop was situated.

The two frame-makers, Q. Licinius Tutinus and Venator, would have been called either specularii, 'mirror-makers', or, if they also produced other items of lead, plumbarii.

Bibliography:


id., *Miroirs dédiés à Selène et à Aphrodite: observations et découvertes nouvelles*, ibid. 20 (1987) 415-418 (no. 11)

I. Kajanto, *The Latin Cognomina* (Helsinki 1965)


É. Michon, *Miroirs antiques de verre double de plomb*, Bulletin archéologique du Comité des travaux historiques (1909) 231-250

id., *Nouvelles observations sur les miroirs antiques de verre*, ibid. (1911) 196-207


A dedication-slab to the goddess Ahvardva.⁶

In the late August 2012 an extremely interesting inscription was recovered. It was found face down on the northern edge of a filled in Period 4 (c.AD 105-120), fort ditch, below the remains from the outskirts of the later third-century extramural settlement. Only the first three lines are preserved, plus one letter from the middle of a fourth line, but the lettering is very good quality and easily legible; it was surrounded by a *corona*, of which the top part survives. It is the second stone inscription from Vindolanda to name the *cohors I Tungrorum*, a regiment well known from the Vindolanda writing-tablets. It formed the garrison in period 1 and probably at the start of Period 2, when it had become milliary. It was replaced in Period 2 by coh. *VIII Batavorum equitata milliaria*, which continued in garrison in Period 3, but left in 105 for the continent, upon which the Tungrians returned, and remained until c.AD 120. Part of a tombstone re-used in the late stone praetorium commemorated a centurion of the First Tungrians 'killed in the war', probably at the beginning of Hadrian’s reign (Britannia 29 [1998] 299-306; now RIB III 3364).

Part of a diploma issued to a veteran of the cohort in AD 146 was found at Vindolanda in 1980 (RIB II i, 2401.9). By that time the cohort had probably moved elsewhere and at latest from Severan times was based at Housesteads. The new stone can be read as follows:

```
AHVARDVAE
DEAE
[CO]H TVNGR[O
[RVM...][X[...]]
```

Measurements: top of stone, 0.48 m from left to right; from top of stone to below the X, 0.32 m; depth, 0.105 m. Lettering: line 1, 0.43 m; line 2, 0.35 m; line 3, 0.39 m; the E at the end of the first line is smaller than the other letters, as it had to be squeezed in. Only a tiny tip from the top left of the R in line 3 is preserved.

Robin Birley suggested that what looks like X in line 4 could be the sign for *milliaria*, normally represented as ∞. The Tungrians were certainly milliary in Period 4. However, apart from the fact that there is no trace of the normal side strokes, it hard to see how the rest of line 4 could be completed if the X represented the symbol. (The horizontal marks on either side of the middle of the X look as if they were caused by cracks in the stone rather than being deliberate.) The careful line drawing by Mark Hoyle (Fig. 1) indicates that there would only have been room for one more line below line 4, with a fairly small number of letters. Thus there seems to be insufficient space in the second part of line 4 and the next line for the name of the commander, preceded by *cui prae(e)st*, which is so frequently found in comparable dedications. One may assume just enough space before the X for about five letters. A provisional restoration would therefore produce [RVM ∞ E]X [VOTO | POSVIT], and the suggested complete reading would be:

```
Ahvardvae | deae | [co]h(ors) Tungr[o|rum
∞ e|x [voto | posuit].
```

To Ahvardva the goddess, the first cohort of Tungrians, one thousand strong, set this up in accordance with a vow.

The vast majority of Latin religious dedications place the word for god or goddess, if included, before the name of the deity. Marie-Thérèse Raepsaet-Charlier has shown that the practice of adding *deo* or *deae* to the name of the deity in religious dedications is not found before Hadrian’s reign and argues plausibly that placing the word after the name is earlier than the alternative order. An early Hadrianic date for our dedication would be in line with this.

As to the nature of the deity, see the detailed discussion by Patrizia de Bernardo Stempel. She argues that both elements of the name, *abva*, meaning ‘water’, and *ardva*, meaning ‘sublime’ or ‘noble’, are of Celtic origin, although the spelling of the word for water, normally *akva* in Celtic, has been ‘Germanicised’ as *abva*. This is just what one might expect with the Tungrians, a people on the borders of Gaul and Germania and indeed, in a famous sentence of Tacitus (*Germania* 2.2), a people that was originally the first to have been called ‘Germani’. At any rate, one may translate the first two lines as ‘To the Water, the Sublime Goddess’.

An alternative expansion of the missing part of the stone by R.S.O. Tomlin is reported above, on page 93.

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8 See the article cited in n. 6 above, at pp. 297-300.
The *vicus* excavations at Vindolanda between 2007 and 2013 added 145 beads to the collection. Most of the beads are similar to those found in other contexts on the site and comparative examples can be found not only at Vindolanda but across the Wall area (Birley and Greene, 2006).

The most abundant material for bead found in the *vicus* during the 2007-2013 excavations is glass. Also present, in fewer numbers are faience melon beads and a small number of jet and amber beads (fig. 2). Glass represents about 66% of the beads found up to 2006 on the site compared to the 76% found in these extramural research excavations. Overall faience account for about 17% of the beads found before 2007 and the *vicus* faience beads are a similar percentage at 19%. Jet and amber as material are more closely linked to the periods in which they are found on the site due to their popularity as possible fashion accessories. Amber appears in a higher quantity (although still a small quantity comparative to glass and faience) in the earlier periods of the fort and jet in the latter periods (VIB to post Roman) (Allason-Jones, 1996, Birley and Greene, 2006).

Beads can be further categorised by their shape (fig 4). Melon beads are the most common bead shape to be found on the site not only during these excavations but on the site as a whole (*ibid*, 2006). Melon beads are usually large beads that are easily identified on site and there is an ever-growing body of evidence that they were not just used as jewellery but had multiple decorative uses within the Roman context (Birley, 2012). The glass square sectioned...
beads have the next highest frequency in these excavations which is similar to the site as a whole (Birley and Greene, 2006). These small beads would have been ideal for adding extra colour to any piece of beaded jewellery and most of them are either blue or green glass, an inexpensive alternative to sapphires or emeralds which were popular in Roman jewellery (Guido, 1978). Spherical, cylinder and annular shapes are also well represented in this collection. The small number of jet beads show a spread of different shapes probably due to the fact that they are hand carved and not produced in the same quantities as the glass beads.

Glass beads can be further categorised by the colour of the glass (fig 3). There was a higher frequency of blue glass beads to come from the vicus excavation than the general spread pre 2007. 50% of the glass beads were blue. Another 22% of the glass beads were made of green coloured glass. These inexpensive alternatives to precious stones are a popular choice here at Vindolanda.

Over the last few years of excavation, the annular glass beads with applied waves has more than doubled in number (Birley and Greene, 2006). Most of the beads are annular blue glass beads with white applied waves (SF14650) but two of the beads found in 2009 and 2010 are very different. The first, from 2009, is an annular clear glass bead with blue...
and white twisted applied wave (SF12624). The applied wave is very similar to the applied wave/cord that is on some of the glass bangles from the site (Birley and Greene, 2006). The second bead is a small spherical aqua glass bead with blue and yellow twisted applied wave (SF13880). Unfortunately, neither bead has survived complete but it gives glimpses of alternatives to the blue with white waves.

Also of note, is an interesting example of a gold-in-glass bead. Gold-in-glass beads are made by building up three layers, one translucent clear glass, followed by gold leaf and then finished with another layer of translucent clear glass (Boon, 1977). The beads are then segmented and broken into singular spherical beads. Often the beads show evidence of the breakage at the perforation. SF14651 has two segments that are still attached with both perforations showing evidence that it was broken from a larger segmented strand.

Three jet beads of interest come from these excavations. First, SF16559 is a large hemispherical bead which is well made and was probably attached onto another object and secured through the perforation. It is similar in shape to SF396 which is made of glass (Birley and Greene, 2006) but the jet bead is smaller in size. SF13862 is a complete and good example of a jet segmented bead. Very similar in size to the glass segmented beads, the jet was turned on a lathe to get the segmented shapes (ibid, 2006). SF16641 is an unusual polygonal bead in that it has seven sides instead of the more numerous pentagonal or hexagonal beads. The asymmetrical shape the bead probably reflects the craftsmanship of the individual maker but it is impossible to know if it was intentional.
<table>
<thead>
<tr>
<th>Small Find Number</th>
<th>Material Number</th>
<th>Shape</th>
<th>Colour</th>
<th>Context</th>
<th>Period</th>
<th>W/D mm</th>
<th>L/H mm</th>
<th>per mm</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
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<td>SF10768</td>
<td>glass</td>
<td>spherical</td>
<td>blue</td>
<td>VO7B-2</td>
<td>AD105-130s</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>very small and is fractured on one side</td>
</tr>
<tr>
<td>SF10772</td>
<td>glass</td>
<td>cylinder</td>
<td>green</td>
<td>VO7B-6</td>
<td>AD213+</td>
<td>5</td>
<td>8</td>
<td>2</td>
<td>complete and good condition</td>
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<tr>
<td>SF10793</td>
<td>faience</td>
<td>melon</td>
<td></td>
<td>V07B-23</td>
<td>c.AD120-140s</td>
<td>12</td>
<td>10</td>
<td>5</td>
<td>half of a small melon bead, in good condition</td>
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<tr>
<td>SF10800</td>
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<td>melon</td>
<td></td>
<td>V07B-29</td>
<td>c.AD100-130s</td>
<td>22</td>
<td>17</td>
<td>12</td>
<td>half a large melon bead in fair condition</td>
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<tr>
<td>SF10803</td>
<td>jet</td>
<td>armlet</td>
<td></td>
<td>V07B-88</td>
<td>AD213-270</td>
<td>16</td>
<td>22</td>
<td>2</td>
<td>scraping on surface, 2 perforations, broad incised line on top surface, fracture on top surface possibly from re-drilling</td>
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<tr>
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<td>melon</td>
<td></td>
<td>V07B-46</td>
<td>c.AD100-c.130s</td>
<td>12</td>
<td>9</td>
<td>7</td>
<td>half a small melon bead, lateral impressions not straight poor condition</td>
</tr>
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<td>melon</td>
<td></td>
<td>V07B-30</td>
<td>c.AD100-130s</td>
<td>18</td>
<td>15</td>
<td>9</td>
<td>half a large melon bead, in good condition</td>
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<tr>
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<td>spherical</td>
<td>blue</td>
<td>V07B-58</td>
<td>U/S</td>
<td>3</td>
<td></td>
<td>3</td>
<td>very small in three fragments</td>
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<tr>
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<td>glass</td>
<td>square</td>
<td>blue</td>
<td>V07B-60</td>
<td>c.AD140s+</td>
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<td>3</td>
<td>1</td>
<td>complete and good condition</td>
</tr>
<tr>
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<td>fragment</td>
<td>green</td>
<td>V07B-57</td>
<td>U/S</td>
<td></td>
<td></td>
<td></td>
<td>bead shattered, no further information</td>
</tr>
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<td>blue</td>
<td>V07B-63</td>
<td>c.AD100-130s</td>
<td>3</td>
<td>9</td>
<td>only half of the bead survives, also breakage at one end</td>
<td></td>
</tr>
<tr>
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<td>spherical</td>
<td>red</td>
<td>V07B-65</td>
<td>c.AD213-270s</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>complete and good condition</td>
</tr>
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<td>glass</td>
<td>small biconical</td>
<td>blue</td>
<td>V07B-75</td>
<td>AD213-270s</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>complete and good condition</td>
</tr>
<tr>
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<td>faience</td>
<td>melon</td>
<td></td>
<td>V07B-49</td>
<td>c.AD105-130s</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>half a small melon bead, lateral impressions not straight poor condition</td>
</tr>
<tr>
<td>Small Find Number</td>
<td>Material</td>
<td>Shape</td>
<td>Colour</td>
<td>Context</td>
<td>Period W/D mm</td>
<td>L/H mm</td>
<td>Condition</td>
<td></td>
<td></td>
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<tr>
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<td>melon</td>
<td>V07B-7</td>
<td>c.AD100</td>
<td>12</td>
<td>11</td>
<td>5 complete but in poor condition, possible iron deposits on the bead</td>
<td></td>
<td></td>
</tr>
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<td>small biconical</td>
<td>red</td>
<td>V08B-4</td>
<td>AD213-270s</td>
<td>6</td>
<td>4 3 some striations on surface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF10937</td>
<td>glass</td>
<td>square sectioned</td>
<td>blue, white, red</td>
<td>V08B-21</td>
<td>AD213+</td>
<td>3</td>
<td>4 1 good condition but some wear apparent at perforation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF10939</td>
<td>glass</td>
<td>square sectioned</td>
<td>green</td>
<td>V08B-22</td>
<td>AD213+</td>
<td>1</td>
<td>5 fragment less then half remaining</td>
<td></td>
<td></td>
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<td>glass</td>
<td>pentagonal</td>
<td>green</td>
<td>V08B-29</td>
<td>AD213+</td>
<td>4</td>
<td>11 3 evidence of segmentations and slight twist to surface some striations in glass</td>
<td></td>
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<td>SF10968</td>
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<td>spherical</td>
<td>blue</td>
<td>V08B-39</td>
<td>AD213-270</td>
<td>6</td>
<td>6 2 some of the bead is missing due to a large fracture at base. Also wear apparent at top perforation</td>
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<tr>
<td>SF10972</td>
<td>jet</td>
<td>annular</td>
<td>V08B-22</td>
<td>AD213+</td>
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<td>8</td>
<td>3 good condition</td>
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<td>glass</td>
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<td>green</td>
<td>V08B-22</td>
<td>AD213+</td>
<td>2</td>
<td>7 1 fractured at both ends making original length undetermined</td>
<td></td>
<td></td>
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<td>spherical</td>
<td>blue</td>
<td>V08B-05</td>
<td>AD213-270s</td>
<td>7</td>
<td>7 2 good condition</td>
<td></td>
<td></td>
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<td>SF12100</td>
<td>glass</td>
<td>spherical</td>
<td>green</td>
<td>V08B-31</td>
<td>c.AD130-213</td>
<td>7</td>
<td>9 2 crudely made irregular shape</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF12117</td>
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<td>annular</td>
<td>yellow</td>
<td>V08B-31</td>
<td>c.AD130-213</td>
<td>10</td>
<td>5 quarter remaining, pitting on surface typical of type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF12118</td>
<td>glass</td>
<td>annular</td>
<td>green</td>
<td>V08B-48</td>
<td>AD213-270s</td>
<td>9</td>
<td>2 5 only half remaining</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF12155</td>
<td>glass</td>
<td>annular</td>
<td>yellow</td>
<td>V08B-48</td>
<td>SD213-270s</td>
<td>12</td>
<td>5 5 good condition but some pitting on surface as with similar beads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Find Number</td>
<td>Material</td>
<td>Shape</td>
<td>Colour</td>
<td>Context</td>
<td>Period</td>
<td>W/D mm</td>
<td>L/H mm</td>
<td>per mm</td>
<td>Condition</td>
</tr>
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<td>--------</td>
<td>--------</td>
<td>---------------------------------------------------------------------------</td>
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<tr>
<td>SF12156</td>
<td>glass</td>
<td>spherical</td>
<td>gold-in-glass</td>
<td>V08B-64</td>
<td>AD130-213</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>some of outer translucent glass missing as well as gold leaf. Fractures visible on surface.</td>
</tr>
<tr>
<td>SF12167</td>
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<td>spherical</td>
<td>blue</td>
<td>V08B-43</td>
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<tr>
<td>SF12172</td>
<td>glass</td>
<td>spherical</td>
<td>blue</td>
<td>V09B-02</td>
<td>U/S</td>
<td>6</td>
<td>5</td>
<td></td>
<td>only half remaining, fractures visible on surface</td>
</tr>
<tr>
<td>SF12173</td>
<td>glass</td>
<td>square</td>
<td>blue</td>
<td>V09B-03</td>
<td>AD213-270s</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>irregularity of shape common with type</td>
</tr>
<tr>
<td>SF12175</td>
<td>glass</td>
<td>small</td>
<td>blue</td>
<td>V09B-04</td>
<td>AD213+</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>good condition, small</td>
</tr>
<tr>
<td>SF12186</td>
<td>glass</td>
<td>spherical</td>
<td>blue</td>
<td>V09B-02</td>
<td>U/S</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>possibly made from recycled window glass, fracture at one end, wear at perforation</td>
</tr>
<tr>
<td>SF12190</td>
<td>glass</td>
<td>cylinder</td>
<td>green</td>
<td>V09B-09</td>
<td>AD213+</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>good condition</td>
</tr>
<tr>
<td>SF12192</td>
<td>faience</td>
<td>melon</td>
<td></td>
<td>V09B-10</td>
<td>AD213-270s</td>
<td>10</td>
<td>6</td>
<td></td>
<td>small fragment</td>
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<td>SF12193</td>
<td>glass</td>
<td>annular</td>
<td>red</td>
<td>V09B-04</td>
<td>AD213+</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>very small, irregular shape, dark striations consistent with this type</td>
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<td>SF12196</td>
<td>glass</td>
<td>square</td>
<td>blue</td>
<td>V09B-03</td>
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<td>blue</td>
<td>V09B-07</td>
<td>AD213+</td>
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<tr>
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<td>faience</td>
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<td>c.AD130-205</td>
<td>11</td>
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<td>clear with blue and white applied tail</td>
<td>V09B-11</td>
<td>AD213+</td>
<td>17</td>
<td>10</td>
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<td>badly damaged, fractures and only half remaining, blue and white twisted cord similar to glass bangles</td>
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<td>Material</td>
<td>Shape</td>
<td>Colour</td>
<td>Context</td>
<td>Period</td>
<td>W/D mm</td>
<td>L/H mm</td>
<td>Condition</td>
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<td>blue</td>
<td>V09B-15</td>
<td>AD213+</td>
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<td>only half remaining, fractures visible on surface</td>
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<td>red</td>
<td>V09B-15</td>
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<td>AD205-212</td>
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<td>red</td>
<td>V09B-33</td>
<td>AD205-212</td>
<td>3</td>
<td>13</td>
<td>2 breakage at one end, pitting on surface</td>
<td></td>
</tr>
<tr>
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<td>blue</td>
<td>V09B-32</td>
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<td>in two fragments</td>
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<td>blue</td>
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<td>3 irregular shape and pitting on surface</td>
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<td>7</td>
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<td>V09B-31</td>
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<td>green</td>
<td>V09B-28</td>
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<td>blue</td>
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<td>AD205-212</td>
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<td>1 typical of type, slight irregularity in shape</td>
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<td>1 breakage at both ends</td>
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<td>red</td>
<td>V09B-37</td>
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<td>green</td>
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<td>blue</td>
<td>V09B-37</td>
<td>AD213+</td>
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<td>in three fragments</td>
<td></td>
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<tr>
<td>SF12672</td>
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<td>gold-in-glass</td>
<td>V09B-41</td>
<td>AD130-205</td>
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<td>5</td>
<td>1 cracks on outer surface, some outer glass and gold missing</td>
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<td>blue</td>
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<td>AD130-205</td>
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<td>4 fragment, irregular shape, fractures visible</td>
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<td>Shape</td>
<td>Colour</td>
<td>Context</td>
<td>Period</td>
<td>W/D mm</td>
<td>L/H mm</td>
<td>per mm</td>
<td>Condition</td>
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</tr>
<tr>
<td>SF12689</td>
<td>glass</td>
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<td>red</td>
<td>V09B-44</td>
<td>AD130-205</td>
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<td>4</td>
<td>1</td>
<td>good condition, small abrasion</td>
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<tr>
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<td>blue</td>
<td>V09B-41</td>
<td>AD130-205</td>
<td>6</td>
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<td>partially shattered, some small fragments remaining</td>
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<td>AD130-205</td>
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<td>1</td>
<td>very irregular shape, flattened</td>
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<tr>
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<td>cylinder</td>
<td>green</td>
<td>V09B-44</td>
<td>c.AD130-205</td>
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<td>6</td>
<td>1</td>
<td>very small perforation, poor condition</td>
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<td>V09B-41</td>
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<td>1</td>
<td>one side very narrow, not fracture, from production</td>
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<td>V09B-41</td>
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<td>has clear core with red outer</td>
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<td>3</td>
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</tr>
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<td>green</td>
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<td>8</td>
<td>4</td>
<td>1</td>
<td>fractured at one end</td>
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<tr>
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<td>gold-in-glass</td>
<td>V09B-34</td>
<td>AD213+</td>
<td>6</td>
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<td>1</td>
<td>outer glass gold leaf removed around half of bead, remaining outer glass cracked</td>
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<td>V09B-41</td>
<td>AD130-205</td>
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<td>2</td>
<td>1</td>
<td>very tiny</td>
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<td>blue</td>
<td>V09B-55</td>
<td>AD213+</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>tiny for type, good condition</td>
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<td>glass</td>
<td>segmented</td>
<td>blue</td>
<td>V09B-58</td>
<td>AD213+</td>
<td>4</td>
<td>10</td>
<td>1</td>
<td>good condition but poorly made</td>
</tr>
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<td>green</td>
<td>V09B-58</td>
<td>AD213+</td>
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<td>green</td>
<td>V09B-63</td>
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<td>3</td>
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<td>blue</td>
<td>V09B-66</td>
<td>c.AD120-130</td>
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<td>5</td>
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<td>Shape</td>
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<td>Period</td>
<td>W/D mm</td>
<td>L/H mm</td>
<td>per mm</td>
<td>Condition</td>
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<td>blue</td>
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<td>blue</td>
<td>V10B-02</td>
<td>AD213+</td>
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<td>9</td>
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<td>less than half remaining, striations on surface</td>
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<tr>
<td>SF13792</td>
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<td>square sectioned</td>
<td>blue, white, red</td>
<td>V10B-03</td>
<td>AD213+</td>
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<td>5</td>
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<td>gold-in -glass</td>
<td>V10B-02</td>
<td>AD213+</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>all of outer glass removed, gold leaf in good condition</td>
</tr>
<tr>
<td>SF13801</td>
<td>glass</td>
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<td>blue</td>
<td>c.AD130-205</td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>broken into three fragments</td>
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</tr>
<tr>
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<td>blue</td>
<td>V10B-03</td>
<td>AD213+</td>
<td>6</td>
<td>4</td>
<td>2</td>
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<td>V10B-07</td>
<td>AD130-205</td>
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<td>2</td>
<td>1</td>
<td>very small perforation, good condition</td>
</tr>
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<td>melon</td>
<td>V10B-21</td>
<td>c.AD120-130</td>
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<td>melon</td>
<td>V10B-23</td>
<td>pre AD213</td>
<td>15</td>
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<td>6</td>
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<tr>
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<td>green</td>
<td>V10B-09</td>
<td>U/S</td>
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<td>opaque glass</td>
<td>V10B-02</td>
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<td>V10B-24</td>
<td>AD205-213</td>
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<td>5 segments, in small biconical shape</td>
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<td>pentagonal</td>
<td>green</td>
<td>V10B-26</td>
<td>U/S</td>
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<td>6</td>
<td>2</td>
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</tr>
<tr>
<td>SF13880</td>
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<td>spherical</td>
<td>green with blue and yellow applied wave</td>
<td>V10B-26</td>
<td>U/S</td>
<td>6</td>
<td>8</td>
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<td>perforation not apparent, about 1/4 remaining</td>
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<tr>
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<td>melon</td>
<td>V10B-32</td>
<td>AD213+</td>
<td>19</td>
<td>22</td>
<td>8</td>
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<td>fragment</td>
<td>V10B-22</td>
<td>c.AD85-130</td>
<td>13</td>
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<td>work and drilled fragment</td>
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<td>Small Find Number</td>
<td>Material</td>
<td>Shape</td>
<td>Colour</td>
<td>Context</td>
<td>Period</td>
<td>W/D mm</td>
<td>L/H mm</td>
<td>per mm</td>
<td>Condition</td>
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<td>V10B-37</td>
<td>AD130-213</td>
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<td>V10B-39</td>
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<td>green</td>
<td>V10B-26</td>
<td>U/S</td>
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<td>8</td>
<td>1</td>
<td>some evidence of breakage at one end</td>
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<td>melon</td>
<td>V10B-43</td>
<td>c.AD105-120</td>
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<tr>
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<td>gold-in-glass</td>
<td>V10B-39</td>
<td>AD213</td>
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<td>6</td>
<td>1</td>
<td>missing some upper glass and gold</td>
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<tr>
<td>SF14645</td>
<td>glass</td>
<td>oblate</td>
<td>turquoise blue</td>
<td>V10B-52</td>
<td>AD213+</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>excellent condition, tiny</td>
</tr>
<tr>
<td>SF14646</td>
<td>glass</td>
<td>fragment</td>
<td>blue</td>
<td>V10B-47</td>
<td>AD213-270s</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>shape unidentifiable but perforation apparent</td>
</tr>
<tr>
<td>SF14648</td>
<td>glass</td>
<td>fragment</td>
<td>blue</td>
<td>V10B-47</td>
<td>AD213-270s</td>
<td>5</td>
<td>5</td>
<td></td>
<td>fragment</td>
</tr>
<tr>
<td>SF14650</td>
<td>glass</td>
<td>annular</td>
<td>blue with white applied wave</td>
<td>V10B-47</td>
<td>AD213-270s</td>
<td>21</td>
<td>11</td>
<td>10</td>
<td>half remaining</td>
</tr>
<tr>
<td>SF14651</td>
<td>glass</td>
<td>segmented</td>
<td>gold-in-glass</td>
<td>V10B-47</td>
<td>AD213-270s</td>
<td>6</td>
<td>12</td>
<td>2</td>
<td>good condition, unusual as the two segments are still together</td>
</tr>
<tr>
<td>SF14672</td>
<td>glass</td>
<td>square sectioned</td>
<td>blue</td>
<td>V10B-47</td>
<td>AD213-270s</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>good condition</td>
</tr>
<tr>
<td>SF14678</td>
<td>faience</td>
<td>melon</td>
<td>V10B-22</td>
<td>c.AD85-130</td>
<td>11</td>
<td>11</td>
<td>5</td>
<td>half remaining, lateral impressions almost worn off</td>
<td></td>
</tr>
<tr>
<td>SF14683</td>
<td>glass</td>
<td>square sectioned</td>
<td>green</td>
<td>V10B-56</td>
<td>c.AD100-205</td>
<td>3</td>
<td>11</td>
<td>1</td>
<td>long and twisted</td>
</tr>
<tr>
<td>SF14703</td>
<td>faience</td>
<td>melon</td>
<td>V10B-37</td>
<td>AD130-213</td>
<td>5</td>
<td>7</td>
<td></td>
<td>fragment</td>
<td></td>
</tr>
<tr>
<td>SF16503</td>
<td>glass</td>
<td>square sectioned</td>
<td>blue</td>
<td>V11B-01</td>
<td>c.AD213-300</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>wear at perforation</td>
</tr>
<tr>
<td>SF16519</td>
<td>glass</td>
<td>segmented</td>
<td>gold-in-glass</td>
<td>V11B-01</td>
<td>c.AD213-300</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>good condition</td>
</tr>
<tr>
<td>SF16529</td>
<td>glass</td>
<td>small biconical</td>
<td>blue</td>
<td>V11B-04</td>
<td>c.AD130-270s</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>evidence of wear at perforation</td>
</tr>
<tr>
<td>Small Find Number</td>
<td>Material</td>
<td>Shape</td>
<td>Colour</td>
<td>Context</td>
<td>Period</td>
<td>W/D</td>
<td>L/H</td>
<td>Condition</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>----------</td>
<td>-------</td>
<td>--------</td>
<td>---------</td>
<td>--------</td>
<td>------</td>
<td>------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>SF16536</td>
<td>glass</td>
<td>spherical</td>
<td>turquoise blue</td>
<td>V11B-01</td>
<td>c.AD213-300</td>
<td>3</td>
<td>3</td>
<td>just over half remaining, very tiny</td>
<td></td>
</tr>
<tr>
<td>SF16559</td>
<td>jet</td>
<td>hemi-spherical</td>
<td></td>
<td>V11B-04</td>
<td>c.AD130-270s</td>
<td>16</td>
<td>8</td>
<td>roughly shaped, marks on flat edge</td>
<td></td>
</tr>
<tr>
<td>SF16560</td>
<td>glass</td>
<td>fragment</td>
<td>blue</td>
<td>V11B-03</td>
<td>c.AD213+</td>
<td>3</td>
<td>5</td>
<td>fragment</td>
<td></td>
</tr>
<tr>
<td>SF16561</td>
<td>glass</td>
<td>diamond faceted</td>
<td>blue</td>
<td>V11B-06</td>
<td>c.AD130-270s</td>
<td>3</td>
<td>5</td>
<td>good quality</td>
<td></td>
</tr>
<tr>
<td>SF16572</td>
<td>glass</td>
<td>square sectioned</td>
<td>aqua glass</td>
<td>V11B-12</td>
<td>c.AD1654-212</td>
<td>16</td>
<td>3</td>
<td>some fractures evident on surface</td>
<td></td>
</tr>
<tr>
<td>SF16582</td>
<td>glass</td>
<td>cylinder</td>
<td>green</td>
<td>V11B-03</td>
<td>c.AD213+</td>
<td>5</td>
<td>7</td>
<td>good condition some wear at perforation</td>
<td></td>
</tr>
<tr>
<td>SF16612</td>
<td>glass</td>
<td>cylinder</td>
<td>green</td>
<td>V11B-03</td>
<td>c.AD213+</td>
<td>4</td>
<td>11</td>
<td>good condition</td>
<td></td>
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<tr>
<td>SF16641</td>
<td>jet</td>
<td>heptagon</td>
<td></td>
<td>V12B-13</td>
<td>c.AD130-212</td>
<td>4</td>
<td>12</td>
<td>poorly made with uneven sides. In good condition</td>
<td></td>
</tr>
<tr>
<td>SF16678</td>
<td>glass</td>
<td>square</td>
<td>blue, white, red</td>
<td>V12B-05</td>
<td>U/S</td>
<td>4</td>
<td>3</td>
<td>very poor condition</td>
<td></td>
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<tr>
<td>SF16679</td>
<td>glass</td>
<td>cylinder</td>
<td>blue</td>
<td>V12B-17</td>
<td>c.AD165-205</td>
<td>7</td>
<td>3</td>
<td>less than half remaining</td>
<td></td>
</tr>
<tr>
<td>SF16682</td>
<td>glass</td>
<td>small biconical</td>
<td>blue</td>
<td>V12B-19</td>
<td>c.AD400+</td>
<td>5</td>
<td>2</td>
<td>Well made but shows some wear around perforation</td>
<td></td>
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<tr>
<td>SF16688</td>
<td>faience</td>
<td>melon</td>
<td></td>
<td>V12B-19</td>
<td>c.AD400+</td>
<td>14</td>
<td>11</td>
<td>some of original turquoise showing, lateral impressions not parallel</td>
<td></td>
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<tr>
<td>SF16695</td>
<td>glass</td>
<td>hexagonal</td>
<td>blue</td>
<td>V12B-05</td>
<td>U/S</td>
<td>21</td>
<td>7</td>
<td>only half remaining, has straight fracture marks and scratches on surface</td>
<td></td>
</tr>
<tr>
<td>SF16705</td>
<td>glass</td>
<td>melon</td>
<td>blue</td>
<td>V12B-41</td>
<td>c.AD130-212</td>
<td>23</td>
<td>15</td>
<td>good quality, some wear on surface</td>
<td></td>
</tr>
<tr>
<td>SF16711</td>
<td>glass</td>
<td>square sectioned</td>
<td>blue, white, red</td>
<td>V12B-42</td>
<td>U/S</td>
<td>6</td>
<td>4</td>
<td>red glass mostly worn away, some wear at perforation</td>
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<tr>
<td>SF16731</td>
<td>faience</td>
<td>melon</td>
<td></td>
<td>V12B-41</td>
<td>c.AD130-212</td>
<td>13</td>
<td>11</td>
<td>only half remaining, poor quality</td>
<td></td>
</tr>
<tr>
<td>SF16732</td>
<td>glass</td>
<td>square sectioned</td>
<td>blue</td>
<td>V12B-05</td>
<td>U/S</td>
<td>5</td>
<td>3</td>
<td>less than half remaining</td>
<td></td>
</tr>
<tr>
<td>SF16736</td>
<td>glass</td>
<td>melon</td>
<td>blue</td>
<td>V12B-41</td>
<td>c.AD130-212</td>
<td>31</td>
<td>23</td>
<td>irregular shape - very large. Some pitting and air bubbles on surface</td>
<td></td>
</tr>
<tr>
<td>SF16780</td>
<td>faience</td>
<td>melon</td>
<td></td>
<td>V12B-38</td>
<td>post Roman</td>
<td>14</td>
<td>12</td>
<td>lateral impressions not parallel</td>
<td></td>
</tr>
</tbody>
</table>
### Bibliography


A statue of Fortuna
By Barbara Birley

SF6772 Sandstone seated statue of Fortuna
Height: 40cm width: 30cm depth: 18cm
Context: V12-86B AD213+ Mixed clay beneath topsoil immediately north of visitor footpath past south front of Romano-Celtic temple CXXXI.

This sandstone statue, found in 2012, is of the goddess Fortuna and despite the missing head, portrays many of the goddess’s well attested attributes.

She was known to originally be a fertility goddess but became more generally regarded as the goddess of fate, chance and luck, sentiments that must have appealed to both Roman soldiers and non-combatants alike on the northern frontier of Roman Britain. Dio Chrysostom gives Fortune the following representations: “some have placed her on a razor’s edge, others on a sphere, others have given her a rudder to wield, while those who depict her most effectively have given her the horn of Amaltheia, full to overflowing with the fruits of the seasons, … the sphere (represents) that change of fortune is easy, for the divine power is, in fact, ever in motion; the rudder indicated that Fortune directs the life of man; the horn of Amaltheia calls attention to the giving of good things and prosperity” (Dio Chrysostom, 63.7). These elements are visible on this example and are shown by the small sphere to the back left of the statue and the possibility of a rudder in her left hand which was removed in antiquity. In her right hand she holds a cornucopia or horn of Amaltheia. At the connection point of the neck to the body a depression is visible with a lead plug at the bottom. This would have been used to mount the head of the goddess.

Fortuna was worshipped throughout the Roman Empire for many centuries and there is evidence of cults and temples in almost all areas of the Empire, including its border zones. Temples were erected not only in Rome itself, including one in the Forum Boarium but also at the cult centre of Praeneste, Italy and Constantine built a temple to this goddess in his new city of Constantinople (Atkins and Atkins 1996).

Epigraphic evidence from Hadrian’s Wall shows that at many of the forts there are references to Fortuna including, Birdoswald (RIB 1873), Carrawburgh (RIB 1536,1537) Carvoran (RIB1778, 1779), Greatchesters (RIB 1724) and Maryport (RIB 812, 840), Carlisle (inscribed mini clay altar) (Hassall and Tomlin 1993, 316).
At Vindolanda an altar to the goddess was found in circa 1715-1717 during the Warburton excavation. The altar was dedicated to Fortuna Populi Romani (Luck of the Roman People) found inside the fort most likely from the praetorium, and it reads:

Fortunae p(opuli) R(omani) G(aius) Iul(ius) Raeticus c(entricurio) leg(ionis) VI Victrix

‘To the Fortune of the Roman People Gaius Julius Raeticus, centurion of the Sixth Legion Victrix, (set this up).’ (RIB 1684)

Bibliography


A copper-alloy griffin statuette
By Barbara Birley

SF13796 Copper-alloy griffin statuette
Height: 50.15mm, length: 53.94mm, depth: 15.10mm
Context: V10B-3 Period: AD213+, Red loam and small cobbles immediately outside west edge of vicus building CXXIX and above main northwest-southeast running road surface A3.

This cast figure of a griffin has the typical features of the mythical beast, wings and beak of an eagle and the body of a lion. Its fur is suggested by small incised lines across the body and neck. The feathers of the wings are shown with more detail with both short semi-circular feathers near the wing’s connection to the body and four long sweeping feathers at the top of each wing ending in a forward pointed curve. The right foreleg is lifted and extended slightly to the right. The left foreleg is straight and anchored to the base plinth. The paw of the left foot survives in good condition and shows three lines for the toes of the animal. The rear of the griffin is seated over the back legs and the long tail sweeps over onto the middle of the back. The head and neck are turned to the right over the lifted leg.

Extending from in-between the pointed ears is a lateral mane, much like a horse’s mane which is decorated with upward sweeping lines. There are
more incised lines along the cheekbone on the right side. Unfortunately, the left side has not survived to show any decoration on the neck or cheek. A long beard protrudes from under the chin. The 42mm by 10mm base plinth could have been slotted or attached onto another object.

Griffins in ancient mythology are said to have lived in the mountainous regions to the north of Greece and protected gold. Pliny wrote the following in his Natural History “Many authorities, the most distinguished being Herodotus and Aristeas of Proconnesus, write that these people wage continual war around their mines with the griffins, a kind of wild beast with wings, as commonly reported, that digs gold out of mines, which the creature guards and the Arimaspi try to take from them, both with remarkable covetousness” 7.10, tr. (Rackham, 1942).

Pausanias states in his Guide to Greece, written in 2nd century AD “Aristeas of Prokonnesos says in his poem that these griffins fight for gold with the Arimaspians, way beyond the north of Thrace, and the gold they guard grows out of the earth; the Arimaspians are born one-eyed, but the griffins are wild monsters like lions with wings and the beak of an eagle” 1.24.6, tr. (Levi, 1971).

The stance of the griffin is not unlike the Vindolanda horse found in 1971 under the floor of the Severan commanding officers residence (fig. 3). The stance of the horse, as explained by J.M.C. Toynbee (1982), shows that it was probably a part of a matching pair; presumably the unfound artefact twisted in the opposite direction. Toynbee argues that the horse probably belongs to a class of small copper alloy objects that have been interpreted as ornaments for vehicles (249). Whether or not this was the case, the griffin, unlike the horse, does not have the hollow vertical mount, yet the distinctive twist in the stance in both artefacts makes this a potentially viable interpretation of its function.

Another Roman object that was found around the same time as the Vindolanda griffin was the Crosby Garrett helmet (Breeze and Bishop,
This ‘sports’ helmet was found about 65 miles from Vindolanda in Cumbria and has a copper alloy griffin mounted on the top of a Phrygian cap.

Although it is similar in size (ibid, 2013) and has a lifted right paw, the Crosby Garrett griffin is facing straight on and its base plinth is rounded to attach to the top of the cap. The differences in the Crosby Garrett helmet griffin and the Vindolanda griffin would suggest that the Vindolanda example was mounted on a very different type of object.

Bibliography


Gemstones and Finger Rings from the 2007-12 Excavations in the vicus at Vindolanda
By Dr. Elizabeth M. Greene

Introduction

A large number of new intaglio finds from the past five years have brought the entire assemblage of gemstones in the Vindolanda collection to nearly one hundred. As in the past, these are found throughout the fort and vicus areas and come from differing contexts, from rubbish disposal in ditches to items lost on roads and floor surfaces. Their dates span from the early second century to well into the third century (very few 1st century contexts were excavated), and the possibility that some stones were reused and lost even later is quite probable. Reported here are the intaglio finds from the excavations reported in this volume, together with the finger rings.

The new gemstones follow our expectations for this auxiliary military context, for the most part, with a few examples of new stones not yet in the collection and images carved into the surface that were not previously in the Vindolanda group. This is always exciting since the practice of wearing a ring with incised gemstone became available to a far greater amount of the population with the mass-produced and imitation stones of the 2nd century. As a result, the repetition in a single collection can be surprisingly high and the same examples are found throughout regions of the empire. A very fine brown banded agate (SF 16,749) is the first of this type of material in the Vindolanda assemblage, although it is not terribly rare elsewhere. It does suggest, however, that either stones of this type were rarely available on site or were for some reason not chosen often by the population living at the fort. It is always difficult to reconstruct the values of aesthetics in antiquity for such a small item, but it is possible that the strata in the stone that produces a fine banded effect was prized and therefore more expensive than some others. In this auxiliary setting where soldiers were paid somewhat less than legionary soldiers we might expect to find the less expensive mass-produced stones more often, such as imitation glass gems like the nicolo paste examples. It is certain that the assemblage of stones from the legionary fort at Caerleon (Wales) is of a higher quality overall with more varieties of stones and in some cases greater artistic quality as well (Zienkewicz 1986, 117-41).

The most recent finds, however, are now some of the best examples in the collection and heighten the quality of the Vindolanda assemblage as a whole, especially in the execution of the carved images. A red jasper with a galloping horse and rider (SF 16,692) is of very fine quality in its carving. Both the composition as a whole and the details included are clear and of high artistic merit compared to many other stones in the assemblage. Two red jasper stones are also very well rendered. A portrait of a female (SF 13,723) is better executed than most others in Britain (comparing to gemstones published in Henig 2007) and the head of a warrior wearing a helmet (SF 16,907), though frustratingly incomplete, appears to have been very fine indeed originally. At the same time, some of the new examples are exact duplicates of the mass produced stones that come to dominate most intaglio assemblages by the 2nd and 3rd centuries. Two stones showing Bonus Eventus and Fortuna respectively (SF 16,845 and 16,848) are both quite typical types in the ‘incoherent grooves’ style, certainly mass-produced stones that are of relatively low artistic quality.

There is a significant cluster of gemstones from one area of the site that is worth noting. Eight intaglios were found in the 2012 excavations, in areas on the western end of the vicus near the Romano-Celtic temple. It is typical to find a few intaglios in a season, but the only other context on site that has produced so many is the 3rd century bathhouse drains excavated in the 1970s. Unfortunately, some of the associated contexts of the 2012 finds are in unstratified topsoil, but all but one of these stones (SF 16,845) are from these upper contexts dating to the later phases on site from the 3rd century onwards. This clustering near a known religious space is curious, especially when considering the evidence from sites such as Bath, where it is argued that gemstones were used as offerings to the deity there. It is difficult to make a definite association with a specific area with finds from topsoil, but it is worth noting the apparent spatial connection to a known religious area on site.

The finger ring finds in the past five years have been equally as interesting and those with special significance are discussed below. The highlight of
this new assemblage is an inscribed ring of silver (SF 10,964) with the words MATRI PATRI inscribed on its bezel. Also of note is a high quality glass ring with yellow bands around its entire surface from the bezel all the way around the band (SF 10,854). This example has comparanda on the site itself, with another fragment of the same style (SF 16,345) and a complete glass ring having been found in the fort excavations (SF 16,163, both to be published in A. Birley, forthcoming, excavations of 2008-12 in the fort). Otherwise the assemblage of rings includes a typical group of copper-alloy bands, some of which probably had uses as something other than as finger rings, with no surface decoration or embellishment. Also included are fragments of jet rings that are also commonly found complete. These usually have a plain bezel with bands embellished by raised shoulders or incised lines or grooved decoration. These partial examples of finger rings are not accompanied by an image but listed at the end of this section in catalogue format.

The intaglios and rings have an obvious connection since loose intaglios were once set into the bezels of gold, silver and iron rings. It seems that intaglios often fell out of their setting, particularly in areas such as bathhouses, where the steam and heat could more easily loosen the adhesive that held a gemstone in place. This separation was a common enough occurrence that far more stones are found on their own than in their original ring setting, although usually a few of the latter are found in each season of work. In this group from the vicus, however, there are no intaglios that remain with their original ring setting and there were found no rings of the type that originally held an intaglio.

This chapter is a complete list of the intaglios and finger rings found in the 2007-12 excavations in the extramural settlement. Each entry includes the relevant information about size, material, profile, archaeological context and date, present condition and a description of the object. Where appropriate an image is included with discussion of the decoration on each item, especially in the case of the intaglios with incised figures on the face of the stone.

### Catalogue

**SF 10,810**

Width: 10.5mm  
Length: 13.5mm  
Incised surface: 8mm x 11.5mm  
Depth (max., uneven surface): 3.5mm  

**FIND LOCATION:** Context V07B-45. Ditch fill in the western part of the site near the edge of the excavated portions of the extramural settlement. The ditch runs north of the mausoleum and in this context turns and travels NE-SW. AD 110-130s.

**STONE CONDITION and DESCRIPTION:** Nicolo agate stone. Perfectly preserved. Nothing missing from the stone and no corrosion to the surface. Highly polished on the back and in the incision of the figure. The stone is black with the stratum of white/blue on the surface and the figure incised into the black below. The stone is unevenly shaped, either it seems from a poor cutting job or perhaps reuse from another stone. The bevelled edge is not cut evenly around the oval of the stone, but undulates higher and lower around the edge. This does not look intentional as it distorted the image somewhat. The top right and bottom left side are lowest and come down almost to the very bottom of the stone. The surface is, therefore, uneven with its highest points on the top left and bottom right. The bevel is carved down and outward on the front face, away from the incised surface with flat sides to the back of the stone.

**DEVICE and DISCUSSION:** The image is of a male bust, in profile, facing left. He has a beard and large eyes. He wears a helmet on his head with plume visible in profile and dangling from the back of the helmet. His chest appears to be bare with no obvious garments in the image. A visor on the helmet is also clearly visible. In front of the figure’s face is a long thin line, presumably a spear which would be held in the figure’s hand. It is probably the figure of Mars because the beard is clear on the figure (similar images without the beard are...
interpreted as specific figures such as Achilles or Alexander the Great). Given the popularity of Mars imagery in intaglios from military sites, it is clearly associated with the military nature of the settlement. For other Mars/soldier imagery from Vindolanda, see below (SF 16,907). Also see, Birley and Greene 2006, 68-9, Cat. No. 5; 83-4, Cat. No. 21; 94-5, Cat. No. 32; 113-14, Cat. No. 55. For similar types in Britain, see Henig 2007, 151, Cat. No. 467, without beard.

SF 11,180
Width: 12.2mm
Length: 16mm
Depth: lentoid shape.
1mm-6mm at its thickest in the middle
FIND LOCATION:
Unstratified. Found near fort wall.
STONE
CONDITION and DESCRIPTION: Blue glass gemstone. Well preserved with some scratching to the surface and pock marks from glass breakdown. Lentoid shape blue glass gemstone. No sign of original setting or use. Probably would have been placed in a necklace or similar piece of jewellery. There is no decoration on the surface.

SF 11,180
Width: 12.2mm
Length: 16mm
Depth: lentoid shape.
1mm-6mm at its thickest in the middle
FIND LOCATION:
Unstratified. Found near fort wall.
STONE
CONDITION and DESCRIPTION: Blue glass gemstone. Well preserved with some scratching to the surface and pock marks from glass breakdown. Lentoid shape blue glass gemstone. No sign of original setting or use. Probably would have been placed in a necklace or similar piece of jewellery. There is no decoration on the surface.

SF 12,137
Width (max. pres.): 8mm
Length: 14mm
Depth (max. pres.): 3mm
FIND LOCATION: Context V08B-59. Fill from a ditch running E/W beneath floor of V08B-52, c.AD 85-130.
STONE
CONDITION and DESCRIPTION: Carnelian stone. The stone is less than half complete with extensive wear to the surface, which is now entirely devoid of any original decorative elements. It was originally a large stone and will have probably had an image like most gemstones. Nothing more can be said about this find.

SF 12,632
Width: 11mm
Length: 14.7mm
Incised Surface: 7mm x 10mm
Depth: 4.1-4.4mm
FIND LOCATION: Context V09B-23. Ditch fill from major N-S running defensive ditch. Possibly the Period V west ditch. c.AD 120-130.
STONE CONDITION and DESCRIPTION: Nicolo agate stone. Perfectly preserved with very little wear to any of the surfaces. No chipping or scratches affect the stone. It retains a high polish on all surfaces. The stone is black with the stratum of white/blue on the surface and the figure incised into the black below. The gem is cut very evenly throughout (compared to SF 10,810 above) with bevelling equal on all sides and a flat surface to take the incised image. The bevel is carved down and outward on the front face, away from the incised surface with flat sides to the back of the stone.

DEVICE and DISCUSSION: A figure sits on piled stones in side profile, facing left. He wears a hat, but no other clothes are discernible in the image. The right hand is raised with a fishing line dangling below, with fish attached to the line and being raised by the figure. No ground line is present in the composition. It is often Cupid that is found fishing but nothing in this composition betrays the figure as such. Therefore a youthful fisherman is shown in his profession. The act of fishing is sometimes connected with Christian associations, but there is no reason to suspect such with this stone, especially in such an early archaeological layer (first half of the 2nd century). For this type elsewhere in Britain, a standing figure catches three fish in a stone from Caerleon (Henig 2007, 156-7. Cat. No. 506) and a Cupid fishing comes from Somerset (Henig 2007, 107. Cat. No. 125). For similar seated figures from Aquileia in Italy, see Sena Chiesa, Cat. Nos. 833, 835.
SF 13,723  
Width: 12mm  
Length (max. pres.): 11mm  
Depth: 2.8mm  

FIND LOCATION:  
Context V09B-52.  
Heavily disturbed, mixed soils associated with the vicus levels in the northeast of the excavated area. The context overlies and therefore post-dates the Severan ditch. AD 213+.

STONE CONDITION and DESCRIPTION: Red jasper stone. The stone is broken with about the top one-third missing. The figure is discernible but missing the top half of the head. The surface is well preserved with slight damage on the flat areas. The incised figure retains a high gloss and is well preserved. The intaglio is typical of this type with large surface area for the image and the sides are bevelled down and inward on the back of the stone.

DEVICE and DISCUSSION: A bust of a female in profile, facing left. Her hair is well-coiffed in a typical Roman style with a bun at the back and a plait resting against her neck. She wears a garment that is crossed over at the shoulders. In front of the figure is a branch with leaves protruding. A similar image exists already in the Vindolanda assemblage (Birley and Greene 2006, 81. Cat. No. 19) and female busts such as these are often identified as Maenads. This example has the added addition of the branch in front of the figure, which may allow for a more positive identification of the figure as a Maenad. A very similar stone without the branch included was found at the nearby fort at Chesters and was identified as a portrait figure, possibly of the Antonine period (Henig 2007, 153-4. Cat. No. 483). The two images have in common the neat hair with the plait tucked into the neck and the fine garment worn over the shoulders.

SF 16,674  
Width: 11.5mm  
Length (max. pres.): 14mm  
Depth: 3mm  

FIND LOCATION: Context V12-19B. Post-Roman backfill. Below plough soil, dark and clear soil layer which is extremely wet and butts onto the road surface of V12-16B to its east as it dips down into this level. Very little pottery. c.AD 400+.

STONE CONDITION and DESCRIPTION: Red jasper stone. The stone is almost complete with a small chip from the upper right corner. The surface and image remain clear. A high polish is retained in the incised image. The flat surface area has been dulled with some wear. The stone is bevelled down and away on the back of the stone, away from the incised face.

DEVICE and DISCUSSION: Achilles stands in profile with leg bent, facing left. Ground line is present. The figure is nude except the chlamys worn over the shoulders and hanging behind his back. He holds the ‘armour of Thetis,’ a story known from the Iliad (Book XVIII): his plumed helmet is held out in front in his right hand and the spear of Peleus projects behind the figure and in front toward the ground. His shield rests on the ground in front of his feet. Achilles is a popular theme for gemstones both at Vindolanda and in military contexts generally (Henig 1970). An almost exact copy of this stone was found at Corbridge, but without shield in front. An image with the shield in front was found at Caerleon in Wales. Both are also red jasper stones. The type can be found across the empire. See Henig 2007, 150. Cat. Nos. 457-462 for comparanda. Compare Vindolanda stones: Birley and Greene 2006, 68-9. Cat. No. 5.

SF 16,692  
Width: 14mm  
Length: 11.5mm  
Depth: 3mm  

FIND LOCATION: Context V12-05B. Turf and topsoil over 3rd century remains to the west of the path dividing V12-01B and V12-05B. Unstratified, but probably 3rd century or later.
STONE CONDITION and DESCRIPTION: Red jasper stone. The stone is completely preserved with only minor abrasions on the surface. The image is preserved perfectly and retains a high polish in drilled areas. The stone is bevelled down and away on the back of the stone, away from the incised face.

DEVICE and DISCUSSION: The image is of a horse and rider in profile, galloping left. Groundline under the horse’s back legs only. The horse raises its front legs in a run with the back legs on the ground. The horse wears a bit with reigns held by the rider. The rider wears only a cloak, which is billowing behind him suggesting swift movement. This is a very fine composition and appears to be better executed than others like it in Britain. A similar horse and rider was found at Caerleon (Henig 2007, 157. Cat. No. 509), but is inferior in quality and material.

SF 16,744
Width: 16.5mm
Length: 13mm
Incised Surface: 13.5mm x 10mm
Depth: 4mm

FIND LOCATION:
Context V12-51B. Actual fabric of road B7, running northwest-southeast to the south of the stone aqueduct channel. AD 213+.

STONE CONDITION and DESCRIPTION:
Nicolo paste gemstone. This stone is in poor condition. The surface has suffered from wear with several pock marks found throughout the incised area. The gemstone is moulded glass paste in the form imitating a nicolo agate stone with blue surface and dark underneath. The layer of white that is usually present in the nicolo agate and the imitation stone is missing from this gemstone. Like most nicolo stones, the surface is bevelled downward on the front face ending at the back of the stone.

DEVICE and DISCUSSION: It is difficult to discern the image because of surface damage, but it appears to be a male figure standing on the left with a tree in the center of the composition and a dog jumping onto the trunk in anticipation of catching something, probably a bird sitting in the branches. The figure appears to lean back onto piled stones. Something is carved on the right side of the composition, but this is difficult to identify. It is often Cupid who is found hunting for birds with dogs (Birley and Greene 2006, 106-7. Cat. No. 47), but nothing in this image suggests wings or identification with Cupid, therefore a simple hunting scene is represented.

SF 16,749
Width: 12mm
Length: 15mm
Incised surface: 8mm x 10mm
Depth: 4.2mm

FIND LOCATION:
Context V12-52B. Circular bank of mixed yellow clay to the north of V12-46B. Surrounded by rough dressed stones on its western edge.

STONE CONDITION and DESCRIPTION:
Banded Agate, brown. A very well preserved stone with no breaks or chips. Some wear and scratching affect the surface but do not alter the incised image. The carving takes advantage of the natural strata in the stone with a white surface and dark brown layer underneath that allows the image to stand out. The stone is shaped like most stones with different coloured strata, with a surface that bevels downward on the front face. The sides are straight down to the back and the back surface is flat.

DEVICE and DISCUSSION: A figure sits on a wide stool with legs braced in front, facing left. The figure wears no clothes or headgear discernible in the composition. The arms are raised working on a project held in front of the figure’s face. This is a fine example of a depiction of the craftsman Daedalus fashioning wings for his son Icarus. This image is found in another Vindolanda stone from the 3rd century (Birley and Greene
2006, 91-2. Cat. No. 29). The type is found elsewhere in Britain (Henig 2007, 149. Nos. 450-451) and is common throughout the empire (See Henig 2007, 149, for comparanda).

**SF 16,845**
Width: 10mm  
Length (max. pres.): 12mm  
Depth: 3mm

**FIND LOCATION:** Context V12-81B. A mixed stone and silty sand level below V12-38B and at northern end of drain 64B, AD 130+.

**STONE CONDITION and DESCRIPTION:** Carnelian stone. The greater part of this stone is in fine condition, but the top has been chipped away removing approximately one-eighth of the stone and obscuring the head of the figure. The surface has some abrasion but is well preserved and does not affect the image. The stone has a convex surface with the bevelled edge on the back of the stone turning inward to the flat surface on the back.

**DEVICE and DISCUSSION:** A male figure faces front with weight on one leg and the other slightly bent with foot raised. Ground line is present. The figure wears no clothes except perhaps some garment on his shoulders. Other examples of this image type wear a wreath or diadem on the head. In one hand a generic round attribute is held out to the side, probably meant to be an offering plate. The other hand is held down with sheaves of wheat clustered in the hand. This is a typical and ubiquitous image of Bonus Eventus, an image type well-known at Vindolanda and across the empire. An almost exact duplicate of this image, also a carnelian stone, was found in the Severan period fort ditch (Birley and Greene 2006, 84-5. Cat. No. 22) and other Bonus Eventus figures have been found with the figure standing in profile with one leg bent and holding the same attributes (Birley and Greene 2006, Cat. Nos. 42, 52, 61). For this type found elsewhere in Britain, see Henig 2007, Cat. Nos. 203-221, with discussion of comparanda from throughout the empire.

**SF 16,848**
Width (max. pres.): 9mm  
Length: 12.5mm  
Depth: 2.5-3mm

**FIND LOCATION:** Context V12-87B. Probably modern ditch cut through yellow natural clay. Runs east-west past the north end of water tank CXXX. Cuts across V12-74B. Unstratified.

**STONE CONDITION and DESCRIPTION:** Carnelian stone. The surface is in excellent condition retaining a high polish and very little abrasion. The stone has a small chip on the top and a large portion is missing from the left side, but does not affect the image a great deal. The stone is slightly convex on its surface. The sides are bevelled down on the back side and turned inward toward the back of the stone. The back surface is flat.

**DEVICE and DISCUSSION:** A female figure stands facing front with head turned in profile. Ground line is present. She wears a long garment to her ankles and a diadem or wreath on her head. The figure holds an offering plate in one hand stretched out in front of her body and the other arm is crooked with what is probably meant to represent a cornucopia. This is the most poorly rendered ‘incoherent grooves’ style of intaglio carving and each aspect of the image is very abstracted into simple lines making identification difficult. The type is probably Fortuna with the attributes of prosperity and fecundity. Fortuna is found elsewhere at Vindolanda in the ‘Pantheistic’ guise, a combined image of Fortuna, Minerva and Victory (Birley and Greene 2006, 108-9. Cat. No. 49). The image is ubiquitous around Britain and the empire (Henig 2007, Cat. Nos. 314-338 for the standing and seated figure type).
SF 16,870
Width: 9.8mm
Length: 12.5mm
Depth: 3mm

FIND LOCATION:
Context V12-05B.
Turf and topsoil over 3rd century remains to the west of the path dividing V12-01B and V12-05B. Unstratified.

STONE CONDITION and DESCRIPTION: Red jasper. The stone is in perfect condition except one small chip on the right side surface. The shape is flat on the front face with sides bevelled down and inward on the back surface to a flat back face. There is no image carved into the surface, but this is the same shape and type of stone of so many other gems. It is tempting to see in this example evidence for the production of intaglios on site with this blank example representing a half-finished piece. There is no evidence otherwise for the production of intaglios, so this hypothesis would be difficult to prove on this example alone, but it remains a curious possibility.

SF 16,907
Width (max. pres.): 8mm
Length (max. pres.): 10mm
Depth: 2mm

FIND LOCATION:
Context V12-05B.
Turf and topsoil over 3rd century remains to the west of the path dividing V12-01B and V12-05B. Unstratified.

STONE CONDITION and DESCRIPTION: Red jasper. The stone is only partially preserved with the bottom half and the left side broken and missing. This does affect the incised figure. What remains is in very good condition with minor abrasion to the surface. The carved image retains a high polish and was clearly of high quality. The stone is typical of red jaspers elsewhere with a flat front surface and the back bevelled down and inward toward the flat back surface.

DEVICE and DISCUSSION: The image is a bust of a helmeted male in profile facing left. It seems to have originally been in very fine condition. The helmet is worn with plumed crest and the visor raised on the forehead. The cheek piece appears to be present but is cut off and difficult to discern in detail. This is the second helmeted warrior found in this group (see above, SF 10,810). This image is a bit larger and would likely not have included the bare chest in the example above and as seen in examples elsewhere in Britain (e.g. from Caerleon, Henig 2007, Cat. No. 467). This may be identified as Mars or simply as a helmeted warrior. Similar gems in Britain are identified by Henig as Alexander the Great or Achilles (Henig 2007, 151-2).

SF 10,854
Glass finger ring
Inner Diameter: 12mm
Outer Diameter: 19mm
Depth: 4mm (at the band); 6mm (bezel).

FIND LOCATION: V07B-58. Mixed topsoil, clay and iron pan covering the southern part of excavated area, immediately under the plough-soil. Above V07B-36. Unstratified.

CONDITION: Half preserved only. It is broken at the bezel and at the lowest point on the underside of the band. Surface is well preserved with little wear or breakdown.

DESCRIPTION and DISCUSSION: Clear glass ring with thin bands of yellow glass spun around the surface of the ring. The band is a circular tube that continues up the bezel, which widens and flattens out, a shape similar to many of the jet finger rings in Roman collections. Similar rings have been found on site at Vindolanda, a complete
ring with small glass ‘gemstone’ at the bezel (SF 16,163) and a fragment almost exactly like this one, though with yellow bands slightly further apart (SF 16,345). These will both be reported with the fort excavations of 2008-12 (A. Birley forthcoming).

SF 10,964
Inner Diameter: 17.5mm
Outer Diameter: 19.4mm
Width of band: 5-8mm (thickens towards shoulder)
Thickness of band: 1.4mm
Size of bezel (inscribed area): 9 x 12mm


DESCRIPTION and DISCUSSION: Silver ring, ¾ preserved with inscribed bezel. The ring band is roughly hexagonal with rounded joints, finishing at the top with a flattened bezel inscribed with the words MATRI PATRI (on two lines). The inscription is crudely done, the letters formed with impressed lines. The ‘I’ at the end of ‘Matri’ is barely legible, with only a faint impression remaining. The inscription reads: ‘To mother, to father’ and was probably a dedication to the owner’s parents (Tomlin 2009, 348). Tomlin suggests that it could have been, though less likely, a dedication to the matres citing similar but not exact epigraphic comparanda (ILS 4778, 4781). A silver ring from nearby Brocolitia (Carrawburgh, RIB II.3, 2422.28) with similar inscribed bezel reads simply MATRES (3 letters on each line), and is a definite dedication to this goddess. The very different formula in this example, however, seems more likely to be a personal dedication in honour or memory of one’s parents (Tomlin 2009, 348).


SF 16,642
Inner Diameter: N/A (too fragmentary)
Outer Diameter: N/A
Width of band: 3.3-3.9mm
Thickness of band: 0.6mm

FIND LOCATION: Context V12-13B. c.AD130-212. Thick clay foundation below V12-12B floor surface level, in the north east corner of the same building.

DESCRIPTION: Eight fragments of a silver ring. Band is flat and wider than a simple band. The surface is too corroded to detect any decoration, but it appears to be devoid of embellishment.

SF 16,720
Inner Diameter: N/A (too fragmentary)
Outer Diameter: N/A
Width of band: 4.6-6.8mm
Thickness of band: ca. 4.3mm

FIND LOCATION: Context V12-20B. c.AD213-270s. The edges of a pit, cutting through the Antonine rampart to the east of the Antonine annex wall and to the west of the bath house. Next to a vacant altar plinth. Filled with loose soil and building stones.

DESCRIPTION: Small fragment of one side of a jet band finger ring. A single band on the sides of the ring splits toward the bezel into two distinct sections and is cut off at this point. The fragment is only 16mm long and nothing more can be said about its detail.

SF 16,763
Inner Diameter: 19.5mm (as preserved, bent to an oval)
Outer Diameter: 22.8mm
Width of band: 2-3mm (with corrosion)
Thickness of band: 1.3-1.8mm (with corrosion)

FIND LOCATION: Context V12-43B. PreAD130s. Organic matter in a shallow trench cut through natural clay to the south of the most westerly surviving channel block of the 3rd century aqueduct. A depth of 40cms by 50cms wide.

DESCRIPTION: Simple silver (?) band finger ring. The surface is severely corroded but appears to lack decoration. The band is broken at one side missing ca. 13mm.

SF 16,796
Inner Diameter: 16.2mm
Outer Diameter: 22mm
Width of band: 3.7mm
Thickness of band: 2.9mm

FIND LOCATION: Context V12-38B. Post Roman. Turf and topsoil to the east of the Romano-Celtic temple CXXXI, and to the west of the channel stones from the aqueduct.

DESCRIPTION: Thick band copper-alloy ring with rounded profile, no inner flat surface. Possibly not worn as a finger ring. Surface is heavily corroded but shows no signs of further embellishment.

SF 16,820
Inner Diameter:15.8mm
Outer Diameter: 18.2mm
Width of band: 1.0-2.4mm
Thickness of band: 1.0-1.8mm

FIND LOCATION: Context V12-33B. AD120-c.130. Large ditch, with mixed laminated material and silt. The ditch runs north-south, below two smaller Antonine ditches and immediately west of the vicus road B6.

DESCRIPTION: Thin copper-alloy finger ring with narrow band. It appears to be thicker on one side and narrow on the opposite side, the latter probably worn on the underside of the finger. The ring is well-preserved with a polished surface.

SF 16,892
Three rings found together. Two are still fused to one another, a single one has separated.

Ring 1 (individual ring not fused; all measurements with corrosion)
Inner Diameter: 18mm
Outer Diameter: 26mm
Width of band: 4.0-4.5mm
Thickness of band: 3.8mm

Ring 2 (smaller of the two fused together; all measurements with corrosion)
Inner Diameter: 14.5mm
Outer Diameter: 21mm
Width of band: 4.5mm
Thickness of band: 3-3.3mm

Ring 3 (smaller of the two fused together; all measurements with corrosion)
Inner Diameter: 18.8mm
Outer Diameter: 25.8mm
Width of band: 3.8-4.3mm
Thickness of band: 3.8-4.2mm

FIND LOCATION: Context V12-83B. AD213+. The pit fill below the rubble fill of V12-79B, soft dark earth with pottery and bone fill.

DESCRIPTION: Three copper-alloy rings found together. Two are fused to each other. They were probably not worn as finger rings. All three lack a flat inner surface but are rounded throughout. The surfaces are heavily corroded and lack any decoration.

SF 16,909
Inner Diameter: 15.2mm
Outer Diameter: 17.5mm
Width of band: 1.8mm
Thickness of band: .8-1.0mm

FIND LOCATION: Context V12-106B. c. AD105-c120. Grey silt of earlier ditch than V12-101B, which cuts through it. This grey silt lines a much larger east-west ditch which is over 2.5m deep and 5m wide. Period IV northern fort ditch.

DESCRIPTION: A very thin band of copper-alloy, finger ring. The surface is heavily corroded and has no indication of surface decoration.

SF 16,930 (all measurements with corrosion)
Inner Diameter: 16-16.3mm
Outer Diameter: 21-21.5mm
Width of band: 3.0-3.9mm
Thickness of band: 3.0-3.5mm

FIND LOCATION: Context V12-40B. c.AD130-
Below cobbled road, B7, to the south of Eric Birley’s trench and aqueduct channel. The make-up of the road surface in this area, but above any black and organic material.

DESCRIPTION: Simple copper-alloy band with flat inner side. The surface is corroded but there appears not to have been any decoration or embellishment to the surface.

SF 16,932
Inner Diameter: 19mm
Outer Diameter: 23.8mm
Width of band: 3.1-3.3mm
Thickness of band: 2.3-2.6mm

FIND LOCATION: Context V12-57B. AD130s+. A broad north-south running ditch flanked by two more north-south running ditches to the south and below the 3rd century aqueduct channel.

Dark organic earth fills the ditch to a depth of 50-60cms.

DESCRIPTION: Simple copper-alloy band with flat inner side. The surface is slightly corroded. There is no decoration or embellishment to the surface.

SF 16, 945
Inner Diameter: 15.0
Outer Diameter: 19.0mm
Width of band: 3.0-3.4mm
Thickness of band: 2.0mm

FIND LOCATION: Context V12-48B. AD213-270s. To the south of the roadway B7, similar dark soil, but not covered by a cobbled surface.

DESCRIPTION: Simple copper-alloy band with flat inner side. It is complete but in two pieces. The surface is corroded. There is no decoration or embellishment to the surface.

**Bibliography**


Faunal Remains from Third-Century Contexts at Vindolanda
By Dr. Deb Bennett

Summary

The purpose of this report is to document species frequencies in three different third-century Vindolanda collecting areas, labelled A, B, and N as shown on the accompanying map. Species frequencies from a variety of third-century contexts are compared with a larger Vindolanda sample representing other centuries. All collections contain remains of the major domestic species but most contexts produce few bones of small mammals or birds. Deer remains indicate that meat stores were augmented by hunting, but the presence of feral pig (“wild boar”) cannot be determined. Pigs, sheep and goats were often slaughtered young; cattle were slaughtered at every age. Horses were slaughtered only when they became too old or too lame to work. Pigs are moderately frequent in third-century contexts but not as frequent as in earlier centuries. Equine percentages vary more than any other species, showing clear increase from east to west at the Vindolanda site. Continued collection and more detailed reporting of animal remains at the Vindolanda site is planned.

Introduction and Methods

Third-century Vindolanda excavations have produced animal bone from three areas, termed A, B, and N (Figure 1).

Area A encompasses a portion of the third-century Roman fort (Birley 2003, 2005, 2007, 2013). Area B includes western portions of the site which lie uphill from the fort and vicus. It contains structures interpreted as workshops, mausolea and temples (Blake, 2003, 2005, 2007). It also contains a large natural spring with associated Roman aqueduct, and a number of ditches and drains associated with buildings. Crossing the area are roadways leading from the west to the vicus and fort. There are also large areas of “sward” or open space not associated with any building or structure.

Areas A and B both lie to the south of the ancient Stanegate Road, which traverses the Vindolanda site from east to west and passes directly before the north or main gate of the Area A fort. The newest area of excavation at Vindolanda is Area N, situated as far west as Area B but to the north of the Stanegate. Excavation in this area is still in a preliminary or sampling stage so that the collection is smaller than those from Areas A or B.

A survey of Vindolanda collections from other centuries is included in this report in order to provide a scale of comparison. These collections are also labelled A, B, and N but it is important to realize that, while their boundaries lie in the same general areas, they are more extensive than those shown on the map (Figure 1) that pertain only to the third century.

Excavation of third-century contexts at Vindolanda has produced a collection of animal bone that extends our knowledge of ancient lifeways and animal husbandry (Hodgson, 1976, 1977; Bennett, 2005, 2007a, 2007b; Bennett 2012; Bennett and Timm, 2013). Bones come from a variety of contexts which are defined for purposes of this report as follows:

- Fort: Material incorporated into the actual fabric of a fort wall, often as packing and usually in rather broken and degraded condition
- Demolition: Material recovered from rubble heaps produced when buildings fell down or were torn down in antiquity
- Floor: Upon the floor of a building, including houses, guardrooms, granaries, warehouse, mausoleum, or temple; also including pits dug into such floors
- Hearth: Material from any burned area, or from near or within an oven or firepit
- Yard: Upon a cobbled or flagged surface adjacent to, and just outside of, a building; including alleyways between buildings or between buildings and the fort wall
- Road: Upon the surface of a roadway
- Sward: Upon the surface of open ground, often near a roadside
- Ditch: From within a fort ditch, drain, latrine, channel, or aqueduct

Because bones from some third-century contexts number less than fifty – the generally-accepted cutoff point for reasonable statistical reliability
(Lyman, 2008) -- some contexts have been combined as follows to create histograms (Figs. 5-8):

- Fort + Demolition = Wall and rubble context (only two third-century bones were collected from this context from Area B, so the histogram (Fig. 8) represents only Area A)
- Floor + Hearth = Living space context (Fig. 7)
- Road + Sward + Yard = Open area context (Fig. 6)
- Ditch (bone is frequently found in Vindolanda ditches and drains, so this context has not been combined with any other) (Fig. 5)

As with previous excavations at Vindolanda, bone from most contexts was recovered by careful hand-trowelling. Bone from Level 2, East Granary (all pertaining to the third century) was recovered by wet-sieving. Recovered bones were washed, dried, sorted, permanently labelled, and catalogued.

Percentage species representation in this report is based upon raw bone counts, not upon minimum number of individual (MNI) calculations. A total of 2047 bones of third-century date have been recorded from Area A, 508 from Area B, and 78 from Area N. The general collection from Area A (all time periods from about 85 AD through about 500 AD, previously published, collected 2006-2008) numbers 5752 items. The general collection from Area B numbers 2800 items, and that from area N totals 468 items.

**Faunal List**

The fauna from all third-century Vindolanda collections includes the following species:

- **Bos taurus** – Cattle
- **Equus sp.** – Horse, Mule, and Ass
- **Sus scrofa** – Pig
- **Capra hircus** – Goat
- **Ovis aries** – Sheep
- **Canis familiaris** – Domestic dog
- **Capreolus capreolus** – Roe Deer
- **Cervus elaphus** – Red Deer

In addition, Areas A and B have produced remains of small species. The areas differ in their content of these rarer animals:

**Third-century Area A** (including Level 2, East Granary; see Bennett and Timm, 2013):

- **Apodemus sylvaticus** – Wood mouse
- **Apodemus cf. flavicollis** – Yellow-necked mouse
- **Arvicola terrestris** – Water vole
- **Felis catus** – Semi-feral cat
- **Lepus capensis** – European hare
- **Martes cf. martes** – Pine marten
- **Meles meles** – European badger
- **Mus musculus** – Commensal mouse
- **Mustela erminea** – Stoat
- **Talpa europaea** – European mole
- **Vulpes fulva** – Fox

**Third-century Area B**

- **Anas querquedula** – Garganey
- **Columba oenas** – Stock dove
- **Coturnix coturnix** – Quail
- **Cygnus cygnus** – Whooper swan
- **Emberiza citrinella** – Yellowhammer
- **Emberiza (Milaria) cf. calandra** – Corn bunting
- **Gallus gallus** – Domestic chicken
- **Grus grus** – Common crane
- **Hirundo rustica** – European swallow
- **Passer domesticus** – House sparrow
- **Passer cf. montanus** – Mountain sparrow
- **Sturnus vulgaris** – Starling
- **Tetrao tetrix** – Black grouse
- **Turdus philomelos** – Song thrush
- **Tyto alba** (pellets only) – Barn owl

**Bufo bufo** – Common toad

**Third-century Area N**

- **Pluvialis apricaria** – Golden plover

Third-century area N contexts have to date produced no small animal species.

This faunal list of course gives a falsely limited picture, insofar as the vagility of most of the species greatly exceeds the size of the entire Vindolanda site; indeed, most of the mammals and birds known from Vindolanda would have ranged over northern Britain, with some ranging into continental Europe, north Africa, or even North America. From all Vindolanda excavation areas, encompassing all time periods, a total of 24 mammal and 23 bird taxa are currently known, along with common toad and salmonid fish (see Bennett and Timm, 2013).
Analysis and Discussion: Species Frequencies

Because excavation in Area A has been intensive, sample sizes (“n”) for this area are generally larger than those for Area B. Sample sizes for Area N are smaller but still large enough to convey a fairly reliable idea of frequency trends (Tables 1-6).

The most common species in third-century Vindolanda, as in all time periods and at most other Romano-British sites, is cattle (Bos taurus). Whether looked at in terms of overall numbers or across contexts, at Vindolanda cattle rarely represent less than about 48% of the total from any context. In some third-century contexts, cattle bones may represent as much as 92% of total remains.

Universally, the next most frequently represented species is pig (Sus scrofa), usually followed by combined sheep and goat (counted as “ovicaprine” or sheep/goat since most postcranial bones of sheep, Ovis ammon, are difficult to tell from those of goats, Capra hircus). Third-century pig frequencies range between 8% and 14%, while ovicaprines range from about 3% to 14%.

Cattle, pigs, and ovicaprines formed the mainstay of the diet of the people of ancient Vindolanda. Pig bones at high frequency are thought to indicate a Legionary presence (Davies, 1971; King, 1984). On the basis of epigraphy and manufactured artefacts (Blake, this volume; R. Birley, 2005; R. and A. Birley, 2003), legionaries were more likely to have been present at Vindolanda in earlier centuries. Pig bone frequencies, which are higher in first and second-century collections than in those of the third, support this suggestion (Figs. 2, 3, 4).

Against the pigs we may contrast the equines, whose frequencies show a consistent pattern in all centuries. Except with respect to bones found in living space contexts (Fig. 7), the farther west the excavation site on the Vindolanda grounds, the more equine remains can be expected. Thus a higher percentage of horse bones come from Area B than from Area A, and the highest of all from Area N (Fig. 4). In terms of the wider Vindolanda collection, equine remains become more common in later centuries, and were also at relatively high frequency during the Severan anomaly (AD 209-212). Horse bones most commonly come from ditches, road surfaces, and areas of open ground (Figs. 5 and 6).

The most frequent bird remains from all areas of the Vindolanda site are those of the domestic chicken, Gallus gallus. Outside of the collection made in 2008 from the subfloor of the East Granary in Area A, almost all bones of wild birds recovered are those of the more comestible species, including black grouse (Tetrao tetrix), barnacle goose (Branta leucopsis), golden plover (Pluvialis apricaria), whooper swan (Cygnus cygnus), common crane (Grus grus), and ducks of the genus Anas (Bennett, 2007a; Bennett and Timm, 2013). Third-century Area B has produced only golden plover (Pluvialis apricaria), while third-century Area N has so far produced no bird remains. Bird remains average less than 1% of the bones recovered from any area, context, or time period (Figs. 2 and 3). Bird bones at Vindolanda are often found in drains and wells.

Rarer than the remains of birds are those of small mammals. Outside the East Granary (situated in Area A) they are very infrequent, but when all time periods are considered they include a fairly wide variety: pine marten (Martes sp.), European badger (Meles meles), semi-domesticated cat (Felis catus), fox (Vulpes fulva), water vole (Arvicola terrestris), and commensal mouse (Mus musculus). Shrews (Sorex spp. and Neomys spp.) have not been found at Vindolanda, although they have been reported from nearby Birdoswald (Izard, 1997). Rats (Rattus sp.) appear not to have been present at Vindolanda, while foxes are known only from fragmentary remains. See Bennett and Timm (2013) for full discussion of the ecological interrelationships of humans, birds, and small mammals in the third-century East granary and surrounding contexts.

Lower vertebrates are the rarest animals represented at Vindolanda. The common toad, Bufo bufo, is represented in the third-century East Granary collection from Area A. The scarcity of bones of small species outside the East Granary may be due to habitat preference; toads, stoats, mice, swallows, sparrows and barn owls probably lived under and in the East Granary building (Bennett and Timm, 2013). High numbers of other small species were recovered from the East Granary thanks to the extensive use of wet-sieving as a method of recovery in this area.
Context, Time, and Utilization of Different Species

Cattle – *Bos taurus*

More than one breed of cattle appears to have been present at Vindolanda, a conclusion hinted at also by the Severan Ditch collection previously reported (Bennett, 2005) and by some other Roman-era collections from northern England (Stallibrass, 2002, p. 438). Whether there were more than two breeds cannot presently be determined; one of these may be a “hide breed” represented only by skulls and distal limb elements (Serjeantson, 1989).

Some differences in shape, particularly the rugosity of attachments for ligaments and muscles, are attributable to massiveness as well as sex, age, and use, and are not reliable indicators of breed differences. Cattle jaws with both five and six teeth in the cheek dentition – another difference that is probably not attributable to breed – have come from all Vindolanda collections. Many cattle skeletal elements otherwise similar in degree of maturity and rugosity show great differences in size. That these differences are not due merely to sexual dimorphism is indicated by skulls of animals with similar-sized horn cores but differing proportions. Skulls vary in the height of the orbits, the distance of the point of the facial crest from the orbit, and the breadth across the orbits. Specific data, illustrations, and breed comparisons will appear in a planned monograph on Vindolanda cattle.

Almost all cattle humeri and femurs from third-century Vindolanda collections – like those from the general Vindolanda collection and from other Romano-British sites -- are in fragmentary condition due to having intentionally been smashed, presumably for marrow recovery (Hodgson, 1976, 1977; Bennett, 2005). Likewise, almost all tibias and radii are broken, although due to the somewhat less fragile nature of these bones the fractures are less likely to be of a spiraling-splintering nature and more likely to be lengthwise splits.

Other evidence of utilization comes in the form of deep cut-marks which must have been made on bones by a heavy knife or cleaver sharpened to a razor edge. Such marks may be found upon many different bones, including the occipital area of the skull, the atlas and axis vertebrae, thoracic and lumbar vertebrae, scapula, humerus, femur, tibia, radius, ulna, metapodials, and ribs. They are least frequent upon phalanges, the sacrum, lower cervical vertebrae, caudal vertebrae, and pelvis, but most frequent upon scapulas (see Bennett, 2005, pp. 138, 141, 160, 161).

Butchery marks on long bones of cattle concentrate upon the articular areas, suggesting that the object was to disarticulate the carcass at the joints (compare Berg, 1999, p. 251). Marks upon humeri and femurs are no different, indicating that these limb segments were not smashed until first having been disarticulated. The cuts are clean and smooth with no crushing or splintering, and must have been made while the bone was still fresh, damp, and elastic.

Cleaver-marks upon scapulas typically damage the rim of the glenoid, the bicipital tuberosity, or the scapular spine. Sometimes the glenoid itself is cloven asunder, and the bicipital tuberosity is often chopped completely away. The scapular spine, likewise, is often shorn down its length as if the scapula had been stood on end, the butcher then executing a sweeping blow with the flat of the cleaver held parallel to the lateral surface of the scapula. This would be the most convenient way to “open” this cut of beef if it had been smoked or salt-cured with the hide still on (cf. Cato, *De Agricultura* in Anonymous, 1913; Dobney, *et al.* 1998, p. 421).

It is rare to find a bovine scapula from any Vindolanda collection that bears no butchery marks. Equally rare is to find one that lacks a hole in the blade. The edges of scapula-holes are never clean, always showing crushing on the medial surface of the blade while splinters of bone are pushed outward to the lateral surface. Such damage is consistent with the scapula having been lagged onto a sharp-pointed iron hook. The hook must have been firmly fixed to a wall or post, the point angled upward and long enough to penetrate 8 to 10 cm (3 or 4 inches) of the thick subscapularis muscle plus the bone. In some cases the hole is enlarged to form a long, ragged tear, as if downward force had been exerted upon the blade while it was impaled, or as if it had been impaled several times to form a line of adjacent holes (see Bennett 2005, p. 160). A similar process is usual in production of smoked beef shoulder, a mainstay of Roman army diet. Meat in this form was apparently often imported; this accounts for the excess number of scapulas usual at Romano-British fort excavations (see Berg, 1999; Dobney *et al.* 1998;
Stallibrass and Nicholson, 2000). Interestingly, in the Vindolanda collections, scapulas lacking holes are in most cases exceptionally large; they are interpreted as local produce.

Third-century collections at Vindolanda present the majority of known examples of “target skulls”: cattle crania bearing small, square holes probably caused by ballista bolts, or slit like holes consistent with penetration by arrows or lances (Bennett, 2005). Third-century collections also contain cattle skulls that demonstrate methods of slaughter; the Area B collection contains a skull with a quadrilateral crush-wound to the right frontal bone consistent with a blow from a square-headed hammer. This method of despatch (or stunning prior to killing) is similar to a concentrically circular crush-wound to the forehead previously reported (Bennett, 2005, p. 159), which was probably due to a blow from an “apple-headed” poleax.

Sheep and Goat – *Ovis ammon* and *Capra hircus*

The current consensus, despite efforts to identify reliable characters (Hildebrand, 1955; Vann and Grimm, 2010; Zeder and Lapham, 2010) is that in the absence of skull material bearing horn cores, bones of *Ovis ammon and Capra hircus* are difficult to tell apart, and the recent practice of workers in Romano-British zooarchaeology is to lump them together as “ovicaprine” or “sheep-goat” (c.f. Stallibrass, 1995). Nevertheless, when a series of specimens is available skull material can usually be identified even in the absence of horn cores.

Third-century collections from Vindolanda contain numerous partial skulls of both *Ovis ammon* and *Capra hircus*, along with numerous jaw rami which can also be placed with reasonable certainty. Vindolanda sheep are tiny, generally only two-thirds the size of the goats, which are themselves 10-30% smaller than modern domestic goats. The teeth of Vindolanda sheep are, in addition, arranged in a more curving toothrow and are often twisted out of alignment or imbricated, and are occasionally absent through failure to develop or erupt.

With respect to cranial material, third-century collections from Area A produced 22 partial skulls or jaws, of which about 86% pertain to goats. Area B produced 2 ovicaprine jaws, both of which belong to goats. Area N also produced 2 jaws, again pertaining to goats. The predominance of goats may indicate that most remains represent skull parts or distal limb elements imported in partially-cured hides. Only 4% of goat jaws come from either suckling kids or nannies or billys past the age of three, while over 80% come from submature animals (rising two-year-olds) with the inferior third molar just beginning to erupt. This likely reflects the hide trade more than a local preference for tender *cabrito*; skulls were evidently often left in hides to prove that the animal had been slaughtered at the optimum time for tanning (Serjeantson, 1989; Albarella, 2003; Ervynck, 2005).

**Pigs – *Sus scrofa* – Feral or Domestic?**

It is not certain whether any Vindolanda material represents “wild” (actually feral) boar. Even the biggest pigs from Roman Vindolanda are only 65% the size of a modern two year old domestic hog. The critical inferior third molar measurements (averaging about 30 X 17 mm), lie right on the borderline between putative wild and domestic populations (Mayer, 1998; Legge, 2013). The shape and proportion of postcranial elements in Vindolanda pigs is also subtly different from modern domestic hogs, implying a more gracile animal that could run fast. The skull seems to have been proportionally somewhat longer and slimmer through the snout. All these characteristics could pertain equally to wild or domestic pigs of Roman times (Albarella *et al.*, 2007).

The people of Vindolanda evidently preferred their pork young and tender, as over 20% of pig remains recovered from all collections are juveniles; if subadults are counted, the percentage rises to nearly 100%. Remains of smoked piglet have been reported from the East Granary (Bennett and Timm, 2013). By contrast, beef appears to have been eaten at all ages; most cattle (about 75%) were despatched as mature animals older than two years. This implies differences in method of cooking which are borne out by the number of roasted elements: only 1% for cattle vs. 8% for oovicaprines and pigs and 16% for deer.

Although the frequency of pig remains in third-century contexts is lower than in earlier centuries, it is still moderately high. Interestingly pig bones are more frequent in Area A (inside the fort), especially from living space contexts, than from Area B. Area N ditches also produce a higher percentage of pig
remains than Area B. Thus whether Legionaries were present or not, in the third century pork appears to have been consumed by soldiers inside the fort. Pig bones in ditches from Area N hint at pork slaughter and consumption outdoors, perhaps in connection with religious festivals or army musters.

**Deer – Cervus elaphus and Capreolus capreolus**

The Red deer, *Cervus elaphus*, is present in the Vindolanda collections at low frequency – never higher than about 4%, whether in collections from the third century or from any other time period before AD500. Roe deer, *Capreolus capreolus*, are only about half as frequent as the larger cervid species. Oddly, their frequency rises in contexts where bony material has been used as road-base or wall packing, perhaps because of the durability of their typically densely-ossified antlers. Antlers are the most common remains from both species of deer, and are often found on the floors of buildings identified as workshops. To date, no bones of Fallow deer (*Dama dama*) have been certainly identified from Roman Vindolanda.

**Dogs – Canis familiaris**

Dog remains from Vindolanda, currently under study (Bennett and Timm, mss. in prep.) present a diversity of size, skull morphology, and overall build. The most common are similar to the “brachyme terrier” reported by Hambleton (2004), which stood about 38 cm (14 inches) at the shoulder. The limb bones of these dogs are easy to identify due to their achondroplastic and bandy-legged morphology. “Pack dogs” of normal morphology, standing about 45 cm (18 inches) at the shoulder, are next most frequent (see Bennett, 2005 pp. 118-126). Tracks impressed in tiles and bricks of an early second-century military bath-house prove that dogs both smaller and larger than these were kept at Vindolanda (Bennett, 2012); however, it is not yet known whether their diversity changed from the first to the third and later centuries.

Dog bones average less than 2% of third-century remains, although they represent about 18% of all third-century bones from Area N. In actuality this reflects the associated remains of a single individual of the “brachymel” type, which by the raw bone-count method employed in this report records as 14 elements. If the dog were instead counted as 1, it would represent about 1.6% of third-century Area N remains. Dogs are present about equally in all contexts and collecting areas.

**Equines – Equus sp. – Horse, Ass, and Mule**

Equine remains are much more frequent from third-century Areas B and N than from Area A. Whereas the frequency of equine remains from Area A ranges from 3.5% - 4.5%, in Area B it reaches almost 7.5%. The Area N collection, though smaller in size, produces 14% equine bone. Horse remains are most common from ditches and drains, although they also associate with outdoor contexts, particularly paved surfaces.

Equine remains do not carry the same meaning as those of food species. Horses, asses, and mules were used by the Romans for riding and as pack and draught animals. There is previously published evidence (Bennett, 2005) that horses at Vindolanda were butchered, presumably to provide meat for consumption either by humans or by dogs, but there is no evidence from anywhere in Roman Britain or the wider Roman Empire that equines were raised primarily for meat (Alcock, 2001). Evidence from written sources, including the Vindolanda tablets, indicates that for at least parts of its long history the site was occupied by “part mounted” military units which at times might have numbered hundreds of cavalrymen (R. Birley, 2009). While it is tempting to equate larger numbers of horse bones with larger numbers of cavalrymen, it is necessary to remember that horse remains equate to dead horses – not live ones on which cavalry could ride away to battle!

Larger numbers of horse bones may therefore indicate:

- Periods of relative peace, when cavalry units were bivouacked at Vindolanda for long periods. Horse bones would then represent attrition from herds belonging to the military due to mishap and illness. For example, a series of anterior thoracic vertebrae from Area B shows that the animal died before its fifth year, as evidenced by the unfused or recently-fused physes and fusing epiphyses on the tops of the dorsal processes. Another series of thoracic vertebrae which are geriatric, pathological, and bearing butchery marks, comes from Area A (Bennett, 2005), and constitutes evidence that horses that had become broken-down were slaughtered for meat.
• A period when battle raged to the very gates of the Roman fort, in which case high numbers of horse bones would indicate deaths which occurred due to wounds. Context speaks to this somewhat enigmatically: horse bones in both Areas A and B are often found upon road surfaces. Does this mean that the animals fell in battle and their bulky carcasses were then left in the open to decompose? Or does it instead reflect the greater durability of horse skull parts (especially teeth) compared to those of cattle or other species, so that horse material incorporated during construction into road-base simply survives this rough treatment better?

In terms of the wider Vindolanda collection, horse bones in both Areas A and B increase in frequency through time, with the period from AD213-400 producing the most specimens. This may possibly reflect an increasing tactical reliance upon cavalry with the decline after about AD400 of the Roman central government and concomitant decline in the recruitment and training of infantry (Dixon and Southern, 1992; Speidel, 1994). The anomalous Severan period in Area A also produces fairly high amounts of horse bone; this may be associated with a visit to Vindolanda by the Emperor’s famous Numidian cavalry (Dixon and Southern, 1992; Bennett, 1997). It is hoped that future DNA testing of equine specimens will give us a much clearer idea of the origins of Romano-British cavalry horses.

Some of the Area B equine cheek teeth show polish and striations consistent with grain feeding, as do some from Area A (Bennett, 2005). Horse teeth from Area B frequently lack the exterior coating of cementum, and to some degree also the interior cementum; this is likely due to etching by acidic groundwater (Blake, pers. comm.; and see Hefford, 2005). Etched teeth have not been recovered from either Area A or Area N.

The most complete equine specimen from third-century Area B is the jaw of an aged male. It is shallow through the angle, with a relatively narrow, backsloping ascending ramus. This characteristic of the jawbone, along with details of the occlusal enamel pattern of the teeth, hints that the animal may have been a mule (Equus caballus X Equus asinus) (Bennett, 1980). With a total anteroposterior length of 44.7 cm, it is big for a donkey. Third-century collections from all Vindolanda areas also contain stout III metapodials (“cannon bones”) and other relatively large-sized postcranial elements that signal the presence of horses, as well as postcranial bones of smaller and more gracile morphology that pertain to donkeys.

**Conclusions**

Large amounts of animal bone have been recovered at Vindolanda from all excavation areas. Sample size is largest from Area A, intermediate from Area B, and smallest to date from Area N.

The order of overall frequency of large animal species is the same from all three collecting areas. Food species are the most common, the most frequent being cattle, followed by pig and “ovicaprine” or sheep + goat. Next most frequent are the equines (horse, ass, and mule), Red deer, Roe deer, and domestic dog. Least frequent from Areas A and B are small mammals, birds, and toads. No small species have so far been recovered from third-century contexts of Area N.

Pig remains are moderately frequent from the third-century fort (Area A), and are more frequent from ditches in Area N than from anywhere in Area B, indicating that soldiers commonly ate pork. The mainstay of the military diet appears to have been beef shoulder preserved by smoking and salt-curing. Scapulas were scraped to remove every vestige of meat, while marrow-bearing bones were smashed after disarticulation.

Pigs and ovicaprines were frequently slaughtered young, whereas cattle were slaughtered at any age. At least two breeds of cattle are represented from all collecting areas among third-century remains, differentiable on the basis of conformation and not merely size. It is possible that one of these might have been a “hide breed”, i.e. represented only by skulls and limb bones imported in the partially-cured hide. Previously-reported third-century Vindolanda collections (Bennett, 2005; Bennett and Timm, 2013) show lower than expected numbers of ribs and proximal limb elements and higher than expected numbers of distal limb elements. The same observations pertain to goats, since goat-hides are known to have been in high demand by the Roman Army for the making of tents (R. Birley, 1977 and 2009).

Vindolanda hunters certainly targeted deer of both species, but none of the pig remains from either the
third century or the wider Vindolanda collection are definitively those of “wild” boar. Deer and boar-hunters were often army officers (Alcock, 2001, and see Birley and Birley, 2003 and R. Birley 2005), though not necessarily legionaries.

All three species of equine – horse, ass, and mule – were probably present at Vindolanda (Bennett, 2005). A nearly-complete jaw from Area B probably pertains to a mule, but all three collections also contain postcranial remains that likely pertain to horses and donkeys. These will be completely analyzed in a future monograph covering all Vindolanda horse remains. No remains of juvenile equines have so far been discovered from any excavation area or time period at Vindolanda, indicating that horse breeding was probably not commonly practised there, and that most horses on site were bred, raised, and broken elsewhere.

All three collecting areas have produced third-century horse and cattle teeth showing striations and polishing indicative of grain feeding (c.f. Bennett, 2005 p. 132-133). It is reasonable to think that at least some Vindolanda livestock were fed grain and hay – in the case of cattle, to fatten them up or to increase milk production; in the case of horses and draft oxen, to strengthen them for work.

The domestic chicken is the most common bird recovered from either Area A or B. Other meaty species are next most frequent, including black grouse, ducks, barnacle geese, quail and plovers. Area A has also produced the edible whooper swan and common crane. Among non-comestible birds, Area A has produced house sparrows, a variety of small songbirds, and evidence of barn owls, all from the third-century level of the East Granary.

A single specimen of the house mouse (not from a third-century context) has been recovered through hand-troweling methods at Vindolanda. Hand-troweling also produced two partial skulls of the water vole from third-century paved surfaces immediately adjacent to the East Granary. Wet-sieving methods employed for the East Granary study produced six third-century species of small mammals not known from any other Vindolanda context, including wood mouse, yellow-necked mouse, field vole, stoat, bank vole, and European mole, along with a dozen otherwise unknown bird species and common toads.

As systematic exploration continues, a picture of animal utilization at Roman Vindolanda is beginning to emerge. Third-century collections from all Vindolanda excavation areas exhibit similar faunal profiles with the notable exception of horse, which is more common in the western parts (Areas B and N) of the Vindolanda site. Further planned exploration of Areas B and N will almost certainly add to the Vindolanda faunal list and provide further insights concerning human-animal interactions.

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Vindolanda Excavations. The campaigns of 2007-2012 in the vicus or extramural settlement ("Area B")

Figure 1. Map of the Vindolanda site showing third-century contexts of Areas A, B, and N.
Figure 2. Percentage representation of species from Area A (exclusive of the East Granary and Severan Ditch) through time. Note that some time periods overlap, so that total “n” represented in this chart is higher than the actual total sample size from Area A. Note that the boundaries of Areas A, B, and N considered for all time periods do not correspond with those for third-century contexts shown in map Fig. 1.
Figure 3. Percentage representation of species from Area B through time. Note that some time periods overlap, so that total “n” represented in this chart is higher than the actual total sample size from Area B. Note that the boundaries of Areas A, B, and N considered for all time periods do not correspond with those for third-century contexts shown in map Fig. 1.
Fig. 4. Percentage representation of species from third-century contexts, comparing Areas A, B, and N.
Vindolanda Excavations. The campaigns of 2007-2012 in the vicus or extramural settlement ('Area B')

Fig. 5. Percentage representation of species from third-century ditch, drain, well, and water tank contexts, comparing Areas A, B, and N. Area N is not charted in subsequent figures because all third-century remains from this area come from ditches.
Fig. 6. Percentage representation of species from third-century open area contexts, including sward, paved roads, and paved yards, comparing Areas A and B.
Vindolanda Excavations. The campaigns of 2007-2012 in the vicus or extramural settlement ('Area B')

**Living Space Contexts**

Fig. 7. Percentage representation of species from third-century living space contexts, including floors, hearths, ovens, and firepits, comparing Areas A and B.

Fig. 8 (Far right). Percentage representation of species from third-century rubble piles associated with fort walls and fort buildings and their demolition. Only Area A is charted (see map Fig. 1).
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<td>7</td>
<td>5</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>75</td>
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<td>16.00</td>
<td>9.33</td>
<td>6.66</td>
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<td>5.17</td>
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<td>5.46</td>
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</tbody>
</table>

Table 1. Raw bone counts and calculated percentages, all Vindolanda time periods and contexts. Note that when all time periods are included, Area A,B, N boundaries do not coincide with those shown for third-century contexts (map Fig. 1 of this report).

* From areas outside of the East Granary.
### Table 2. Raw bone counts, totals, and percentages for third-century contexts in Areas A, B, and N.

<table>
<thead>
<tr>
<th>YEAR COLLECTED</th>
<th>CATTLE</th>
<th>PIG</th>
<th>SHEEP AND GOAT</th>
<th>EQUINE</th>
<th>RED DEER</th>
<th>ROE DEER</th>
<th>DOG</th>
<th>BIRD</th>
<th>SMALL MAMM</th>
<th>SAMPLE SIZE (&quot;n&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005A</td>
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<td>44</td>
<td>13</td>
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<td>0</td>
<td>2047</td>
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<td>2006A</td>
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<td>107</td>
<td>36</td>
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<td>23</td>
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<td>9</td>
<td>1</td>
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</tr>
<tr>
<td>2008A</td>
<td>602</td>
<td>94</td>
<td>61</td>
<td>23</td>
<td>19</td>
<td>9</td>
<td>22</td>
<td>17</td>
<td>3</td>
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<td>212</td>
<td>72</td>
<td>48</td>
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<td>1.95</td>
<td>1.56</td>
<td>1.27</td>
<td>0.2</td>
<td>100%</td>
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<table>
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<th>SHEEP AND GOAT</th>
<th>EQUINE</th>
<th>RED DEER</th>
<th>ROE DEER</th>
<th>DOG</th>
<th>BIRD</th>
<th>SMALL MAMM</th>
<th>SAMPLE SIZE (&quot;n&quot;)</th>
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<td>0</td>
<td>508</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
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<td>3</td>
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<tr>
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<td>38</td>
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<td>1</td>
<td>0</td>
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<td>7.48</td>
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<td>0</td>
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<table>
<thead>
<tr>
<th>YEAR COLLECTED</th>
<th>CATTLE</th>
<th>PIG</th>
<th>SHEEP AND GOAT</th>
<th>EQUINE</th>
<th>RED DEER</th>
<th>ROE DEER</th>
<th>DOG</th>
<th>BIRD</th>
<th>SMALL MAMM</th>
<th>SAMPLE SIZE (&quot;n&quot;)</th>
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<tbody>
<tr>
<td>2012N</td>
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<td>6</td>
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<td>14</td>
<td>0</td>
<td>0</td>
<td>78</td>
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<tr>
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<td>12.82</td>
<td>7.7</td>
<td>14.1</td>
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<td>0</td>
<td>17.95</td>
<td>0</td>
<td>0</td>
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### Table 3. Raw bone count totals and percentages for third-century ditch contexts in Areas A, B, and N.

<table>
<thead>
<tr>
<th>DITCH CONTEXT</th>
<th>CATTLE</th>
<th>PIG</th>
<th>SHEEP AND GOAT</th>
<th>HORSE ASS &amp; MULE</th>
<th>RED DEER</th>
<th>ROE DEER</th>
<th>DOG</th>
<th>BIRD</th>
<th>SMALL MAMM</th>
<th>SAMPLE SIZE (&quot;n&quot;)</th>
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<td>11</td>
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<td>1.97</td>
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<td>AREA B TOTALS</td>
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<td>13</td>
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<td>AREA N TOTALS</td>
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Table 4. Raw bone totals and percentages for third-century Open Area contexts in Areas A and B, including paved roads and yards and open ground or “sward”.

<table>
<thead>
<tr>
<th>OPEN AREA CONTEXT</th>
<th>CATTLE</th>
<th>PIG</th>
<th>SHEEP &amp; GOAT</th>
<th>HORSE, ASS, &amp; MULE</th>
<th>RED DEER</th>
<th>ROE DEER</th>
<th>DOG</th>
<th>BIRD</th>
<th>SMALL MAMM (“n”)</th>
<th>SAMPLE SIZE</th>
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<tr>
<td>AREA A TOTALS</td>
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<td>7</td>
<td>3</td>
<td>7</td>
<td>4</td>
<td>3</td>
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<tr>
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<td>1.90</td>
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<td>0.71</td>
<td>1.66</td>
<td>0.95</td>
<td>0.71</td>
<td>100%</td>
</tr>
<tr>
<td>AREA B TOTALS</td>
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<td>38</td>
<td>22</td>
<td>24</td>
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<td>0.28</td>
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Table 5. Raw bone totals and percentages for third-century Living Space contexts in Areas A and B, including floors, hearths, firepits, and ovens.

<table>
<thead>
<tr>
<th>OPEN AREA CONTEXT</th>
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<th>SHEEP &amp; GOAT</th>
<th>HORSE, ASS, &amp; MULE</th>
<th>RED DEER</th>
<th>ROE DEER</th>
<th>DOG</th>
<th>BIRD</th>
<th>SMALL MAMM (“n”)</th>
<th>SAMPLE SIZE</th>
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<tr>
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<td>4</td>
<td>1</td>
<td>1</td>
<td>435</td>
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<td>2.53</td>
<td>0.92</td>
<td>0.23</td>
<td>0.23</td>
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</tr>
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<td>AREA B TOTALS</td>
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<td>0</td>
<td>0</td>
<td>37</td>
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<td>91.9</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100%</td>
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</tbody>
</table>

Table 6. Raw bone totals and percentages for third-century fort walls and rubble piles associated with their demolition in Area A.

<table>
<thead>
<tr>
<th>OPEN AREA CONTEXT</th>
<th>CATTLE</th>
<th>PIG</th>
<th>SHEEP &amp; GOAT</th>
<th>HORSE, ASS, &amp; MULE</th>
<th>RED DEER</th>
<th>ROE DEER</th>
<th>DOG</th>
<th>BIRD</th>
<th>SMALL MAMM (“n”)</th>
<th>SAMPLE SIZE</th>
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</thead>
<tbody>
<tr>
<td>AREA A TOTALS</td>
<td>351</td>
<td>69</td>
<td>81</td>
<td>21</td>
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<td>20</td>
<td>6</td>
<td>4</td>
<td>0</td>
<td>562</td>
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<tr>
<td>PCTS</td>
<td>62.45</td>
<td>12.28</td>
<td>14.41</td>
<td>3.74</td>
<td>1.78</td>
<td>3.56</td>
<td>1.07</td>
<td>0.71</td>
<td>0</td>
<td>100%</td>
</tr>
</tbody>
</table>
Vindolanda Environmental Samples
By Dr. Jacqui Huntley

This report assesses whole earth samples from 4 years of excavation. Processing methodology is attached to the relevant year. In all cases assessment was by examination under a Wild M3 stereoscopic microscope at magnifications of up to x50. Identification was by comparison with modern reference material belonging to the author.

VIN 2007 – assessment

Whole earth samples were taken from a variety of contexts and sent to the author for, in the first instance, assessment. As most of the samples were highly organic a 500g sub-sample was taken and washed through a series of sieves to 350 microns. In other cases weights processed are detailed below.

<table>
<thead>
<tr>
<th>Area and context</th>
<th>Notes and recommendations (Seeds all charred unless otherwise stated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V07B-25</td>
<td>c.AD120-140s. Pit fill from a circular pit cut into V07B-24. Heavily burnt clay with ironstones and whin boulders in fill. Dark grey-brown very fine organic material with some sand and the occasional small stone. Processing produced fine organic material with small bits of wood although most was small fragments of charcoal and mineral. A small amount of iron concretions, a few nettle seeds and one sedge nutlet. No further action.</td>
</tr>
<tr>
<td>V07B-45</td>
<td>c.AD100-c.130s. Ditch fill. Dark grey-brown sandy, silt and clay. Greasy feel; occasional twigs visible and other mineral/organic bits and pieces. After processing the lighter fraction comprised mostly amorphous organic material with some small fragments of wood, bryophyte, charcoal and the occasional grass periderms and bran. Quite a lot of fine sand but most went through the fine sieve. Occasional fragments of calcined bone in the coarser fraction. A wide range of seeds and in moderate numbers too – mixture of grassland and ruderal taxa and a little waterlogged spelt chaff. All remains waterlogged. Full analysis required.</td>
</tr>
<tr>
<td>V07B-51</td>
<td>AD213-270s. Pit fill of black/dark grey silt, cuts into natural clay below mausoleum CXXVI’s south wall. (Underlay V07B-16). Brown silty and gritty sample with a few stones. Wet sieving produced much fine sand with some coarse organic and charcoal. Charcoal a mix of small chunks of heartwood and heather shoots/leaves. Very occasional mineral encrustations and invertebrate remains. Other than quite a few nettle seeds only <em>Ranunculus sceleratus</em> achene recorded. No further action.</td>
</tr>
<tr>
<td>V07B-65</td>
<td>AD213-270s. Fill from a square-sided well immediately south of roadway B3. Dark grey silt, compacted mud and an occasional slipped stone slab from the well side. Grey brown gritty samples with some clasts and possibly wood fragments. Patchy colours with white-grey sand. Processed sample comprised clay lumps, mineral and charcoal with very occasional coal and very little organic material. This looks</td>
</tr>
</tbody>
</table>
small bits of woody material. Only two seeds seen – one nettle and one Lamium sp. No further action.

**V07B-66**

AD213-270s. Drain fill from NW-SE running stone-lined drain (same as found running past well in 2004). Silty grey sand. Gritty sample with some greasy clay lumps – yellow brown. After processing the sample comprised mineral and charcoal fragments and some other coarse organic. A few chunks of wood charcoal and very occasional pieces of coal. Few seeds were present – nettles, annual nettles, sedges and docks along with one fig pip. No further action.

**V07B-67**

c. AD100-130s. Small west-east running drainage channel linking into V07B-55. Filled with mid grey silty clay. Dark grey-brown wet silty clay and some organic material. After processing the sample comprised clay lumps, moderate numbers of wood/twigs/coarse organic debris. A little charcoal was present as were occasional mineral concretions, monocot fragments and very occasional bryophyte shoots. More or less no seeds – the occasional nettle and dock. No further action.

**V07B-75**

AD213-270s. Circular stone lined well CXLI. Just northeast of square topped well CXL. Filled with loam and occasional patches of clay and fallen side stones. Dark brown organic silt with chunks of wood twigs and gravel. After processing some clay lumps remained with mostly coarse wood and organic material – twigs, some bryophytes, charcoal, and leaf fragments. Some mineral concretions were present as discrete lumps and as a coating on charcoal and wood; very occasional comminuted bone fragments; rather few seeds – nettles in moderate numbers, Rumex acetosa, Stellaria media, Polygonum lapathifolium/Persicaria, carex sp and Viola sp. Impression is of differential preservation. No further action.

**V07B-77**

AD213-270s. Fill from well CXLII. Grey brown silty clay. Relatively small amount of fine organic debris after processing with fine silty sand largely washing through the sieves. Charred heather leaves with rather occasional shoots only. Very occasional Sphagnum leaves and Daphnia ephyppia, fly puparia and invertebrate fragment. Seeds abundant and varied taxa – grassland taxa of various type and some weeds or ruderals. Full analysis recommended.

**VIN 2008 – assessment**

Whole earth samples were taken from a variety of contexts during excavations in 2008. They were processed by the Vindolanda Trust using manual floatation to 500 microns and the flots sent to the author for assessment in the first instance.

**Area and context**

**Notes and recommendations** (Seeds all charred unless otherwise stated)

**V08B-10**

AD213-270s. Fill of a pit cut into the floor of the south part of workshop CXXVIII. 1kg sample. Small flot of cindery material and fragments of very soft silty charcoal – occasional Calluna (heather) wood, a few fragments of heartwood chunks and somewhat more gnarled twisted pieces. No seeds. No further action.

**V08B-26**

AD213-270s. Soot and burnt material on stone flagged floor inside apse of workshop CXXVII (beneath V08B-17). 1kg. Moderate flot of cindery, clinker bubbly material – not magnetic. A lot of the fragments are the general size and shape of cereal grains, but there is no evidence for epidermis, ventral groove or embryo. Very occasional fragments of industrial spatter. No charcoal per se. No seeds. No further action.
AD213-270s. Small flags and mixed clay in CXLIII. Possibly dump of waste material from V08B-26. 1kg. Moderate flot of more or less pure charcoal although very mixed material – heather wood, occasional heather shoot, monocot culm bases, very twisted stems/heartwood, very very occasional Quercus (oak), occasional evidence of woodworm and much soft friable material, some slightly silty. One trigonous Carex nutlet. No further action.

V08B-40 AD213-270s. Rake pit for large hearth in floor, V08B-29, of workshop CXLIII. Small flot of small fragments of charcoal. These were from various taxa with very occasional woodworm holes. No further action.

V08B-45 AD213+ Fill of a pit, cut into the floor of V08B-29 (just north of V08B-46). Possibly workshop floor. 4kg. Moderate flot of clinkery material, not magnetic, no charcoal. Some more of the bubbly blobs as in V08B-26. No further action.

V08B-53 AD213-270s. Material from inside a hearth on floor (V08B-29) of workshop CXLIII. Associated with the rake pit V08B-40). 1kg. Small flot of silty charcoal lumps and modern roots. No seeds. No further action.

V08B-54 c.AD130-213. Fill from a drain running along the northeast edge of floor V08B-52. 1kg. Very small flot of silty charcoal and one or two fragments of comminuted bone. One fragment of cf Triticum – npo. No further action.

AD213-270s. Sooty flooring of hearth in apse of workshop CXXVII on the flags of V08B-26 (similar to V08B15). Small flot of poorly preserved charcoal – some glassy wood charcoal, cinder, very occasional industrial spatter and burnt comminuted bone fragments. Very occasional grass stem and culm node. One piece of heather wood seen. A very small amount of waterlogged monocot fragments and one heather shoot were also recorded. Stellaria media 1, indet cereal grain 1 – both charred, neither picked out. Second bag of flot rather similar but no seeds. One bag of hammerscale from workshop floor – highly magnetic.

VIN 2009 – assessment

Whole earth samples from V09B were floated by the Vindolanda Trust using manual flotation to 500 microns and the flots sent to the author for assessment.

Area and context Notes and recommendations (Seeds all charred unless otherwise stated)

V09B-6 AD213+ Pit fill of small rectangular pit cut into waggon park / storage yard. 6 litres processed. A moderate flot of rather cindery material was produced with occasional fragments only of charcoal and bone fragments. Some of the charcoal had woodworm holes which are becoming almost the norm for Vindolanda charcoal. A few small sheets of a mineral material suggest varying water table through time. No seeds were seen and no further action required. There is no strong evidence to support the suggestion that this was a grave as the bone fragments were very small and not that abundant. No further work.

V09B-36 (top) AD205-212. Light coloured, fine grey clay in south half of outer Severan ditch. 6 litres processed. Tiny flot of essentially silty lumps. Very occasional scraps of charcoal and comminuted bone with the odd fragment of mineral concretion. No further action.
V09B-48  AD205-212. Sooty lens in the upper layers of the western extension to the Severan ditch. 6 litres processed. The flot comprised grey silty lumps with occasional wood fragments and some coarse organic material. No evidence survived of fine organic debris and no evidence of even robust seeds. Occasional charcoal fragments were recorded. No further action.

V09B-50  AD205-212. Very bottom of the main southwest corner of the Severan ditch. 6 litres processed. Sample produced a large amount of fine organic debris and some humified lumps. Occasional wood fragments were recorded and there were plenty of bryophyte stems; occasional heather leaves, small lumps and twigs of charcoal, invertebrate fragments and fly puparia were also present. A moderate range of waterlogged seeds were present representing ruderal and waste ground and some indications of grassland. Full analysis recommended.

V09B-62  c. AD130-205. Ditch fill from a north-south running Antonine annexe ditch. 6 litres processed. Flot highly organic and silty with wood and some twigs. Bryophytes present amongst the silty lumps. Occasional invertebrate remains along with heather shoots/flowers and bracken. Moderate numbers of fungal sclerotia. Occasional Daphnia ephippia. A wide range of seeds with those from Urtica dioica (stinging nettles) and Rumex longifolius (northern dock) the most abundant. One Ficus carica (fig) pip was recorded. Other taxa give indications of wetland habitats and nutrient enriched ruderal communities. There is little evidence of material being dumped into the ditch although the heather and bracken might indicate this a little. The one fig pip is hardly evidence for faecal material although does indicate that exotic fruit was available to the troops – this is a taxon surprisingly rare compared with other sites in the north, especially as at sites in Carlisle. Full analysis should be undertaken.

V09B-64  AD205-212. Lower ditch fill of extension to the main Severan ditch (below V09B-35). 6 litres processed. Moderate numbers of leather fragments – tents and shoes – also recovered from this context. Damp material and mostly waterlogged – kept wet; mostly fine humified material with occasional wood and twig fragments, occasional charcoal and occasional heather shoots and flowers and bracken frond fragments. Only very occasional epidermal fragments and invertebrate remains, occasional waterlogged spelt glume bases. Rich in seeds and wide variety of taxa – nettles, docks, sedges and so on so full analysis recommended.

V09B-65  c. AD130-205. Fill of the drain on the south side of the main road running out of the Antonine annexe’s west gate. 6 litres processed. Small flot of iron concretions and iron encrusted, crazed charcoal. Some creamish mineralised material, occasional heather wood. 1 carbonised Triticum grain – poorly preserved. No further action.

V09B-67  c. AD130-205. Drain fill for the stone lined drain running through the middle of the Antonine annexe’s west gate. 6 litres processed. A moderate sized flot of iron-orange cindery material with a little wood charcoal, also mineral impregnated/covered. Occasional fragments of coal were noted as was the very occasional fragment of calcined bone. No further action.
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*Table 1.*
VIN 2010 – assessment

Whole earth samples from the 2010 excavations were floated by the Vindolanda Trust using manual floatation to 500 microns and the flots sent to the author for assessment and analysis as appropriate. All samples were from 4 litres unless otherwise stated.

Context Notes and recommendations

V10B-22  c.AD85-c.AD130. Fill from a northwest-southeast running drainage ditch (underlies V10B-7 and V10B-21).
Highly organic with chunks of wood, twigs, fine vegetational debris, bryophytes, heather (both waterlogged and charred), occasional bracken fronds and bone fragments. Good range of seeds but with nothing especially abundant. A few arable weeds but mostly grassland to ruderal taxa (table 2).

V10B-34  AD213-270s. Fill of a small stone-lined well/water tank outside west edge of vicus building CXXIX.
Flot comprised very fine organic debris with some small fragments of charcoal. A few waterlogged seeds were present – one each of Urtica dioica, Rumex longifolius, Carex, Polygonum lapathifolium/P persicria, Ranunculus repens-type and Carex ovalis-type. No further action.

V10B-42  c.AD130-205. Flooring of a timber building, immediately east of fork in the post-Roman stone drain.
Wet sieved (500 microns) the 4 litre whole earth sample. Waterlogged materials comprising occasional wood and heather shoots but mostly bryophytes. Some epidermal fragments, fly puparia and miscellaneous stem material. Heather seeds were especially abundant with some sedges, nettles, self heal, buttercup and bilberry seeds also recorded. One fragment of 13 year old, 22cm diameter hazel charcoal was present. It seems that the material largely represents heather moorland and it would be worth attempting identification of some of the bryophytes to confirm this.

V10B-43  c.AD105-120. Slightly decomposed sooty laminate with timber posts, underlying V10B-17.
Some twigs and wood, both waterlogged and charred, in an essentially fine organic debris and moss flot; occasional bracken and heather shoots/flowers and a few legume flowers. Occasional charred heather shoots recorded. Other than sedges, which are moderately abundant, other taxa are varied but occur only in low numbers. They mostly suggest grassland habitats with a very small ruderal component. It would be worth full analysis to establish the nature of the grassland and whether hay or bedding was present.

V10B-51  c.AD100-130. Floor of wattle walled timber building directly below V10B-29.
Although another predominantly fine organic material with stems/roots abundant cereal straw, wood and twigs fragments and occasional fly puparia are also present. Occasional Sphagnum shoots were recorded. Seeds were abundant and varied although the rather typical sedges were dominant. As with other samples from this area of excavation there are strong suggestions of grassland communities and, as elsewhere, full analysis is recommended to try to tease these out further.

V10B-59  c.AD130-205. Earth and grass roots on top of fired sandstone flags from a small hearth, possibly associated with timber building V10B-37.
Mostly very fine vegetation – roots and stems with occasional twigs and small fragments of charcoal. Moderate numbers of nettle seeds (Urtica dioica) indicate nutrient enrichment but otherwise the few seeds recorded are varied in habitat. Besides the nettles, 1 Rubus fruticosus, 1 Raphanus raphanistrum seed and 2 Carex nutlets were present. All waterlogged seeds. No further action. No evidence that this was a hearth in fact.
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<th>V10B-34</th>
<th>V10B-42</th>
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*Table 2.*
Area B lies to the west of the main fort although includes part of the Antonine ditches. Buildings seem to reflect working areas rather than habitation but may have included both. Samples from ditch fills and hearths were generally poor in seeds or charcoal leaving little for interpretation. Samples from floors within buildings are generally richer and have a variety of waterlogged taxa present. Whilst there is clearly some dumping of, for example, bedding – bracken fronds – there is a strong element of grassland in several samples and full analysis may help determine whether this is from hay. The samples, on the face of it, have strong links to some from inside the fort where the so-called ‘carpets’ of laminated organic material accumulated to considerable depths at times.
A total of 8 samples of oak timbers from excavations at Vindolanda Roman Fort, Northumberland (sitecode V07B, NGR c. NY 770 663) were sampled for dendrochronological analysis. 6 samples were successfully dated, 5 comprise exclusively heartwood, but the survival of bark edge on 1 provides a date for this timber of late AD97.

**Methodology**

A number of large waterlogged timbers excavated on the Vindolanda Fort site during 2007 were sampled by chainsaw. Each sample comprised a complete cross-section taken at the optimal location for sapwood or the presence of outermost rings. After sampling each sample was assessed for the wood type, the number of rings it contained, and whether the sequence of ring widths could be reliably resolved. For successful dendrochronological analysis samples need to be oak (*Quercus* spp.), to contain 50 or more annual rings, and the sequence needs to be free of aberrant anatomical features such as those caused by physical damage to the tree whilst it was still alive. The samples that were collected were all oaks. Standard dendrochronological analysis methods (see e.g. English Heritage 1998) were then applied to each of the suitable samples. The sequence of ring widths in each sample were revealed by preparing a surface equivalent to the original horizontal plane of the parent tree with a variety of bladed tools. The width of each successive annual growth ring was revealed by this preparation method. The complete sequence of the annual growth rings in the suitable samples were then measured to an accuracy of 0.01mm using a micro-computer based travelling stage. The sequence of ring widths were then plotted onto semi-log graph paper to enable visual comparisons to be made between sequences. In addition cross-correlation algorithms (e.g. Baillie & Pilcher 1973) were employed to search for positions where the ring sequences were highly correlated (Tyers 2004). Highly correlated positions were checked using the graphs and, if any of these were satisfactory, new composite sequences were constructed from the synchronised sequences. Any *t* values reported below were derived from the original CROS algorithm (Baillie & Pilcher 1973). A *t* value of 3.5 or over is usually indicative of a good match, although this is with the proviso that high *t* values at the same relative or absolute position needs to have been obtained from a range of independent sequences, and that these positions were supported by satisfactory visual matching.

Tables 4 & 5 list examples of the best matches for the composite data series, and an individual series from this site against references series. These tables are intended to show that there is independent corroboration for the dating given here, the data matches many other reference series.

**Results and Discussion**

The material comprised 8 oak samples. The samples were from timbers associated with a building or structure to the west of the fort, a number of other timbers from the same structure were not selected for sampling as they contained fewer rings, and lacked any evidence for sapwood. The details of the separate samples are provided in Table 1.

All 8 of the samples were suitable for analysis. The material contained somewhat variable numbers of annual rings, with some of them containing remarkably few for their size. 5 of these were found to cross-match, both with each other (Table 2), and with pre-existing reference sequences (Table 3). A composite sequence was mathematically constructed from these matched series at their synchronised positions. This composite was compared with reference data from throughout England and northern Europe. A number of statistically significant matches were obtained between the sequence and reference series indicating the sequence dates from 338BC-1BC inclusive (Table 4). Sample E1 cross-matched other Vindolanda and Carlisle material but had such a short ring sequence that it did not overlap with the other 5 samples from this group, and hence could not be added to the group composite sequence. Dating evidence for E1 is given in Table 5. Table 1 lists the dates of the individual series, and their calculated interpreted dates, and Figure 1 shows the date spans of the individual sequences, and their calculated interpreted dates.
Sample E1 retained bark edge, whilst the rest of this material consisted entirely of heartwood. A felling date could be directly obtained from E1, the addition of an allowance for minimum missing sapwood to the other 5 suggests they do not provide any useful dating information. From an archaeological perspective however since the 2 cross-braces from A7 were derived from a single tree, and this is the same pattern observed at A5 last year, this at least suggests that this usage represents the specified or simplest way of constructing the bracing structures. None of the 6 newly dated samples represent parts of the same trees previously analysed from the site, even those from elsewhere on these post alignments. Although this is not clear evidence it may suggest this is quite a large structure utilising a large number of trees since multiple parts of a single tree would be expected to be distributed around the structure if it was on a relatively small scale. The dating obtained from the 5 samples in the composite series clearly indicates that they represent inner parts of extremely old trees. The undated samples are from 2 faster grown trees, which may reflect exploitation of different parts of the Vindolanda landscape for this particular structure, or may indicate this is a later phase of activity utilising re-grown woodland.

Sample E1 felled in AD97 is of some interpretative significance since it was felled at exactly the same time as the period III pipeline analysed previously (which had pipe blocks felled in late AD97). Similarly E1 is presumably from a different phase of activity than A5A which did not retain bark edge but was estimated to have been felled between AD101 & AD112. This might suggest that the A & E alignments are not the same structure, and possibly implies that the multiple alignments of posts in this area represent successive builds of a linear feature related to water supply. Justin Blake has discussed with me the possibility that these could be the footings for a series of aqueducts, and both these strands of evidence are perhaps supportive of that suggestion.

This group of timbers from Vindolanda has yielded in composite another replicated sequence derived from oaks more than 400 years old when exploited. The group has not extended the Vindolanda sequence in length but has further strengthened it, the composite sequence thus remains of 524 years extent, but now consists of 65 separate dated samples.

**References**


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Tyers, I., 2006 Tree-ring spot dates from archaeological samples: Vindolanda Roman Fort, Northumberland, ARCUS Rep, 950d


Acknowledgements

The spot-dating of this material was funded by the Vindolanda Trust. Justin Blake kindly provided discussion and practical assistance.
Vindolanda Research. The excavations of 2007-2012 in the vicus or extramural settlement (‘Area B’)

Vindolanda 2007 excavation

Figure 1. Bar diagram showing the calendar positions of the measured and dated tree-ring sequences from the Vindolanda 2007 excavations.
KEY: White segments of bars are heartwood. Hatched segments are sapwood. Narrow segments, unmeasured rings.

Table 1. Details of the oak samples from the Vindolanda 2007, site V07B.
KEY: Bw indicates bark-edge with a complete or almost complete growth ring indicating late summer or winter felling, the values in italics indicate the estimated numbers of unmeasured rings at the start or end of two of the measured sequences.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Size (mm)</th>
<th>Rings</th>
<th>Sap &amp; Bark</th>
<th>Date of measured sequence</th>
<th>Interpreted result</th>
</tr>
</thead>
<tbody>
<tr>
<td>A6</td>
<td>570 x 300</td>
<td>251</td>
<td>-</td>
<td>261BC-11BC</td>
<td>after 1BC</td>
</tr>
<tr>
<td>A7</td>
<td>490 x 350</td>
<td>116</td>
<td>-</td>
<td>214BC-99BC</td>
<td>after 89BC</td>
</tr>
<tr>
<td>A7 cross-brace 3</td>
<td>260 x 200</td>
<td>273</td>
<td>-</td>
<td>273BC-1BC</td>
<td>after AD10</td>
</tr>
<tr>
<td>A7 cross-brace 4</td>
<td>240 x 220</td>
<td>270</td>
<td>-</td>
<td>277BC-8BC</td>
<td>after AD3</td>
</tr>
<tr>
<td>B26</td>
<td>335 x 290</td>
<td>59</td>
<td>10</td>
<td>undated</td>
<td></td>
</tr>
<tr>
<td>B27</td>
<td>520 x 390</td>
<td>30+332</td>
<td>-</td>
<td>338BC-7BC</td>
<td>after AD4</td>
</tr>
<tr>
<td>E1</td>
<td>215 x 180</td>
<td>94</td>
<td>28+Bw</td>
<td>AD4-AD97</td>
<td>AD97 winter</td>
</tr>
<tr>
<td>E6</td>
<td>230 x 190</td>
<td>81</td>
<td>19+2</td>
<td>undated</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Showing t values (Baillie & Pilcher 1973) between the individual series from the Vindolanda 2007 site V07B. These series were combined into the composite sequence used in Table 4.
KEY: indicates t values less than 3.0, bold indicates these series were derived from a single tree. cb = cross-brace
### Table 3. Showing t values (Baillie & Pilcher 1973) between the early individual series from the Vindolanda 2007 site V07B and the reference series from Table 4.

**KEY:** cb; cross-brace

<table>
<thead>
<tr>
<th>Series</th>
<th>A6</th>
<th>A7</th>
<th>A7cb3</th>
<th>A7cb4</th>
<th>B27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vindolanda1</td>
<td>9.27</td>
<td>6.76</td>
<td>9.44</td>
<td>11.35</td>
<td>5.59</td>
</tr>
<tr>
<td>Vindolanda2</td>
<td>8.71</td>
<td>6.54</td>
<td>9.99</td>
<td>11.11</td>
<td>5.20</td>
</tr>
<tr>
<td>Vindolanda3</td>
<td>9.68</td>
<td>6.17</td>
<td>6.86</td>
<td>8.12</td>
<td>6.41</td>
</tr>
<tr>
<td>Annetwell</td>
<td>8.30</td>
<td>6.47</td>
<td>7.09</td>
<td>8.62</td>
<td>5.07</td>
</tr>
<tr>
<td>Millennium</td>
<td>10.38</td>
<td>6.47</td>
<td>7.96</td>
<td>9.72</td>
<td>7.09</td>
</tr>
<tr>
<td>Lanes South</td>
<td>6.74</td>
<td>5.54</td>
<td>7.53</td>
<td>8.21</td>
<td>7.79</td>
</tr>
<tr>
<td>Lanes North</td>
<td>9.60</td>
<td>7.38</td>
<td>8.04</td>
<td>8.78</td>
<td>6.57</td>
</tr>
</tbody>
</table>

### Table 4. Showing t values (Baillie & Pilcher 1973) between the composite sequence from the Vindolanda 2007 excavations and contemporaneous reference data.

**KEY:** cb; cross-brace

<table>
<thead>
<tr>
<th>Series</th>
<th>t values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vindolanda 4 (2007 site V07B); 5 timbers; 338BC-1BC</td>
<td></td>
</tr>
<tr>
<td>Cumbria, Carlisle Annetwell Street A (Groves 1990)</td>
<td>10.10</td>
</tr>
<tr>
<td>Cumbria, Carlisle Millennium (Tyers and Groves forthcoming)</td>
<td>11.42</td>
</tr>
<tr>
<td>Cumbria, Carlisle The Lanes north (Groves 1996)</td>
<td>9.51</td>
</tr>
<tr>
<td>Cumbria, Carlisle The Lanes south (Groves 1993)</td>
<td>9.66</td>
</tr>
<tr>
<td>Northumberland, Vindolanda 1990/91 excavations (Hillam 1993)</td>
<td>8.53</td>
</tr>
<tr>
<td>Northumberland, Vindolanda 2, excavations up to 2005 (Tyers 2006)</td>
<td>9.06</td>
</tr>
<tr>
<td>Northumberland, Vindolanda 3, 2006 excavations (Tyers 2007)</td>
<td>8.55</td>
</tr>
</tbody>
</table>

### Table 5. Showing t values (Baillie & Pilcher 1973) between the series E1 from the Vindolanda 2007 site V07B and the reference series.

<table>
<thead>
<tr>
<th>Series</th>
<th>t values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vindolanda V07B E1; AD4-AD97</td>
<td></td>
</tr>
<tr>
<td>Cheshire, Nantwich (Laxton &amp; Litton pers comm.)</td>
<td>3.84</td>
</tr>
<tr>
<td>Cumbria, Carlisle Annetwell Street A (Groves 1990)</td>
<td>4.28</td>
</tr>
<tr>
<td>Cumbria, Carlisle Millennium (Tyers and Groves forthcoming)</td>
<td>3.59</td>
</tr>
<tr>
<td>Northumberland, Vindolanda 1990/91 excavations (Hillam 1993)</td>
<td>4.94</td>
</tr>
<tr>
<td>Northumberland, Vindolanda B2 (Tyers 2007)</td>
<td>5.27</td>
</tr>
<tr>
<td>Northumberland, Vindolanda W127a (Tyers 2006)</td>
<td>4.52</td>
</tr>
<tr>
<td>Warwickshire Lloyds Bank site Alcester (Groves 1987)</td>
<td>3.72</td>
</tr>
</tbody>
</table>
2007 Area B Contexts and small finds

V07B-1  U/S
Loosely packed rubble at far south of excavation area – Dumper track from 1970s. Unstratified.

V07B-2  AD105-130s
Industrial floor surface at the far northeast of the excavation area – mixed clay/loam, fragments of mortar and some slag.
C718  dupondius of Hadrian (AD117-138)
C801  denarius of Hadrian (AD117-138)
10766  fragment of lead
10767  disc brooch (complete)
10768  spherical blue glass bead
10769  copper-alloy stud (enamelled)
10775  graffito on samian Dr18/31 BA[-]
10792  2 large fragments of lead
10866  fragment of lead
10870  samian stamp of Cinnamus ii (AD135-180)
10871  fragment of lead

B 07 2: 19 frags Dressel 20 (not retained); 2 frags of a black cheese press (to SFs); 3 frags brick and tegulae (not retained); mortaria – 2 frag rims from 2 bowls (1 x fawn, 1 x pink); castor – 7 frags from 2 bowls; glass – 11 frags, including bottle; samian (all very worn) 16 Dr 37s and frags of Dr 18/31, 1 x Dr 27 and a foot-stand from a 72. 31 frag coarse rims – mainly jars, black/grey and probably residual. Frag cream jug.

V07B-3  AD213-270s
Post pad associated with floor of V07B-2. Small stones set in a circle with some slag and iron pan.

V07B-4  AD213-270s
Floor of vicus structure CXXVI. Mixed loam, with charcoal inclusions and some orange mortar.
10770  fragment of lead

B 07 4: Misc batch of residual frags, inc. 2 glass, 8 v small rim frags of coarse (all different), and 18 small samian frags.

V07B-5  AD213-270s
Cobbled surface outside the east side of vicus structure CXXVI. River washed stones set into thick grey clay. Some evidence of burning on the surface.

10771  flint flake

B 07 5: 1 x double handled grey/black flagon (not in Gillam); 3 small misc rim frags coarse, with part neck of a large fawn flagon; one frag glass and 15 misc small samian frags.

V07B-6  AD213+
Mixed loam and occasional patches of burning 46cm under turf in the far northwest of the excavation area.
C780  second-century As/dupondius, possibly Antoninus Pius (AD138-161)
10772  green glass bead
10774  fragment of lead
10843  rear ¾ of a pottery oil lamp

B 07 6: 3 x slag, 6 x glass (inc. part base of bottle); 5 frags roughcast type castor beaker (Gillam 72 – Vindo 80-1340); 14 tiny frags residual samian; 1 x single-handled pale cream flagon; 2 small frags mortaria – both pink but different bowls; 10 small misc coarse rims.

V07B-7  c.AD100-130s
Demolition/collapse immediately outside northeast of vicus structure CXXVI. Sooty loam.
c804  illegible first/second-century As
10777  copper-alloy stud
10778  samian spindle whorl
10805  mortarium stamp of Coertinus (AD140-200)
10867  fragment of lead
10868  mortarium stamp of Anaus (AD120-160)
10875  samian stamp Birrantus i (AD110-140)
10879  ¾ of a large lead disc
10880  white glass gaming counter
10881  circular fragment of lead
10883  faience melon bead
10885  fragment of lead
10887  copper-alloy brooch
10888  fragment of lead

B 07 7: 8 x castor; 13 x glass; 38 x samian – small, worn and residual, but includes a Dr 30; 3 frags slag (but not from iron working – ? lead); 1 frag native style coarse brownish bodysherd; 4 mortaria
frags – 3 different rims, from plain curved to hammerhead; top of fawn single-handled flagon and frags of 2 more; very strange amphora handles, retained for examination by Elise M; 40 misc coarse rims – few matching and little BB1, with c.8 bases.

**V07B-8**  
AD213+  
Ditch silt in northern part of excavated area, possibly from same aqueduct as excavated in 2005. Silty grey clay with the occasional fallen building stone.  
10779 altar (uninscribed)  
10785 samian stamp of Cariatius (AD80-110)

B 07: 8 Frag of barbotine pot (but not burnished); samian – 2 x 37s, 1 x 27, 3 worn misc; 3 frags small fawn bowl; 1 frag glass; 1 frag dark grey lid; 9 small frag rims – no BB1, with 2 rim frags from large fawn bowl.

**V07B-9**  
AD213+  
Tightly packed cobbled road surface flanked by three channel stones on its northwest edge.

B 07: 9: 2 frags samian – one a Dr 30, the other probably a 27; 1 small rim frag of a pinkish bowl with white slip; remainder all frags of a Dressel 20 – pale cream exterior but red inside.

**V07B-10**  
c.AD120-130s  
Burnt sooty loam, immediately north of the cobbles of V07B-9.  
C720 As of Claudius I (AD41-54)

B 07: 10: 5 frags worn samian, including 2 x 37s (same bowl); 1 x castor; 1 x part top of cream flagon; 1 x unusual black glass; 17 vv small coarse rim frags – one possibly a BB1.

**V07B-11**  
c.AD165-205  
Decayed orange mortar, soot and occasional fallen stone immediately SW of mausoleum.  
C732 disintegrated minim  
10782 copper-alloy pin  
10788 mortarium stamp (illiterate)  
10790 fragment of lead  
10804 graffito on amphora sherd  
10807 mortarium stamp of Anaus (AD120-160)

B 07: 11: samian – 8 x 37s, 1 x 27, 9 x 18/31; 1 x glass; 1 x castor; 1 x grey lid; 1 x ring-neck flagon; 2 x bases of pink/brown bowls; 1 x degraded mortarium; 1 x lead slag; 6 small coarse rim frags with 5 bases; 2 frags Dressel 20s; 1 x imbrex frag; 1 x tegula frag; 1 x frag circular stone lid (to SFs).

**V07B-12**  
c.AD100-c120s  
Loose grey silt and several building stones in the northern half of, but earlier than, *vicus* structure CXXVI.

C719 As of Trajan (AD112-114)  
C721 As of Domitian (AD87)  
C722 As of Hadrian (AD117-138)  
C723 illegible first/second-century As  
C724 dupondius, possibly of Domitian (AD81-96)  
C725 illegible Flavian As (AD69-96)

B 07: 12 – no pottery, etc.

**V07B-13**  
c.AD105-130  
Rich red, brown loam and some decomposed mortar immediately west of roadway of V07B-9.  
10776 dragonesque brooch

B 07: 13: 3 small frags Dressel 20; 1 x body-sherd fawn mortarium; 1 x handle fawn jug; 3 x small glass frags; 3 x small castor frags; 10 insignificant frags samian, with a Dr 18/31 rim with 2 holes drilled trough it; 22 coarse rims of bowls, mostly tiny frags, with 2 frags of black cooking pots; 1 x rim of fawn bowl.

**V07B-14**  
AD97-c.120  
Post pit fill for a set of 4 large posts. (one of which was felled in winter AD97 – dendrochronology)  
Thick mixed clay, mainly grey with some stones set on edge.

C726 dupondius of Domitian (AD81-96)  
("found in post pit")

B 07: 14: Glass – frags of a fine glass bowl (being reconstructed); half rim of a Dressel 20; 3 frags samian (1 x early 37), 5 rims coarse, all different – 4 grey and 1 fawn.

**V07B-15**  
U/S  
Disturbed layer of rubble immediately north of road V07B-9. Loose loam, some burning and many large building stones, including channel stones and a coping stone.

10783 fragment of lead

B 07: 15: (disturbed area) – nothing modern.
1 x castor; 6 x small Dressel 20 frags; 11 very worn small samian frags; 2 x slag; 1 x part neck of cream flagon; 11 small coarse black rims.

V07B-16  AD213+
Pit. Heavily burnt sooty soil with some bright orange mortar at the base. Overlying and cutting the southwest wall and floor of mausoleum/shrine CXXVI.
10780 fragment of lead

V07B-17  c.AD90-c.130s
Top of northeast-southwest running ditch, southeast of mausoleum/shrine CXXVI. Loose sooty soil and some grey clay with small stones. Same as V07B-57.
10781 fragment of lead
L07B-1 shoe sole

B 07 16: Frag stone lid – see B 11 for another – added to SFs; 1 x Dressel 20 body sherd; 8 misc coarse body sherds; 1 x slag.

V07B-18  AD105-130s
Small pit cut into the floor of V07B-2. Dark loam with some soot and industrial waste.

B 07 18: 2 small frags glass; 1 x 2 handled cream flagon; 12 small frags samian (not early); 8 frags of castor roughcast pot; 3 frags imbrex; 3 frags Dressel 20 and 2 frags non Dressel; frags 3 early mortaria; one frag bodysherd with handled and moulded ring at bottom; 12 assorted coarse rims – no BB1 – and frags of a black cooking pot. [Looks like first half of the C2.]

V07B-19  c.AD100-c.130s
Top of aqueduct/ditch running north of mausoleum/shrine CXXVI. Loose grey silt and some fallen stone.
10784 fragment of lead
10786 fragment of lead
10787 fragment of lead
10794 fragment of lead
10835 large fragment of lead

B 07 19: Bulk of a castor roughcast in 20 pieces and 8 frags of a plainer example; 10 small misc. frags samian; 4 frags brick/imbrex; 1 body-sherd Dressel 20, plus a complete neck and a handle of another; 20 small coarse rims – cooking pots BB1 and bowls, with one frag grey/black lid.

V07B-20  c.AD100-c.130s
Lower part of the same aqueduct/ditch fill as V07B-19. Soft grey silt, some organic material and an occasional fallen stone.
C805 illegible first/second-century As
10873 graffito on amphora rim

B 07 20: 1 x frag neck of 2 handled black flagon (being re-assembled); 17 frags castor (roughcast type); 3 small glass; 1 x brick; 2 x small samian; 5 black coarse rims; 3 very small frags of reddish mortaria rims; 1 frag grey lid; Dressel 20 frags, with 2 handles.

V07B-21  pre-AD140
Ditch fill from ditch running northeast-southwest down the east side of mausoleum/shrine CXXVI. Silty grey clay and many loosely packed undressed river boulders.
10789 mortarium stamp of Austinus (Hadrianic/Antonine)
10802 mortarium stamp of Sullon(us,-ius,-iacus) (AD100-140)

B 07 21: 5 frags Dressel 20, with one handle; 1 frag imbrex; 1 neck single-handled cream jug; 8 frags samian (1 x 37, 1 x 30); 2 frags small fawn pot; 2 grey rims and 2 frags glass.

V07B-22  c.AD140s+
Lense of clay overlying V07B-10 and just west of the 3 channel stones flanking roadway V07B-9.

B 07 22: NB – frag of modern bottle glass.
2 x Dressel 20; 1 small glass; 1 x castor roughcast; 4 x small samian (3 37s); 11 very small coarse rims – no BB1, and mainly grey.

V07B-23  c.AD120-140s
C733 sestertius of Trajan AD103-111
10793 ½ blue glass melon bead

B 07 23: no pottery, etc.

V07B-24  c.AD120-140s
Large area of re-deposited flooring material. Underlying the channel stones that flanked the
road of V07B-9. Similar to V07B-10 and below V07B-22. Sooty soil with large amounts of iron pan with occasional lenses of orange mortar.

10791 samian stamp and graffito (illegible)
10796 black glass gaming counter
10801 black glass gaming counter
10813 fragment of lead

B 07 24: 11 frags glass; 23 samian (including 1 x 36); castor – 6 frags; tegulae 6 frags; 27 frags Dressel 20, inc. rim and 2 handle frags; 1 x pastry crust grey rim; 2 x mortaria (1 x pink, 1 x cream; 29 coarse rims, mostly bowls and very small; 1 x cream flagon rim.

V07B-25 c. AD120-140s
Circular pit cut into V07B-24. Heavily burnt clay with ironstones and whinstone boulders in the fill.

B 07 25: 4 x brick frags; 2 x Dressel 20 frags; 4 x small black rims and 1 x fawn rim; 1 frag bottle top.

V07B-26 AD213-270s
Roadway/yard surrounding the south side of the mausoleum/shrine CXXVI. Hard packed mixed clay overlying a cobbled and, in places, flagged base.

B 07 26: 1 x half neck of Dressel 20 and 2 x frags; 1 x early grey mortarium rim and 1 x body part of pink, with white slip; samian – 6 x 37s and 1 x 36; glass x 1; pink jar in 7 frags, with 2 bases of pinkish fawn; 5 coarse rims, and 1 x rustic ware.

V07B-27 c. AD130s-c.213
Hearth material from southeast of mausoleum/shrine CXXVI. Soft, rich red clay and decomposed mortar. Above ditch of V07B-17.

10795 amphora stamp L( ) Q( ) S( ) C(anania?) (c. AD150-c.175)
10799 mortarium stamp O(fficina) Sen(us,-ius) (AD140-200)

B 07 27: 1 x imbrex; 1 x handle grey flagon; 1 x samian? 18/51; 2 rims of BB1 bowl; 1 rim of grey/black pot; 4 body sherds of fawn jug.

V07B-28 c. AD120-140s

B 07 28: 7 frags Dressel 20; 1 x mortarium and base of another – dirty cream; 3 rims coarse – 2 grey and 1 black; 1 small frag glass.

V07B-29 c. AD100-130s
Channel fill running east-west, immediately above the natural clay and just south of large wooden posts. Turns south before reaching mausoleum/shrine CXXVI.

10797 fragment of copper-alloy
10798 fragment of lead

B 07 29: 1 frag pink mortarium; 2 rims of 2 black bowls; 1 rim of grey bowl; 1 unusual fawn vessel – ? cup; 3 small and useless samian frags.

V07B-30 c. AD100-130s
Bottom of the same channel fill as V07B-29. Silt and sand immediately on top of natural clay.

10800 ½ faience melon bead

B 07 30: 4 frags Dressel 20; 4 different frags mortaria; 1 handle of large fawn jug; 1 handle of small reddish jug; 1 frag castor (roughcast); 4 x misc samian (inc. 1 x 36); 4 small black coarse rims.

V07B-31 c.s AD130s-c213
Top part of hearth of V07B-27. Orange clay, above V07B-27.

B 07 31: 3 frags dark grey platter, and 1 frag 18/31R samian.

V07B-32 AD213+

B 07 32: 1 frag Dressel 20; 2 castor frags from 2 bowls – one roughcast; 1 x dark grey pot rim; 2 x dark grey dishes.

V07B-33 c.AD120-140s

B 07 33: 2 Dressel 20 frags and small frags BB pot; 2 frags rims of 2 mortaria – one pink with white slip and one fawn; 1 rim grey jar; 1 tiny frag samian (plain).
V07B-34  c.AD90-c.130s
Pit fill. Silty grey clay with some organic material. Cutting into V07B-17.

B 07 34: Base of a dark cream jar; 1 tiny frag plain samian.

V07B-35  U/S
Disturbed nineteenth-century soils covering areas southwest of mausoleum/shrine CXXVI.

B 07 35: One handle of grey pot; 2 mortaria frags – one cream, the other pink; 1 frag glass; 1 small frag of samian 37.

V07B-36  c.AD120-130s
Intact flooring to the south, but earlier than roadway V07B-9. Black sooty soil with substantial amount of iron pan.

c750  *denarius* of Marc Antony (32-31BC)  10809  fragment of lead  10811  strap end  10838  amphora stamp Sa(exit) Anni R(ufi,-ifiini) (ex figlinis) Gr(umensibus ?) (mid second-century AD)  10839  2 fragments of ? head pot decoration  10842  samian stamp Carantus i (AD65-95)  10847  mortarium stamp of Docilis 3 (AD110-160)  10886  samian stamp of Marcellinus (AD130-160)  10808  fragment of lead  10877  fragment of lead

B 07 36: samian – several frags of a 27 and 11 frags of 37s and 8 of 18/31s; 8 frags bottle glass; 2 frags castor from different bowls; mortaria – much of an early pink bowl and 2 frags cream and one grey with pink core; frags of a fawn/pink flagon neck and handle; 37 rim frags coarse – mainly grey, but as few BB1; 1 frag grey/black rim; 12 frags Dressel 20.

V07B-37  AD140s+
Silty grey clay covering north-south running stone lined drain.

c749  *denarius* of Antoninus Pius (AD140-143)  10832  frag Dea Nutrix statuette  10833  fragment of lead  10834  samian gaming counter  10845  *graffito* on amphora  10846  *graffito* on ? ring necked flagon

B 07 37: 10 frags Dressel 20; 2 small but different mortaria; 1 frag bottle glass; 5 warn samian frags; 8 very small rim frags, mainly grey/black. 1 very unusual thin fawn vessel in 8 pieces – being reassembled for special collection.

V07B-38  AD213-270s
Later industrial flooring in eastern extension to excavated area, immediately east of CXXVI. Mixed clay and orange burnt material.

B 07 38: 9 x Dressel 20; 1 x imbrex; samian – 12 worn 37 frags and 9 miscellaneous v small plain; 1 x castor; 3 v small glass; 3 small rims of black bowl and 1 grey rim; 1 very worn red mortarium rim and 1 large frag of grey jug top.

V07B-39  AD213-270s
Clay packing under V07B-38 and above V07B-43 and V07B-44. Thick grey clay with no inclusions.

B 07 39: samian – 1 x 18R and 1 very small 37; castor x 3 frags; mortarium x 1 rim of grey vessel; coarse – 4 frags of BB1 cooking pot and 6 other black rims, with 3 grey rims and 1 fawn rim.

V07B-40  AD213+
Mixed silty grey clay above the water course of V07B-29.

B 07 40: 2 frags handles from different Dressel 20’s and 2 body frags; 1 large handle of cream jug; 2 frags glass; 6 small samian frags (2 x 37s); 4 very small rims of black wares and 1 black lid frag; 1 pink early mortarium frag.

V07B-41  AD213-270s
Collapse/demolition of a northeast-southwest running stone wall immediately southeast of 2004 well CXLI.

B 07 41: 1 x glass from bottle; 1 x 37 samian, with hole drilled through it; 1 x very small castor; 1 x pale fawn mortarium body; 1 x neck of cream jug; 2 x grey rims and 2 x fawn rims.

V07B-42  c.AD120-130s
Fawn coloured packing clay under floor of V07B-36. Set onto cobbles and sand.

c754  *dupondius* of Trajan (AD103-111)  10812  oyster pick/medical instrument  10821  decorated glass  10822  copper-alloy brooch pin
B 07 42: (all very small frags): 1 x Dressel 20 body sherd; 4 x castor; 4 x samian (inc. a possible Ritterling 13); 1 pinkish lid frag; 10 black rims and 1 grey neck of a jug.

**V07B-43** c. AD 90-130s
Top of ditch running northeast-southwest, same as V07B-17. Mixed grey silty clay and several dressed stones.

B 07 43: 2 x samian (18/312s); 1 x grey lid frag; 4 grey/black rims and 1 x BB1 rim.

**V07B-44** AD 213-270s
Cobbles under clay packing of V07B-39.

B 07 44: samian x 3 frags (inc. 1 xc 27); 2 x castor; 5 frags of a dark grey lid; 6 small grey lids; 22 frags of a rusty red dish with 2 handles – retain for special collection – unique at Vindolanda so far.

**V07B-45** c. AD 100-130s
Ditch fill of same ditch as V07B-19 & V07B-20 but now running northeast-southwest.
Silty grey clay and some organic material in bottom few centimetres.

10810 intaglio

B 07 45: 3 x Dressel 20, inc. 1 handle; 1 neck pale fawn jug; 2 tiny scraps samian; 2 tiny scraps castor; 1 scrap of grey lid; 3 frags rim and many body frags of a black cooking pot (not BB) and 1 grey rim.

**V07B-46** c. AD 100-130s
Ditch fill running northeast-southwest through the main eastern part of the excavation. (Same as V07B-45.) Cut into natural orange clay. Heavily organic and anaerobic.

10814 flint flake
10815 flint flake
10816 ½ faience melon bead
10817 fragment of lead
10844 Titulus Pictus
10850 copper plug/die
10893 flint flake
L07B-2 shoe sole
L07B-3 tent panel
L07B-4 shoe
L07B-5 scrap
W07B-1 handle
T07B-1 stylus

B 07 46: Note – a very unusual and interesting group – not all that early, but probably first half of the second century. -23 frags amphora, not all Dressel 20; 3 frags glass; 1 x fawn handle; 1 x grey lid; 1 x neck of fawn jug; 1 x body sherd mortarium (cream/fawn); frag shallow cream bowl and 1 x rim of cream vessel, and 3 more pink/cream rims; 1 x castor rim; 10 small grey rims; 18 small frags of a brown bowl; samian – 9 x 37s, 1 x 27, 2 x 36s, 1 x Ludowici Tg and miscellaneous scraps.

**V07B-47** c. AD 101-130s
Occupation surface immediately southeast of 2004 well CXLI. Mixed clay and several fallen dressed stones. Pre-dates the stone wall there, but likely to be of relatively late date.
c756 As of Vespasian (AD 69-79)
c757 dupondius of Domitian (AD 80-81)
10818 glass gaming counter
10819 fragment of lead
10825 ceramic gaming counter

B 07 47: 3 small Dressel 20 frags; 4 worn frags of grey/pink & cream mortaria; 15 v v worn samian frags; 2 x glass frags; 1 x frag castor box; 26 v small misc coarse rims, including a Gillam 313 (Carrawburgh AD 190-240).

**V07B-48** U/S
Mixed soils of a likely nineteenth/twentieth-century robber trench located 5m to west of V07B-9. Included several channel stones.

B 07 48: 2 x Dressel 20; 1 x grey single-handled jug neck; 7 x degraded samian; 1 x glass; 8 grey rims and 1 black rim.

**V07B-49** c. AD 105-130s
Floor packing for timber ? workshop, east of mausoleum/shrine CXXVI. Mixed orange clay under cobbles of V07B-44.

10882 ½ faience melon bead

B 07 49: 3 x samian (inc. rim of a 35); 1 v small grey rim.

**V07B-50** c. AD 105-130s
Floor level of ? Period IV/V workshop. Silty grey clay.

B 07 50: 1 x dark grey lid frag,
V07B-51  AD213-270s
Pit fill of black/dark grey silt cutting into natural clay below mausoleum/shrine CXXVI's south wall (Underlay V07B-16).

B 07 51: 1 x Dressel 20 graffiti – to SF; 1 x Dressel 20 frag; rim and body sherds of pink cooking pot.

V07B-52  c.AD100-c120s
Post pit for a large timber building under the floor of mausoleum/shrine CXXVI. Hard, thick mixed clay surrounding two substantial posts. Directly under V07B-12.

c759  As of Trajan (AD103-111)

B 07 52 – no pottery, etc.

V07B-53  c.AD120-130s
Cobbled road surface, immediately east of V07B-37 and adjacent to V07B-42.

10824  fragment of a tile gaming board

B 07 53: 12 frags Dressel 20; 1 x imbrex; 12 worn samian frags; 2 mortaria frags from different bowls – one cream and one pale pink; 3 x glass frags; 13 small coarse rims, mainly grey (no BB); 1 frag handle of cream jug/flagon.

V07B-54  AD213+
Drain fill of stone lined drain running north-south through the central part of excavated area.

B 07 54: 1 x spout of pale cream mortarium; 3 frags of pale fawn bowl; 3 frags samian (inc. 1 x 27).

V07B-55  c.AD100-130s
Ditch fill of a north-south running ditch, underneath stone drain of V07B-54. Light grey sandy silt. Some organic material in the bottom few centimetres.

10828  black glass gaming counter
10829  shale gaming counter
10830  samian stamp MA[-]
10853  black glass gaming counter
10856  whetstone
10859  amphora stamp [-]mius [F(ecit)]?

B 07 55: 5 small samian frags; 3 Dressel 20 frags; 9 small black rims of dishes.

V07B-56  c.AD100-130s
Ditch fill of ditch turning to the south, immediately southeast of 2004 well CXLI. Cut into the natural clay subsoil.

10826  black glass gaming counter
10827  white glass gaming counter

B 07 56: 3 x Dressel 20, inc. part rim; 1 x samian (18/31); 1 x glass; 3 x castor; 9 v small coarser rims – not BB; 1 frag grey lid.

V07B-57  c.AD100-c130s
Ditch/drain fill running north-south and linking into or cutting ditch V07B-45 & V07B-46. Under V07B-53 and cutting natural clay.

L07B-6  shoe
L07B-7  shoe
L07B-8  tentage
L07B-9  shoe
L07B-10  scrap
L07B-11  shoe sole
L07B-12  shoe
L07B-13  scrap
L07B-14  scrap

B 07 57: 7 frags from 2 Dressel 20s; 1 x brick; 1 x cream/orange lid and top of a grey lid; 2 x castor; 1 x tiny frag rustic ware; 5 small chips and 1 frag of misc samian; 1 x handle of grey storage jar; 1 rim of a grey bowl and 2 other tiny rim frags; 3 small frags of early mortaria.

V07B-58  U/S
Mixed topsoil, clay and iron pan covering the southern part of excavated area, immediately under the plough-soil. Above V07B-36. Unstratified.

10831  spherical blue glass bead
10840  fragment of a green glass bead
10841  3 fragments of lead
10854  ½ decorated glass finger ring

B 07 58: [u/s] – considerable collection of misc rubbish – samian totally degraded. 18 small frags glass; 17 frags castor; frags of early C2 and C3 mortaria; variety of misc rims. NOTE: no C4 material – and no pre-Hadrianic.

V07B-59  c.AD100-130s
Northern end of north-south running ditch of V07B-55.

B 07 59: 1 frag pink mortaria with white wash; 1 frag of ? BB cooking pot.
V07B-60  c. AD140s+
Surface of a large east-west running roadway (B3) that runs past the south front of temple-tombs. CXXIV and CXXV. Cobbles set into fawn clay.
10836 square-sectioned blue glass bead
10894 ceramic gaming counter

B 07 60: the stand base of a heavy black urn with pastry crust decoration (not in Gillam); 3 v warn samian frags; 6 misc rim frags – all clearly residual; 2 frags Dressel 20.

V07B-61  AD213+
Small but heavily burnt charcoal patch just west of stone drain V07B-54.
10837 2 fragments of lead

B 07 61: no pottery, etc.

V07B-62  c. AD100-130s
Ditch fill of earlier ditch than V07B-56. Organic material in the bottom including many twigs.

B 07 62: 1 x frag side wall of a grey pot.

V07B-63  c. AD100-130
Mixed clay above natural clay and below plough-soil to west of temple tomb CXXIV.
10848 fragment of lead
10849 long biconical blue glass bead
10884 fragment of lead

B 07 63: a few worn and residual frags, inc. 2 rim frags of 2 pink mortaria; 1 frag glass; 1 frag samian.

V07B-64  c. AD100-130s
Small channel under V07B-63 running east-west.

B 07 64: no pottery etc.

V07B-65  AD213-270s
Fill from a square-sided well immediately south of roadway B3. Dark grey silt, compacted mud and an occasional slipped stone slab from the well side.
10851 spherical red glass bead

B 07 65: 1 x white mortarium rim (C3rd) and 1 small frag earlier (cream/pink); 2 small coarse rims – one grey and one black.

V07B-66  AD213-270s
Drain fill from northwest-southeast running stone lined drain (same as found running past third-century well in 2004 see Birley and Blake 2005, 47f). Silty grey sand.

B 07 66: 1 x brick frag; 2 x Dressel 20 frags; 1 small black rim. All discarded.

V07B-67  c. AD100-130s
Small west-east running drainage channel linking into V07B-55. Filled with mid grey silty clay.
10852 fragment of lead

B 07 67: 3 frags Dressel 20; 1 small frag castor; 1 x small glass; 1 small black pot rim and 1 brown pot rim.

V07B-68  c. AD120-130s
Kidney shaped pit fill cut into floor of V07B-36.

B 07 68: 9 frags brown vessel; 1 x small castor; 1 grey coarse rim and 1 x samian (Dr 64 – first half of C2).

V07B-69  AD130s+
Small pit cut into side of ditch V07B-55 towards its south end. Filled with mid grey sandy clay.

B 07 69: only one frag of a Dr 18/31 with a lead plug attached.

V07B-70  c. AD85+
Ditch fill from west-east running ? defensive ditch with ankle breaker/cleaning slot in the south of the excavated area. Filled with layered sands and organic material in very bottom.

B 07 70: 1 x spout of early brown mortarium, 1 x frag of 18/31; 1 x Dressel 20 frag; 1 x rim of dark grey bowl.

V07B-71  c. AD100-130s
Shallow drainage slot running north-south, south of the point where ditch V07B-55 turns slightly southeast. Filled with dark grey silty clay containing some slag.

B 07 71: slag; 1 x Dressel 20 frag; 1 x grey lid top; 3 x very small grey/black rims; 1 x castor; samian 1 x Dr 79 (second half of C2).

V07B-72  c. AD120-130s
Flooring material. Mixed brown and grey clay and patchy laminate. Underneath floor of V07B-36 and
above grey clay of V07B-42.
c792  *dupondius* of Trajan (AD98-117)
10862  copper-alloy bucket handle

**B 07 72:** samian – 2 x 37s.3 x ?; 3 x brown ware rims; 2 x single-handled brown flagon tops; 1 x castor; 6 small frags thin glass; 1 x BB1 bowl and 4 rims cooking pots BB1; 3 miscellaneous small rims. [Could well be Hadrianic.]

**V07B-73**  *c.* AD100-130
Small patch of intact flooring and possible beam slot. Filled with dark grey/black silty clay soil and cut into natural orange clay. Under cobbles of *vicus* roadway B3.
10855  fragment of lead
10860  fragment of a white glass bangle
10861  fragment of lead

**B 07 73:** 1 x mortarium rim (Bewcastle 270-350?); 1 x glass; 3 x castor; 1 x grey pastry crust; 7 misc very small rims; 11 degraded miscellaneous samian.

**V07B-74**  *c.* AD85-130
Major northeast-southwest running defensive ditch cutting through far northwest of excavated area. Filled with loose dark grey silt, occasional dressed stones and iron pan.
10872  samian stamp of Pontus (Pontius) (AD65-95)
10874  copper-alloy lock stud

**B 07 74:** 1 x early grey mortarium; 1 x glass frag; 76 x degraded samian frags; 2 x castor frags; 10 misc small grey/black rims.

**V07B-75**  AD213-270s
Circular stone lined well CXLI. Just northeast of square topped well CXL. Filled with loam and occasional patches of clay and fallen side stones.
10857  small biconical blue glass bead
10858  whetstone
W07B-2  bowl

**B 07 75:** 1 x base frag grey mortarium, with much variegated grit; 1 small frag lid; 5 v small miscellaneous samian frags; rim frags of 3 dark grey/black bowl and 1 x cooking pot rim.

**V07B-76**  *c.* AD130s+
Large area of silty, dark grey clay lying over ditch V07B-46 and over the cobbles on its east side.

Adjacent to west edge of V07B-72.

**B 07 76:** 1 x spout of single handled black flagon; 1 x handle and rim of coarse brown flagon; 3 x castor; 4 x worn samian (2 x 37s); 9 small black and brown rim frags.

**V07B-77**  AD213-270s
Silty grey clay fill from well CXLII (Immediately north of stone lined well CXLI). Filled with mud in the bottom, plus some organic material and cut into the natural orange clay.

**B 07 77:** miscellaneous tiny and useless scraps – all discarded.

**V07B-78**  *c.* AD100-130s
10863  fragment of lead
10864  fragment of lead

**B 07 78:** no pottery, etc.

**V07B-79**  *c.* AD100-130s
Ditch fill from point where V07B-46 and V07B-59 join. It is unclear which came earliest/latest. Ditch mud, occasional fallen dressed stone and organic material in bottom few centimetres.
10865  stone sling shot
10892  *graffito* on samian sherd
L07B-15  scrap
L07B-16  scrap
L07B-17  shoe
L07B-18  shoe
L07B-19  shoe sole
L07B-20  scrap
W07B-3  peg

**B 07 79:** 12 frags plain samian, with 1 x 37 (with circles instead of normal ovolo); 2 x castor; 2 frags of cream/grey bowl; 1 x rim grey bowl; 6 x Dressel 20 frags (3 different vessels) including a large handle.

**V07B-80**  *c.* AD100-130s
Possible beam slot running east-west. Re-deposited natural orange clay overlying the true natural.

**B 07 80:** 3 frags mortaria – all different – pink, cream and grey (with curved lip); 1 x casdtor; samian – 7 worn frags, including a Curle 15; 6...
coarse rims – 5 grey and 1 dark grey platter – frags include some BB1.

**V07B-81**  c. AD100-130s
Pit fill from a narrow oval pit running north-south, immediately north of ditch V07B-70. Sandy grey clay and organic material in very bottom.

B 07 81: 2 minute samian frags; 1 x rim of grey bowl.

**V07B-82**  c. AD100-130s
Pit fill from a shallow circular pit, immediately east of pit V07B-81.

B 07 82: no pottery, etc.

**V07B-83**  c. AD100-120
Oval pit/post hole just east of mausoleum/shrine CXXVI. Cuts ditch V07B-43/45 and was overlain by floor of V07B-7.

B 07 83: no pottery, etc.

**V07B-84**  AD140s-213
Original road surface of B3 (V07B-9). Large dressed stones tightly laid together as penning. Underlay the cobbles of secondary road surface V07B-9.

B 07 84: 1 x frag samian 37; 1 v small black bowl rim.

**V07B-85**  c. AD100-130
Industrial flooring. Heavily burnt orange soil and dark brown loam. Substantial amounts of soot. Came before the mausoleum which cut through it.

B 07 85: remains of a BB1 pot smashed into small pieces, and frags of a black platter; some slag; 6 v small residual samian; 3 x castor; 1 x glass; 2 minute mortaria rim frags from different vessels (early cream/fawn).

**V07B-86**  c. AD100-120
Ditch fill from a substantial ditch running northwest-southeast, immediately east of CXXVI. Same ditch as that found curving southeast beneath industrial buildings CXXI, CXXII and CXXIII in 2005 (Birley and Blake 2007, 53-54). Anaerobic ditch mud and silt.

B 07 86: frags of 7 bases – 2 black, 3 grey, 2 brown; 5 small rims – 1 grey, 1 cream, 3 black; frags 2 x ring neck flagons; 1 x body sherd pink mortarium; samian – 6 small misc pieces plain, with 3 x 37s and 1 x 15/17. [Looks to be an earlier deposit than most.]

**V07B-87**  AD213-270s
Sand and silt in bottom of well CXL.

**V07B-88**  AD213-270s
Light grey sandy silt in bottom of well CXLI.

B 07 86: as of a young Hadrian (AD121-122)
10878 antler needle
10889 copper-alloy pin
10890 flint flake
10891 fragment of lead
L07B-21 sole from a child’s shoe
L07B-22 patch
L07B-23 shoe
L07B-24 shoe
L07B-25 shoe
T07B-2 stylus

B 07 85: graffito on samian sherd
10773 jet armlet
10803 graffiti on samian sherd
10806 fragment of a white glass bangle

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2008 Area B Contexts and small finds

**V08B-1**  
US  
Post Roman plough soil above west wall of *vicus* building CXIV and roadway B1 (V08B-2).  
10898 iron split pin  
CODE B1  
Nails  
Slag  
Amphora  
Brick  
Samian 2 residual sherds  
Castor  
Mortaria  
Glass  
Fawn wares 3 body sherds  
Pink wares  
Brown wares  
Grey wares 1 sherd  
Black wares 1 sherd

**V08B-2**  
AD213+  
Cobbled road surface of road B1, immediately west of *vicus* building CXIV.  
10898 legionary tile stamp [LEG ...]  
10902 white glass gaming counter  
CODE B2  
Nails  
Slag  
Amphora 2 fragments  
Brick 2 fragments  
Samian 9 fragments  
Castor 1 fragment  
Mortaria 2 rim sherds  
Glass 3 fragments of a bottle  
Fawn wares 25 sherds including 2 lids + 1 rim, sherds mainly from 1 or 2 bowls  
Pink wares  
Brown wares  
Grey wares 11 body sherds + 9 rim sherds  
Black wares 6 sherds including 2 rim sherds + 1 sherd glazed post-medieval & 1 fragment of a clay pipe stem

**V08B-3**  
AD213-270s  
Floor surface of *vicus* building CXXVIII room 2 (west of V08B-2).  
10897 ceramic gaming counter  
10899 ceramic gaming counter  
10900 ceramic gaming counter  
10903 ceramic gaming counter  
CODE B3  
Nails  
Slag  
Amphora 4 sherds  
Brick  
Samian 12 abraded sherds  
Castor 2 sherds  
Mortaria 3 sherds including 1 rim  
Glass  
Fawn wares 9 sherds including 1 rim  
Pink wares  
Brown wares  
Grey wares 46 sherds including 4 rim sherds  
Black wares 26 sherds including 10 rim sherds (significant parts of 2 vessels)

**V08B-4**  
AD213-270s  
Orange clay packing for the floor of *vicus* building CXVII (close to its eastern wall).  
C819 second-century dupondius  
10901 small biconical red glass bead  
10909 copper-alloy stud  
10912 lead pin  
CODE B4  
Nails 2  
Slag 18 pieces  
Amphora 25 fragments  
Brick 4 pieces including both tegula and imbrex  
Samian 32 fragments (all abraded residual)  
Castor 7 sherds  
Mortaria 9 sherds including 5 rim  
Glass 3 sherds  
Fawn wares 10 sherds  
Pink wares  
Brown wares  
Grey wares 57 sherds including 9 different rims and including 1 pie-crust rim  
Black wares 69 sherds including 18 rim sherds

**V08B-5**  
AD213-270s  
Patchy flagged floor immediately north of, and on top of, V08B-4 (similar to V08B-15).  
C876 Radiate (AD260-68)  
10904 fragment of lead  
10905 jet hairpin head  
10910 iron hook  
10913 glass hook  
10978 spherical blue glass bead  
CODE B5  
Nails  
...
Slag 6 fragments
Amphora 2 small sherds
Brick 4 pieces
Samian 13 small abraded sherds
Castor 6 fragments from at least 4 vessels
Mortaria 2 small sherds
Glass 1 sherd
Fawn wares 15 sherds
Pink wares
Brown wares
Grey wares 38 sherds including 7 rim sherds
Black wares 26 sherds including 9 rim sherds

V08B-6 AD213-270s
Clay packing, under roadway cobbles of V08B-2.
CODE B6
Nails
Slag
Amphora 1 sherd
Brick
Samian
Castor
Mortaria 2 sherds
Glass
Fawn wares
Pink wares 1 sherd
Brown wares
Grey wares 21 including 1 rim sherd
Black wares 8 sherds including 4 rim sherds
Derbyshire ware 1 sherd

V08B-7 AD213-270s
Workshop floor of vicus building CXXVIII, room 1.
C834 silver denarius of Geta or similar (AD200-215)
10906 samian stamp of Macrianus (AD155-190)
10907 graffito on samian sherd
10908 stone lid
CODE B7
Nails 1
Slag
Amphora
Brick
Samian 1 sherd residual
Castor
Mortaria 7 sherds including rims from 2 vessels
Glass
Fawn wares 1 sherd
Pink wares 1 sherd
Brown wares
Grey wares 18 sherds including 3 rim sherds
Black wares 9 sherds including 3 rim sherds

V08B-8 AD213-270s
Fabric of the west wall of vicus building CXXVIII.
CODE B8
Nails
Slag
Amphora
Brick
Samian 1 sherd Dr 37 base
Castor
Mortaria
Glass
Fawn wares
Pink wares
Brown wares
Grey wares 1 body sherd
Black wares 2 rim fragments

V08B-9 AD213-270s
Drain fill between west wall of vicus building CXIV and roadway B1 (V08B-2).
CODE B9
Nails
Slag
Amphora 1 sherd
Brick
Samian 1 sherd
Castor
Mortaria
Glass 1 sherd
Fawn wares
Pink wares
Brown wares
Grey wares 16 including 1 rim
Black wares 16 sherds including 7 rim sherds
Cream fabric 1 sherd

V08B-10 AD213-270s
Fill of a pit cut into the floor of the south part of workshop CXXVIII.

V08B-11 AD213-270s
Fill of a pit cut into the floor of the north part of vicus building CXXVIII.

V08B-12 c.AD130-212
? Second-century surface, under the clay packing of V08B-6.
CODE B12
Nails
Slag
Amphora
Brick
Samian
Castor
Mortaria 1 rim sherd
Glass
Fawn wares 1 sherd
Pink wares
Brown wares
Grey wares 13 sherds including 5 rim sherds
Black wares 3 sherds including 1 rim

V08B-13 AD213-270s
Fabric of the south wall of *vicus* building CXXVII.
CODE B13
Nails
Slag
Amphora
Brick
Samian
Castor
Mortaria
Glass
Fawn wares
Pink wares
Brown wares
Grey wares 7 sherds from 1 vessel inc. the base
Black wares 1 sherd

V08B-14 AD213+
Cobbled road surface of east-west running road A2, north of both V08B-5 and *vicus* building CXXVII.
C877 illegible (c.260-378)
10911 enamelled brooch
10929 ballista ball
10930 ballista ball
10931 ballista ball
10932 copper-alloy pin
10948 iron handle
CODE B14
Nails 1
Slag 2 fragments
Amphora 3 sherds Dr 20
Brick 1 piece
Samian 8 very small fragments
Castor 2 fragments
Mortaria 2 rim sherds
Glass 1 piece
Fawn wares 5 pieces
Pink wares
Brown wares
Grey wares 40 fragments including 3 rims
Black wares 21 fragments including 9 rims

V08B-15 AD213-270s
Workshop floor of *vicus* building CXXVII (similar to V08B-5).
10914 copper-alloy scale armour
10915 ½ penannular brooch
10917 lead brooch pattern
10918 fragment of lead
10919 fragment of lead
10920 ? silver pin
10921 copper-alloy strip
10922 copper-alloy strip
10928 fragment of lead
10935 copper-alloy strip
CODE B15
Nails 2
Slag 60 large frags (+about 4 times that amount not retained from trench)
Amphora 7 sherds Dr 20
Brick 2 fragments tegula
Samian 39 sherds including several from 1 mortarium bowl
Castor 7 sherds
Mortaria 9 sherds (5 from 1 bowl)
Glass 3 fragments
Fawn wares
Pink wares
Brown wares
Grey wares 81 body sherds + 21 rim sherds
Black wares 31 body sherds + 11 rim sherds
Derbyshire ware 1 rim
Calcite gritted 2 possible sherds

V08B-16 AD213-270s
Packing beneath workshop floor CXXVII.
10916 samian stamp of Cintusmus i (AD140-180)
CODE B16
Nails 2
Slag 6 pieces
Amphora
Brick 1 piece
Samian 6 sherds
Castor 1 sherd
Mortaria
Glass
Fawn wares 5 pieces
Pink wares
Brown wares 2 sherds
Grey wares 14 including 2 rim sherds
Black wares 2 sherds including 1 rim

V08B-17 AD213+
Clay and collapsed stones inside stone-built apse of workshop CXVII.
10923 copper-alloy brooch
10925 flint flake
10926 copper-alloy fitting (modern)
10942  samian stamp of Mercator i (AD70-110)
CODE   B17
Nails   5
Slag    19 pieces
Amphora 10 sherds
Brick   6 fragments including an imbrex
Samian  24 sherds
Castor  16 sherds including 2 nice bases
Mortaria 5 sherds
Glass   10 sherds
Fawn wares 15 sherds including 1 painted + a neck from a ring-necked flagon
Pink wares 11 body sherds
Brown wares
Grey wares 123 body sherds + 27 rim sherds
Black wares 27 body sherds + 20 rim sherds
Rustic ware 1 sherd
1 small fragment of a clay pipe stem

V08B-18 AD213-270s
Cobbled foundation base for workshop CXXVII floor (directly beneath V08B-15).
10927  whetstone
CODE   B18
Nails   1
Slag    1 fragment
Amphora 5 sherds Dr 20
Brick   1 fragment imbrex
Samian  19 sherds
Castor  2 sherds
Mortaria 5 sherds
Glass   2 rim sherds
Fawn wares 2 small sherds
Pink wares
Brown wares
Grey wares 10 sherds including 3 rim sherds
Black wares 8 sherds including 3 rim sherds

V08B-20 AD213-270s
Mixed clay packing beneath flags of workshop CXXVII's floor V08B-5.
10924  stone gaming counter
CODE   B20
Nails   1
Slag    3 small fragments
Amphora
Brick
Samian  3 sherds
Castor  3 sherds
Mortaria
Glass
Fawn wares 2 sherds
Pink wares
Brown wares
Grey wares 11 sherds including 1 base
Black wares 5 sherds including 2 base sherds

V08B-21 AD213+
Roman occupation surface including some collapsed material from nineteenth-century field wall, 15m south of vicus building CXXVII.
10933  black glass gaming counter
10934  shale ring
10936  whetstone
10937  square sectioned blue, white and red glass bead
CODE   B21
Nails   1
Slag    2 pieces
Amphora
Brick   1 piece
Samian  7 small fragments, all very abraded
Castor  3 sherds
Mortaria 1 rim sherd
Glass   1 bottle base
Fawn wares 1 sherd
Pink wares
Brown wares
Grey wares 50 sherds including 5 rim sherds
Black wares 12 sherds including 4 rim sherds

V08B-22 AD213+
Loam and fallen wall stones immediately west of stone apse of workshop CXXVII.
C948   NOT A COIN
10938  fragment of a white glass bangle
10939  fragment of a square-sectioned green glass bead
10945  miscellaneous copper-alloy ring
10972 annular jet bead
10973 hexagonal green glass bead
10974 ceramic gaming counter
CODE B22
Nails 7
Slag 10 pieces
Amphora 38 frags Dr 20 + 1 complete rim with graffito & 1 handle
Brick 7 pieces including 2 separate imbrex
Samian 34 abraded sherds
Castor 7 sherds
Mortaria 12 sherds including 7 rim sherds
Glass 5 sherds including 1 ? modern
Fawn wares 45 sherds
Pink wares
Brown wares
Grey wares 167 body sherds + 34 rim sherds
Black wares 68 body sherds + 22 rim sherds
Derbyshire ware 1 base sherd
1 fragment of a clay pipe stem

V08B-23 AD213+
Clay surface outside north part of stone apse of workshop CXVII (similar to V08B-22 and beneath V08B-14).
10940 copper-alloy strap end
10941 ½ samian spindle whorl
10944 mortarium stamp (illegible)
12109 copper-alloy handle
CODE B23
Nails 1
Slag 1 fragment
Amphora
Brick 3 fragments
Samian 2 sherds
Castor 1 sherd
Mortaria 9 sherds including 4 from 1 bowl of Gillam type 248 (AD130-160)
Glass
Fawn wares 7 sherds
Pink wares
Brown wares
Grey wares 20 sherds including 4 rim sherds
Black wares 6 sherds
1 neck from a ring-necked flagon

V08B-24 U/S
Red coloured loam directly under turf and above road of V08B-33.
CODE B24
Nails 1
Slag
Amphora
Brick
Samian 1 sherd
Castor
Mortaria 2 rim sherds
Glass
Fawn wares 2 sherds
Pink wares
Brown wares
Grey wares 13 sherds including 6 rim sherds
Black wares 5 body sherds + 1 glazed post-Medieval sherd

V08B-25 AD213+
Rectangular pit immediately south of roadway of B2 (V08B-33).
10943 bone gaming counter
CODE B25 (all small residual fragments)
Nails
Slag
Amphora 1 sherd
Brick
Samian 9 small frags
Castor
Mortaria
Glass
Fawn wares top of a ring-necked flagon
Pink wares
Brown wares
Grey wares 7 sherds
Black wares

V08B-26 AD213-270s
Soot and burnt material on stone flagged floor inside apse of workshop CXVII (beneath V08B-17).
10949 26 fragment of lead
CODE B26
Nails
Slag
Amphora 5 sherds Dr 20
Brick
Samian 4 sherds
Castor
Mortaria
Glass
Fawn wares 3 sherds
Pink wares
Brown wares
Grey wares 18 sherds including 3 rim sherds
Black wares 2 sherds

V08B-27 U/S
Small hearth on roadway B2 (V08B-33), immediately north of pit V08B-25.
V08B-28  AD213-270s
Packing clay outside north and west sides of stone
built apse of CXXVII (beneath V08B-23).
CODE     B28
Nails     1
Slag      5 pieces
Amphora
Brick     3 pieces
Samian    13 sherds
Castor    1 sherd
Mortaria  1 rim sherd
Glass     1 sherd
Fawn wares 9 sherds
Pink wares
Brown wares
Grey wares 12 sherds including 2 rim sherds
Black wares 9 sherds including 2 rim sherds
1 candlestick

V08B-29  AD213+
Floor surface of workshop CXLIII (possibly
contaminated with earlier material from a pre-Hadrianic level).
C947 silver denarius of Vespasian (AD69-79)
C949 illegible fragment ? second century
C969 illegible perhaps Tetrarchic
   c.AD296-312
C970 illegible probably Carausius
   AD286-93
C971 illegible probably radiate c.AD244-73
10946 copper-alloy collar with wooden centre
10947 lead weight
10952 flint flake
10954 mortarium stamp (illegible)
10955 samian stamp on Dr 31 of Littera i
   (AD120-150)
10956 pentagonal green glass bead
10957 samian stamp of Masclus i (AD35-65)
10962 bone gaming counter
10963 fragment of lead
10969 fragment of lead
10970 copper-alloy bow brooch
10971 copper-alloy penannular brooch
10977 fragment of lead
10989 samian stamp O[-] or [-]O
10990 iron ferrule
CODE     B29
Nails     9
Slag      1 piece
Amphora   21 sherds (Dr 20) at least 7
different vessels
Brick     10 sherds including 4 different
   roof tiles
Samian    63 sherds
Castor    17 sherds including the best part
   of 1 broken vessel
Mortaria  15 sherds including 5 rims
Glass     16 sherds including window glass
   and a bottle base
Fawn wares 26 sherds including 4 rims from
   separate vessels
Pink wares 18 sherds including the best part
   of 1 plate
Brown wares
Grey wares 36 rim sherds +14 base sherds +
   103 body sherds
Black wares 19 rim sherds + 4 base sherds +
   59 body sherds
Rustic ware 7 sherds

V08B-30  AD213+
Mixed loam beneath turf and above V08B-31
and V08B-32.
10950 fragment of lead
10951 fragment of lead
CODE     B30
Nails     1
Slag
Amphora   1 body sherd
Brick
Samian    4 residual sherds
Castor
Mortaria
Glass     1 sherd
Fawn wares 12 sherds
Pink wares 3 sherds
Brown wares
Grey wares 17 sherds including 4 rim sherds
Black wares 6 sherds including 3 rim sherds
Rough cast 1 sherd

V08B-31  c.AD105-205
Fill of a beam slot running east-west, beneath
V08B-30.
CODE     B31
Nails     1
Slag
Amphora
Brick
Samian    1 sherd
Castor
Mortaria
Glass
Fawn wares 1 sherd
Pink wares 1 sherd
Brown wares
Grey wares 1 rim sherd Gillam type 215
   (AD80-125)
Black wares 1 sherd
V08B-32  c.AD105-205
Small circular pit, adjacent to beam slot of V08B-31 and containing altar 10953.
10953  Altar

V08B-33  AD213+
Cobbled surface of road B2, leading southwest from the vicus toward ‘King Cairn hill’. Edged on both sides with curb stones.
C1226  probably counterfeit denarius of the early third century, perhaps earlier denarius of Septimius Severus (AD193-211)
10958  iron wedge
10959  iron wedge
10960  iron wedge
10993  cat paw print on tile
12151  samian gaming counter
CODE  B33
Nails  4
Slag  1 fragment
Amphora
Brick  3 pieces
Samian  4 pieces
Castor  2 sherds
Mortaria  1 spout
Glass  2 sherds
Fawn wares 3 sherds
Pink wares
Brown wares
Grey wares 25 sherds
Black wares 13 sherds including 3 rim sherds

V08B-34  c.AD105-205
Beam slot running northwest-southeast, adjacent to V08B-31.

V08B-35  AD213-270s
Small flags and mixed clay in CXLIII. Slightly later occupation surface on the floor of workshop CXLIII than V08B-29.
10961  ceramic gaming counter
10981  ceramic gaming counter
10982  ceramic gaming counter
10985  samian stamp of Ioenalis (AD100-130)
10987  copper-alloy bell stud
10987  copper-alloy plate
10988  square copper-alloy fitting
10999  fungiform stud
12133  square of blue glass
CODE  B35
Nails  3
Slag  5 pieces
Amphora  7 pieces
Brick
Samian  12 sherds
Castor  10 sherds
Mortaria  2 sherds
Glass  3 sherds
Fawn wares 9 sherds
Pink wares
Brown wares
Grey wares 92 sherds including 15 rim sherds
Black wares 38 sherds including 9 rim sherds

V08B-36  AD213+
Loam above V08B-29.
CODE  B36
Nails
Slag  1 piece
Amphora  8 sherds of Dr 20
Brick
Samian  3 sherds
Castor
Mortaria  3 sherds
Glass  1 fragment from a bottle
Fawn wares 12 sherds
Pink wares
Brown wares
Grey wares 19 sherds including 4 rim sherds
Black wares 13 sherds including 2 rims

V08B-37  AD213+
Fawn clay floor surface (Resurfacing of V08B-38).
CODE  B37
Nails
Slag  3 pieces
Amphora  1 fragment
Brick
Samian  2 sherds
Castor  2 body sherds
Mortaria
Glass
Fawn wares 3 sherds
Pink wares
Brown wares
Grey wares 31 sherds including 8 rim sherds
Black wares 5 sherds

V08B-38  AD213-270s
Later occupation surface of workshop CXLIII.
Soot and industrial waste (underlay V08B-37).
CODE  B38
Nails  1
Slag
Amphora  1 sherd
Brick
Samian  3 abraded fragments
Castor
Mortaria 2 sherds
Glass 1 sherd
Fawn wares 8 sherds
Pink wares
Brown wares 2 sherds
Grey wares 13 sherds including 5 rim sherds
Black wares 5 sherds

V08B-39 AD213-270s
Cobbled surface of waggon park/storage yard (immediately north of roadway B2 (V08B-33)).
C106 denarius of Severus Alexander (AD222-33)
10964 silver finger-ring, engraved MATRI PATRI
10965 copper-alloy fragment
10968 spherical blue glass bead
10979 copper-alloy edging strip
10980 ceramic gaming counter
CODE B39
Nails
Slag 1 large piece
Amphora
Brick
Samian 2 small abraded sherds
Castor 1 small sherd
Mortaria 1 rim sherd
Glass 2 small sherds
Fawn wares 1 sherd
Pink wares
Brown wares
Grey wares 25 sherds including 4 rim sherds
Black wares 4 sherds including 3 rim sherds

V08B-40 AD213-270s
Rake pit for large hearth in floor, V08B-29, of workshop CXLIII (associated with V08B-53).
C1211 Illegible, perhaps second-century As
10966 fragment of lead
12125 fragment of lead
12126 fragment of lead
CODE B40
Nails
Slag 2 fragments
Amphora 3 sherds
Brick
Samian
Castor
Mortaria 2 sherds
Glass 2 fragments
Fawn wares 22 frags from 1 vessel + 1 complete base (no rim)
Pink wares

Brown wares
Grey wares 21 sherds including 6 rim sherds
Black wares 10 sherds
Rustic ware 15 sherds

V08B-41 AD213+
Second-century floor surface including post holes beneath, and extending west, of vicus building CXXVII.
10967 samian stamp of Silvius ii (AD120-160)
CODE B41
Nails
Slag
Amphora 5 sherds
Brick
Samian 4 sherds (3 from a single vessel)
Castor 1 sherd
Mortaria
Glass
Fawn wares 17 sherds
Pink wares
Brown wares
Grey wares 7 sherds including 2 rims
Black wares

V08B-42 AD 213+
Small channel, running north-south at east end of waggon park/storage yard.
C1108 Illegible second century, perhaps Antoninus Pius (AD138-61).
10991 whetstone
10994 ? silver object
12102 ceramic figurine ? Mercury
CODE B42
Nails
Slag 2 pieces
Amphora
Brick 5 small abraded pieces
Samian 15 small abraded pieces
Castor 4 sherds
Mortaria 4 sherds
Glass 3 small pieces
Fawn wares
Pink wares 16 sherds
Brown wares
Grey wares 60 body sherds + 18 rim sherds
Black wares 13 including 4 rim sherds
*+ 2 sherds calcite gritted

V08B-43 AD213+
Topsoil and varying cobbles from the area east of channel V08B-42.
C1254 denarius of Vespasian (AD69-79)
10975 fragment of lead
12167 ½ spherical blue glass bead
CODE B43
Nails 1
Slag 1 piece
Amphora
Brick
Samian 7 small residual sherds
Castor 4 sherds
Mortaria 2 rim sherds
Glass
Fawn wares 3 sherds
Pink wares
Brown wares
Grey wares 48 sherds including 3 rim sherds
Black wares 9 sherds including 4 rim sherds

V08B-44 AD213-270s
Cobbled surface immediately east of channel V08B-42 (beneath V08B-43).
CODE B44
Nails
Slag
Amphora
Brick
Samian 10 sherds
Castor
Mortaria 1 small sherd
Glass 6 small sherds
Fawn wares
Pink wares 2 sherds
Brown wares
Grey wares 48 sherds including 3 rim sherds
Black wares 75 sherds including 12 rims

V08B-45 AD213+
Fill of a pit, cut into the floor of V08B-29 (just north of V08B-46).
10976 graffito on amphora
CODE B45
Nails
Slag
Amphora
Brick 1 piece roof tile (imbrex)
Samian 1 sherd
Castor 1 sherd
Mortaria
Glass 1 sherd
Fawn wares 2 sherds
Pink wares
Brown wares
Grey wares 2 sherds
Black wares 1 sherd

V08B-46 AD213+
Fill of a beam slot running north-south and turning 90 degrees east-west in the floor of CXLIII (V08B-29).
CODE B46
Nails
Slag
Amphora
Brick
Samian
Castor
Mortaria
Glass
Fawn wares 1 sherd
Pink wares
Brown wares
Grey wares 3 sherds
Black wares

V08B-47 U/S
Small area of plough damaged stonework (above industrial workshop CXXVII).
C1105 Illegible second-century As/dupondius
CODE B47
Nails
Slag
Amphora
Brick
Samian 14 degraded sherds of plain and decorated
Castor 1 sherd
Mortaria 4 sherds from 4 different vessels
Glass 2 sherds
Fawn wares
Pink wares
Brown wares
Grey wares
Black wares 12 vessels/26 rims sherds + 1 body sherd
1 sherd of a ? lamp

V08B-48 AD213-270s
Loam lying on top of the cobbles of waggon park/storage yard (disturbed to some extent by post-Roman ploughing).
C1107 Radiate, probably of Claudius II (AD268-70)
C1136 denarius, probably of Septimius Severus (AD193-211)
C1161 denarius of Plautilla (AD202-05)
C1161B Radiate copy (AD260-73)
C1178 denarius of Vespasian/Titus (AD69-81)
10983 miscellaneous copper-alloy ring
10984 copper-alloy brooch
10992 ceramic gaming counter
10995 horseshoe
10996 ceramic gaming counter
10997 iron ‘T’ pin
10998 fragment of an inlaid glass bangle
12101 fragment of lead
12115 fragment of lead
12116 fragment of lead
12118 ½ annular green glass bead
12121 fragment of lead
12123 lead plumb bob
12129 fragment of lead
12135 stone counter
12155 annular yellow glass bead
12168 graffito on samian base
CODE B48
Nails 11
Slag 10 pieces
Amphora 6 fragments
Brick 1 imbrex fragment
Samian 17 sherds all abraded residual
Castor 11 small sherds
Mortaria 9 sherds
Glass 2 small sherds
Fawn wares
Pink wares 24 sherds
Brown wares
Grey wares 48 body sherds + 23 rim sherds
Black wares 22 body sherds + 15 rim sherds
1 clay pipe bowl

V08B-49 AD213+
Contents of a black burnished ware pot set into the cobbles of the waggon park/storage yard.

V08B-50 AD213+
Rubble surface immediately on north edge of roadway B2 (V08B-33) and south of second-century floor V08B-52.
C1137 denarius of Trajan (AD98-117)
C1255 Gallienus (AD260-68)
CODE B50
Nails 2
Slag 2 pieces
Amphora 2 eroded fragments
Brick
Samian 11 fragments
Castor 1 small sherd
Mortaria 2 small sherds
Glass 2 sherds
Fawn wares 2 sherds
Pink wares
Brown wares
Grey wares 18 sherds including 3 rim sherds
Black wares 18 sherds including 4 rim sherds

V08B-51 c.AD130-213
Flags used to resurface a section of industrial flooring (V08B56) in far northwest corner of the excavated area. *Heavily plough damaged.
C1160 Claudius II posth. (AD270)
12100 spherical green glass bead
12103 fragment of lead
12104 samian gaming counter
12107 fragment of a white glass bangle
12117 ½ yellow annular glass bead
CODE B51
Nails
Slag 1 fragment
Amphora 3 sherds
Brick
Samian 1 abraded sherd
Castor 1 sherd
Mortaria 1 sherd
Glass
Fawn wares
Pink wares 2 shers
Brown wares
Grey wares 1 sherd
Black wares 1 sherd

V08B-52 c.AD130-213
Flagged floor of an industrial building underlying waggon park/storage yard.
C1179 Second-century sestertius, probably of Antoninus Pius (AD138-161)
C1225 Illegible fragment, perhaps second century
12119 copper-alloy ear ring
12122 shale gaming counter
12124 ceramic spindle whorl
12127 lead pin
12138 flint flake
12150 flint flake
12152 iron blade
12159 ½ white glass gaming counter
12165 iron ? chisel blade
CODE B52
Nails 5
Slag 1 small
Amphora 5 Dr 20 (2 vessels)
Brick 4
Samian 9 including Dr 37 with two small drilled holes
Castor 7 (from 3 separate vessels)
Mortaria 9 frags from 6 vessels
Glass 4 (including ½ base from a bottle)
Fawn wares 5 small fragments
Pink wares
Brown wares
Grey wares 1 vessel 32 fragments (all base no rim sherds)
Black wares 5 vessels including 20+ body sherds (all residual except for the grey vessel)

**V08B-53**  AD213-270s
Material from inside a hearth on floor (V08B-29) of workshop CXLIII. Associated with the rake pit (V08B-40).
- 12105 iron knife
- 12106 fragment of an iron ? spear shaft
CODE B53
Nails
Slag
- Amphora 4 sherds
- Brick 1 tegula fragment
- Samian 8 sherds
- Castor 2 sherds
- Mortaria 4 sherds from at least 2 vessels
- Glass 3 sherds
- Fawn wares 4 sherds
- Pink wares
- Brown wares
- Grey wares 31 sherds including 8 rim sherds
- Black wares 10 sherds including 4 rim sherds

**V08B-54**  c.AD130-213
Fill from a drain running along the northeast edge of floor V08B-52.
- 12108 copper-alloy handle
- 12132 iron ? punch
- 12157 ceramic gaming counter
CODE B54
Nails
Slag 1 clinker
- Amphora 1 fragment from a top
- Brick
- Samian 7 degraded
- Castor 4 (3 vessels)
- Mortaria 2 sherds
- Glass 2
- Fawn wares
- Pink wares
- Brown wares
- Grey wares 6 different vessels 11 rim + 36 body sherds
- Black wares 2 sherds
(Grey is insignificant — the rest is rubbish)

**V08B-55**  AD213-270s
Sooty flooring of hearth in apse of workshop CXXVII on the flags of V08B-26 (similar to V08B15).
- 12110 small lead pin
- 12111 fragment of lead
- 12112 fragment of lead
- 12113 fragment of lead
- 12114 fragment of lead
CODE B55
Nails
Slag 22 fragments
- Amphora 6 sherds Dr 20
- Brick
- Samian 6 sherds
- Castor 1 sherd
- Mortaria
- Glass 1 fragment bottle handle
- Fawn wares
- Pink wares
- Brown wares
- Grey wares 7 sherds
- Black wares 13 sherds including 5 rim sherds from at least 4 vessels

**V08B-56**  c.AD130-205
Industrial surface of clay, covered in iron pan, with significant amounts of soot and coal (same as, but beneath V08B-51).
- 12120 4 frags of lead
- 12128 copper-alloy brooch
- 12131 fragment of lead (?) stud
- 12134 fragment of lead
- 12139 samian stamp A[-]OF
- 12145 samian stamp [-]
- 12148 fragment of a white glass bangle
CODE B56
Nails
Slag 43 large pieces
- Amphora 6 sherds
- Brick 4 pieces
- Samian 6 sherds
- Castor
- Mortaria 2 sherds
- Glass 1 sherd of window
- Fawn wares 5 sherds
- Pink wares
- Brown wares
- Grey wares 10 sherds including 1 rim
- Black wares 4 sherds including 2 different rims
- Cream coloured 2 sherds

**V08B-57**  c.AD130-213
Fill from a drain running northwest-southeast immediately west of floor V08B-51 & 56.
CODE B57
Nails
Slag
Amphora
Brick
Samian
Castor
Mortaria 1 sherd
Glass
Fawn wares 1 sherd
Pink wares
Brown wares
Grey wares 7 sherds including 1 rim
Black wares

V08B-58  U/S
Spread of loose cobbles running northwest-southeast directly under turf and above V08B-56.
C1331  denarius of Vespasian/Titus
12130  fragment of lead
CODE  B58
Nails  18
Slag  11 pieces
Amphora  3 sherds of Dr 20
Brick  1 fragment of tile
Samian  11 sherds residual
Castor  15 sherds from at least 4 vessels (2 rims)
Mortaria  6 sherds from 6 vessels (rims)
Glass  13 sherds mostly bottle including 1 rim, 1 handle, 1 base sherd
Fawn wares 7 sherds
Pink wares 1 sherd
Brown wares
Grey wares 13 body sherds + 10 rims from 10 vessels
Black wares 3 body sherds + 6 rims from 6 vessels
Rustic ware 1 sherd
*Calcite gritted 3 sherds

V08B-59  c.AD85-130
Fill from a ditch running east-west beneath floor of V08B-52.
C1330  illegible fragment, probably second century
12136  mortarium stamp (illegible)
12137  ½ intaglio
12144  amphora stamp Sei()?
12146  fragment of a white glass bangle
12147  samian stamp of Roppus ii-Rut- (AD110-135)
12162  samian stamp of (probably) Susacus (AD140-170)
CODE  B59
Nails  1

V08B-60  AD213+
Occupation surface adjacent to northwest edge of the flags of V08B-52 (directly beneath V08B-58 and above V08B-51& 61).
12140  ½ spindle whorl
CODE  60
Nails  Slag
Amphora
Brick  1 piece
Samian  3 sherds
Castor  8 sherds
Mortaria
Glass  8 sherds
Fawn wares 2 sherds including 1 rim
Pink wares
Brown wares
Grey wares 6 sherds including 1 rim
Black wares 2 body sherds

V08B-61  c.AD130-205
Industrial surface of mixed clay and iron pan (same as V08B-56, but further east). Runs beneath cobbles of waggon park/storage yard).
12141  crucible
12142  fragment of lead
12143  copper-alloy brooch
12153  flint flake
12158  lead stud
12159  lead weight
12171  samian stamp of Reginus ii (AD120-150)
CODE  B61
Nails  2
Slag  29 pieces
Amphora  4 sherds Dr 20
Brick  4 pieces
Samian  25 fragments
Castor  5 sherds
Mortaria 7 sherds
Glass 8 sherds
Fawn wares 31 sherds
Pink wares
Brown wares
Grey wares 8 rims + 25 body sherds
Black wares 30 sherds including 8 rims

V08B-62 U/S
U/S plough soil above cobbles of waggon park/storage yard at junction of roads A2 and B2 (V08B-33 & V08B-14).
CODE B62
Nails
Slag
Amphora
Brick 1 piece
Samian 2 abraded sherds
Castor 3 small sherds
Mortaria 2 rim sherds + 1 body sherd
Glass
Fawn wares
Pink wares
Brown wares
Grey wares 6 sherds including 5 rim sherds
Black wares 7 body sherds

V08B-63 AD213+
Cobbled surface under V08B-62 and immediately east of V08B-42 channel.
12149 miscellaneous copper-alloy ring
12154 samian gaming counter
CODE B63
Nails
Slag
Amphora 6 fragments
Brick
Samian 6 small abraded sherds
Castor 5 sherds from 5 separate vessels
Mortaria 2 rim sherds + 1 body sherd
Glass 3 small sherds
Fawn wares 10 small sherds
Pink wares
Brown wares
Grey wares 27 sherds including 5 rim sherds
Black wares 25 sherds including 10 rim sherds

V08B-64 AD130-213
Small area of late flagging (above cobbles of waggon park/storage yard).
C1227 probably Radiate copy AD260-73
12156 spherical gold-in-glass bead
12160 fragment of lead
CODE B64
Nails
Slag
Amphora
Brick
Samian 1 residual sherd
Castor
Mortaria
Glass
Fawn wares
Pink wares
Brown wares
Grey wares 7 sherds including 3 rims from separate vessels
Black wares 5 sherds
Calcite gritted 1 sherd

V08B-65 c.AD130-213
Fill from a shallow, circular pit cut into floor flags of industrial surface V08B-52.
12163 ceramic gaming counter
12164 ceramic spindle whorl
CODE B65
Nails
Slag
Amphora
Brick 1 piece
Samian 2 sherds plain
Castor
Mortaria 1 sherd
Glass
Fawn wares
Pink wares
Brown wares
Grey wares 1 sherd
Black wares
Rustic ware 1 sherd

V08B-66 AD213+
Loose loam and rubble north of V08B-64 (similar to V08B-43).
12172 samian gaming counter
CODE B66
Nails
Slag 2 pieces
Amphora
Brick
Samian 7 residual sherds
Castor
Mortaria 6 sherds including 4 rim sherds
Glass 3 sherds
Fawn wares 4 sherds
Pink wares
Brown wares
Grey wares 34 sherds including 10 rim sherds
Black wares 35 sherds including 13 rim sherds
V08B-67    AD85-130
Organic fill from a ? backfilled ditch running ?
northeast-southwest beneath pit V08B-65.
CODE     B67
Nails
Slag
Amphora
Brick
Samian  1 sherd
Castor   1 sherd
Mortaria
Glass
Fawn wares
Pink wares
Brown wares
Grey wares  2 sherds
Black wares

V08B-68    AD213+
Rubble foundation packing around a large
square stone (? plinth) in southwest of waggon
park/storage yard.
CODE     B68
Nails
Slag
Amphora  1 Dr 20 sherd
Brick    1 imbrex
Samian   1 sherd decorated (unabraded)
Castor
Mortaria
Glass
Fawn wares 2 sherds ring necked flagon
including 1 neck
Pink wares
Brown wares
Grey wares  1 rim sherd and 1 good base
Black wares 5 sherds including 2 separate rims

V08B-69    AD213-270s
Soil trapped between rubble wall foundations of
CXXVII, east of its stone apse and above floor,
V08B-15.
CODE     B69
Nails
Slag  2 fragments
Amphora
Brick
Samian  1 sherd
Castor   2 sherds
Mortaria
Glass
Fawn wares 5 sherds including 2 rims
Pink wares
Brown wares
Grey wares  6 sherds including 2 rims
Black wares 6 sherds including 3 rims

V08B-70    c.AD130-213
Packing clay, 200mm beneath floor flags of
industrial floor V08B-52.
CODE     B70
Nails  2
Slag   1 piece
Amphora 3 Dr 20 sherds
Brick
Samian  9 sherds decorated including 1 rim
Castor   2 sherds
Mortaria 4 sherds from 4 different bowls
Glass   2 sherds
Fawn wares 14 sherds including 2 necks from
ring necked flagons
Pink wares
Brown wares
Grey wares 16 sherds including 3 different rims
Black wares 4 sherds including 3 different rims
2009 Area B Contexts and small finds

V09B-1  c.AD130-205
Floor material from a mid/late second-century workshop in far west of excavated area.
12615  faience melon bead

V09B-2  U/S
Plough-disturbed soil immediately around building CXXIX.
C1339  Elagabalus AD218-222
12172  ½ spherical blue glass bead
12180  flint flake
12181  lock stud
12182  samian gaming counter
12183  ferrule
12185  fragment of a whetstone
12186  spherical blue glass bead
12195  iron object
12610  samian gaming counter

V09B-3  AD213-270s
Floor material of building CXXIX (partially disturbed by post Roman ploughing).
12173  square-sectioned blue glass bead
12196  ½ of a square-sectioned blue glass bead

V09B-4  AD213+
Original road surface of main roadway A3, running northwest-southeast through the western part of the vicus.
12174  samian gaming counter
12175  small biconical blue glass bead
12176  fragment of a bow brooch
12177  fragment copper-alloy pin
12178  ½ samian spindle whorl
12179  copper-alloy plate brooch
12184  copper-alloy rod
12189  amphora stamp [M. Se(mproni) Hel(iodori) C( ) (Antonine)]
12193  annular red glass bead
12194  flint flake
12625  samian stamp (on side of vessel) Cinnamus ii (AD135-180)

V09B-5  U/S
Plough-damaged material covering pit V09B-6.

V09B-6  AD213+
Pit fill of small rectangular pit cut into waggon park/storage yard.
12187  samian gaming counter
12188  3 fragments of copper-alloy

V09B-7  AD213+
Cobbled road surface of road running northeast-southwest towards ‘King Cairn Hill’.
C1338  illegible As (on top of road cobbles)
C1340  Julia Mamaea (222-235)
12198  samian gaming counter
12600  square-sectioned blue glass bead
12601  ? post-Roman pewter disc
12602  annular jet bead

V09B-8  AD213+
Cobbles of latest road surface of main road A3 (inside curb-stones).
12621  ceramic candle-stick

V09B-9  AD213+
Accumulation of soil above cobbled roadway A3 (V09B-4).
12190  cylindrical green glass bead
12197  fragment of copper-alloy
12199  copper alloy bucket handle
12603  fragment copper-alloy ligula
12604  fragment of face pot
12605  samian gaming counter
12606  fragment of copper-alloy edging
12607  mortarium stamp (illegible) (AD140-200)
12619  mortarium stamp (illegible) (AD140-200)
12631  spherical red glass bead

V09B-10  AD213-270s
Stratified material from the floor of building CXXIX.
12191  ½ ceramic spindle whorl
12192  faience melon bead

V09B-11  AD213+
Cobbled road surface of road A3, similar to V09B-4 but to east of channel V09B-18.
12624  annular glass bead

V09B-12  AD213+
Displaced cobbles and soil, just above contexts V09B-4 and V09B-8, on main roadway A3
12608 mortarium with graffito (iliterate)
12609 black glass gaming counter

V09B-13  AD213+
Accumulation of natural silt above roadway A3 (V09B-4).
C1397 illegible
C1398 disintegrated
12611 large lead weight
12613 ceramic gaming counter
12614 fragment iron file
12618 enameled copper-alloy pendant

V09B-14  AD213+
Heavily disturbed vicus structure above main road A3, just east of CXXIX.
12612 samian gaming counter

V09B-15  AD213+
Main cobbled road A2, running east-west along north side of workshop CXXVIII.
C1396 Gordian III 238-244
(trapped under latest road cobbles)
12616 samian stamp of Crassiacus (AD180-220)
12617 copper-alloy plate with nipple
12626 ½ of a spherical blue glass bead
12627 2 frags copper-alloy brooch
12628 fragment copper-alloy edging
12629 annular red glass bead

V09B-16  AD213+
Pit fill of shallow rubbish pit cutting into V09B-11.

V09B-17  AD213+
Collapsed building material from structure V09B-14.
12620 ceramic gaming counter

V09B-18  U/S
Shallow drainage ditch cutting into cobbles of road A3 (V09B-4).
12623 samian gaming counter

V09B-19  AD213+
Roadside ditch on northwest side of roads A3 and B2 (V09B-4 and V09B-7).

V09B-20  AD213+
Roadside ditch on east side of main north-south running road A3 (V09B-4 and V09B-11).
12622 bow brooch

V09B-21  AD213+
Drain fill of stone-lined drain associated with V09B-14 and V09B-17.

V09B-22  U/S
Backfill and disturbed earth on west side of modern north-south running field drain.

V09B-23  c.AD120-130
Ditch fill from major north-south running defensive ditch. ? Period V west ditch.
13705 samian stamp (on side of Dr 37 vessel) of Mercator i (AD70-110)
13752 copper-alloy key handle
12630 copper-alloy bow brooch
12632 intaglio fisherman Mercury
L09B-7 shoe
L09B-8 shoe
L09B-9 shoe
L09B-10 fragments of shoe
L09B-11 scrap

V09B-24  AD213+
Packing clay above ditch V09B-23 for drain V09B-21 and structure V09B-17 V09B-14.

V09B-25  AD213+
Packing material for V09B-17 (similar to V09B-24).

V09B-26  c.AD120-130
Lower ditch fill from 3m section through ditch V09B-23.
L09B-1 shoe
L09B-2 scrap

V09B-27  c.AD130-205
Latest cobbled road surface running east-west through west gate of Antonine annexe.

V09B-28  AD213+
Floor of heavily disturbed vicus structure fronting onto road V09B-15.
12633 ceramic gaming counter
12634 ceramic spindle whorl
12647 cylindrical green glass bead

V09B-29  pre AD213
Securely stratified material beneath apsidal wall of workshop CXXVII.

V09B-30  AD130-205
Clay bonding for south gate respond of west gate of Antonine annexe.
V09B-31  AD130-205
Cobbled berm for western rampart of Antonine annexe.
12642  square-sectioned green glass bead
12643  samian counter
12646  copper-alloy stud

V09B-32  AD130-205
Clay rampart base of west rampart of Antonine annexe.
12639  spherical blue glass bead
12640  small biconical blue glass bead
12641  spherical blue glass bead
12645  ½ a square-sectioned green glass bead

V09B-33  AD205-212
Upper part of the southwest corner of main Severan ditch.
12635  ceramic gaming counter
12636  long biconical jet bead
12637  cylindrical red glass bead
12638  copper-alloy pin
12649  square-sectioned blue glass bead
12650  bone gaming counter
12662  square-sectioned green glass bead
12679  iron javelin head
13703  samian counter
13704  small biconical green glass bead
13709  fragment of lead
13711  flint flake
13722  flint flake
13779  decorated samian handle/token
13780  lead fitting
13782  fragment of lead
13783  fragment of lead

V09B-34  AD213+
Late cobbled occupation surface north of Antonine annexe gateway.
C1558  Vespasian/Titus (AD69-81)
12644  large fragment of lead
13715  ceramic counter
13716  segmented gold-in-glass bead

V09B-35  AD205-212
Upper fill of extension to Severan ditch (cutting through rampart of Antonine annexe).

V09B-36  AD205-212
Light coloured, fine grey clay in south half of outer Severan ditch.

V09B-37  AD213+
Build up of soil on top of the main east-west road A2 (V09B-15) in the southeast of the excavated area.
12648  circular lead discs
12651  hairpin head (hand holding globe)
12652  fragment of lead
12653  samian gaming counter
12661  small biconical red glass bead
12663  spherical blue glass bead

V09B-38  c.AD130-205
Fill from a large, circular pit associated with the later second-century workshop in the west of the excavated area.

V09B-39  AD213+
Fill from a stone lined pit pit into cobbled surface of waggon park/storage yard.

V09B-40  AD213+
Shallow north-south running drain/beam slot on east side of V09B-34.
12655  sandstone slab with 2 grooves
13713  fragment of face pot

V09B-41  AD130-205
Drain fill of north-south running drain, likely to have been associated with second-century workshop beyond the east edge of the excavated area.
C1555  illegible
C1556  illegible
C1557  probably Trajan (AD98-117)
C1587  Hadrian (AD117-138)
C1588  probably Hadrian (AD117-138)
C1589  illegible
12656  copper-alloy fitting
12657  end of a ligula
12658  fragment of lead
12659  decorated copper-alloy handle
12660  long biconical red glass bead
12665  fragment of lead
12666  fragment of lead
12667  copper-alloy bell stud
12668  copper-alloy brooch pin
12669  copper-alloy spatula
12670  iron arrow head
12671  small copper-alloy pin
12672  segmented gold-in-glass bead
12673  lead weight
12674  fragment of a blue glass bead
12675  ½ a square-sectioned blue glass bead

Vindolanda Research. The excavations of 2007-2012 in the vicus or extramural settlement ('Area B')
12676 samian stamp of Iulius Numidius (AD155-200)
12681 decorative copper-alloy slide clip
12682 crucible
12683 copper-alloy pin
12684 fragment of lead
12685 2 fragments of a copper-alloy pin
12686 lead pin
12687 copper-alloy pin
12688 flat copper-alloy strip
12691 spherical blue glass bead
12692 copper-alloy belt plate
12693 square-sectioned blue glass bead
12694 patera handle
13700 square-sectioned blue glass bead
13701 spherical red glass bead
13702 samian stamp AV[-]
13708 miscellaneous copper-alloy ring
13712 cylindrical green glass bead
13717 spherical red glass bead
13718 fragment of white glass bangle
13739 samian stamp of Genetius ii (AD155-190)
13778 square-sectioned blue glass bead

V09B-42 AD213+
Main east-west running cobbled road A2, immediately north of workshops CXXVII, CXXVIII and house CXXIV (same as V09B-15).
C1559 Ant. Pius (AD138-161)
12654 copper-alloy belt plate
12664 iron rivet

V09B-43 AD213+
Patchy late cobbled surface beneath V09B-34.
12680 whetstone

V09B-44 c.AD130-205
Drain fill for southern part of same drain as V09B-41.
12689 small biconical red glass bead
12690 copper-alloy fitting
12697 cylindrical green glass bead
12698 copper-alloy belt fitting
12699 copper-alloy pendant
13706 flint flake
13707 stone gaming counter

V09B-45 AD213-270s
Soil surrounding base cobbles for main east-west road of V09B-42.
C1590 denarius of Trajan (AD97-117)
12677 small stone crucible

V09B-46 AD205-212
Mixed soils of ? Severan disturbance immediately north of Antonine annexe gateway.
12695 altar (uninscribed)
12696 samian stamp of Miccio vii (AD150-180)
13729 graffito on pot rim
13737 samian stamp of Reburrus ii (AD140-170)
13742 mortarium stamp (illegible)
13747 ceramic spindle whorl

V09B-47 AD213-270s
Foundation clay for main east-west road, A2 (V09B-42).

V09B-48 AD205-212
Sooty lens in the upper layers of the western extension to the Severan ditch.

V09B-49 AD205-212
Lower fill of the main southwest corner of the Severan ditch.

V09B-50 AD205-212
Very bottom of the main southwest corner of the Severan ditch.

V09B-51 c.AD205+
North-south running slot, cut into rampart of Antonine annexe.

V09B-52 AD213+
Heavily disturbed, mixed soils associated with the vicus levels in the northeast of the excavated area. The context overlies and therefore post-dates the Severan ditch.
13710 strip of lead
13714 fragment of face pot
13723 intaglio (cornelian with portrait)
13733 rectangular lead strip

V09B-53 AD205-212
Southwest corner of the Severan rampart.

V09B-54 AD213+
Disturbed vicus occupation layer, immediately west of Severan rampart and north of drain V09B-60.
13720 samian stamp of Cracisa (AD135-180)
13721 square samian counter
13740  enamelled copper-alloy stud
13743  engraved glass

V09B-55  AD213+
Mixed clay and cobbles, south of drain V09B-60.
C1762  M. Aurelius (AD161-180)
13719  black glass gaming counter
13724  ceramic counter
13725  small biconical blue glass bead
13738  ballista ball

V09B-56  AD213+
Fill of a post hole/pit cut into V09B-43.

V09B-57  AD130-205
Cobbled berm, between rampart and ditch of the Antonine annexe, immediately south of its west gate.

V09B-58  AD213+
Topsoil and disturbed earth above the roadway A3 (V09B-61).
C1399  illegible
13726  ½ shale spindle whorl
13727  miscellaneous copper-alloy ring
13728  lead disc
13730  whetstone
13731  copper-alloy ligula
13732  segmented blue glass bead
13734  spherical green glass bead
13735  lead hook

V09B-59  AD130-205
Original roadway cobbles running through the west gate of the Antonine annexe.

V09B-60  AD213+
Drain fill of small east-west running drain between V09B-54 and V09B-55.

V09B-61  AD213+
Main cobbled northwest-southeast running roadway A3 (similar, but north of V09B-4).
C1775  denarius of Vespasian (AD72-73)
C1816  M. Aurelius (AD161-180)
13736  samian stamp of Sacrillus (AD165-200)
13753  fragment of a copper-alloy armour scale
13754  copper-alloy pin
13755  copper-alloy belt plate
13763  samian stamp of Quadratus iii (AD155-185)

V09B-62  c.AD130-205
Ditch fill from a north-south running Antonine annexe ditch.
13741  shale spindle whorl

V09B-63  AD213+
Small area of a fawn clay occupation surface, above the road V09B-61.
13744  lead stud
13745  miscellaneous copper-alloy ring
13746  copper-alloy strip ? armour
13749  cylindrical green glass bead
13750  black glass gaming counter
13751  2 fragments of a head pot

V09B-64  AD205-212
Lower ditch fill of extension to the main Severan ditch (below V09B-35).
13748  burnt flint flake
L09B-3  right shoe
L09B-4  left shoe
L09B-5  shoe
L09B-6  shoe
L09B-12  scrap
L09B-13  shoe
L09B-14  fragments of tent

V09B-65  c.AD130-205
Fill of the drain on the south side of the main road running out of the Antonine annexe’s west gate.

V09B-66  c.AD120-130s
Ditch fill on the east side of the main road A3 (V09B-61), possibly the upper fill of V09B-23.
C1813  denarius of Vespasian (AD76)
C1814  Antoninus Pius (AD138-161)
C1815  Claudius II (AD268-70)
C1817  Hadrian (AD117-138)
C1865  Antoninus Pius (AD138-161)
C1866  Trajan (AD98-117)
13756  hexagonal blue glass bead
13757  burnt bone gaming counter
13758  tinned copper-alloy handle
13759  tinned copper-alloy rim fragment
13760  flint flake
13761  ceramic triple oil lamp
13762  lead weight
13766  tinned copper-alloy fitting
13767  fragment of copper-alloy edging
13768  copper-alloy fitting
13769  ceramic spindle whorl
13771  fragment of lead
13772  ceramic gaming counter
13773  fragment of a head pot
13774  samian stamp of Paternus v (AD150-185)
13775  copper-alloy brooch
13776  chin and neck from a pipe-clay figurine
6700   samian stamp of Paullus v (AD165-200)

V09B-67  c.AD130-205
Drain fill for the stone lined drain running through the middle of the Antonine annexe’s west gate.

V09B-68  c.AD130-205
original road surface through the west gate of the Antonine annexe (directly below V09B-59).

V09B-69  U/S
Drainage ditch, cut into the cobbled road of V09B-61 (same as V09B-18, but further north).

V09B-70  AD213+
Tightly packed cobbles of a *vicus* road/occupation surface (on top of roadway V09B-61).

C1864  M. Aurelius (AD161-180)

V09B-71  c.AD105-120
Period IV occupation layer including fragments of an oak boarded wall and squared oak posts.

V09B-72  c.AD130-205
Roadside ditch on the north side of the road leading west from the west gate of the Antonine annexe.
2010 Area B Contexts and small finds

V10B-1 U/S
Topsoil and cobbles of late building above main roadway, A3.
C1917 sestertius of Hadrian (AD117-138)
13784 stone inscription DE [...]
13787 ½ a square-sectioned blue glass bead
13793 copper-alloy brooch pin
13794 blue glass melon bead

V10B-2 AD213+
Mixed loam and silty clay below turf on east side of post-Roman drain and vicus building CXXIX.
13788 fragment of a cylindrical blue glass bead
13789 rectangular lead strip
13790 samian stamp A[-]OF
13796 samian gaming counter
13797 spherical gold-in-glass bead
13801 fragment of a copper-alloy fitting
13803 mortarium stamp of Anaus (AD120-160)
13804 samian gaming counter
13805 samian stamp of Cintusmus i (AD140-180)
13806 fragment of a copper-alloy fitting
13807 lead strip
13808 lead weight
13809 lead sling bullet
13810 lead stud
13811 lead and iron pin
13812 copper-alloy handle
13813 samian stamp – Dr ?? Small fragment base with stamp SAC [...] and graffito underneath base – [...] VV, with scored lines through bottom of the V’s.

V10B-3 AD213+
Red loam and small cobbles immediately outside west edge of vicus building CXXIX and above main northwest-southeast running road surface A3.
13785 samian stamp of Albillus i (AD155-195)
13792 square-sectioned striped glass bead
13796 copper-alloy griffin statuette
13797 piece of copper-alloy
13798 stone ? handle
13801 square-sectioned blue glass bead
13804 fragment of a blue/white glass bangle

V10B-4 AD205-213
Upper silts from inner Severan ditch.
13784 square-sectioned blue glass bead
13820 head pot
13838 fragment of lead
13842 base of ? head pot
13843 graffito on BB sherd
13852 samian gaming counter
13866 lead weight

V10B-5 U/S
Infill covering north-south running nineteenth-century field drain.

V10B-6 AD213+
Silts and sand lying on cobbles of main northwest-southeast running vicus roadway A3.
13791 miscellaneous copper-alloy ring
13795 stone lid
13821 samian stamp N[-] or M[-]
13822 samian stamp of Advocius (AD160-200)
13825 copper-alloy leaf pendant
13826 fragment of copper-alloy armour

V10B-7 c.AD130-205
Decomposed laminate and organic material from a pit in the floor of a second-century timber building, immediately north and slightly underlying vicus building CXXIX.
Note the unusually high proportion of lead objects – with the two mirror frames.
Small finds: Two lead mirror frames – one (13849) inscribed Q. Licinius Tuitinus, etc, and the other (14682) Venator fecit.

C1954 probably Hadrian (AD117-138)
13800 flint
13801 small biconical blue glass bead
13804 samian stamp on Dr 18/31R L[-]
13805 scrap lead
13806 lead weight
13807 lead pin
13809 fragment of copper-alloy armour
13811 small roll of lead
13812 flint
13813 fragment of face pot 13814 fragment of face pot 13836 fragment of copper-alloy armour 13815 fragment of a ceramic spindle whorl 13839 whetstone 13817 white glass gaming counter 13840 samian stamp on Dr 32 [-] 13818 fragment of lead 13843 square-sectioned green glass bead 13819 copper-alloy brooch pin 13845 shale palette fragment (see 13841 above)

V10B-9 U/S Drain fill from post-Roman drain, outside the northwest edge of vicus building CXXIX. 13859 long biconical green glass bead

V10B-10 AD213-290s Fill from and oval pit, immediately outside the northeast edge of vicus building CXXIX. 13810 decorated flue tile 13816 graffito on BB fragment –

V10B-11 AD213-270s Small area of surviving clay floor in southwest corner of vicus building CXXIX.

V10B-12 AD213+ Mixed clay and loam below turf in west end of 5m western extension trench. 13826 amphora stamp A() P(ortus) FE()

V10B-13 AD213+ Fill from a small north-south running ditch, on immediate west side of main northwest-southeast running vicus roadway A3. C1930 sestertius of Trajan 13827 mortarium stamp of Amenus (AD110-155)

V10B-14 U/S Drain fill from post-Roman drain running southwest in 5m extension trench. Same as V10B-9.

V10B-15 AD213+ Small pit cut into red loam/clay of V10B-3, immediately northwest of vicus structure CXXIX.

V10B-16 AD213+ Shallow drainage channel, running east-west in 5m extension trench.

V10B-17 AD213-270s Loose black/grey loam on east side of main northwest-southeast running roadway, A3, and the west edge of vicus structure CXXIX.

Pottery, etc: A very large collection. Samian – a slim scatter of early material (Dr 27 & 18), but mainly much later, including Dr 43’s and dominated by worn Dr 33’s. Samian alone looks like late second century or even early third century. Fragments of many colour-coated wares, and some BB – the few fragments of lids and carinated bowls with reeded rims are dwarfed by the later material, including mortaria that must be close to AD 200. Many fragments of glass vessels, some slag and relatively few Dressel 20’s (26 only). This collection gives the impression of dumped material, around AD 200, before the construction of the stone vicus building.

Leather: L10B-05 scrap L10B-52 shoe L10B-57 shoe L10B-60 shoe

Fragment of a ceramic spindle whorl 13808 fragment of a white glass bangle 13814 ceramic spindle whorl 13815 fragment of a ceramic spindle whorl 13817 white glass gaming counter 13818 fragment of lead 13819 copper-alloy brooch pin

V10B-8 AD213+ Mixed soils, below later building floor of V10B-1 and above main road A3 (V10B-6). C1904 Hadrian C1911 ? Hadrian C1918 second century 13802 fragment of a ceramic spindle whorl
13864  medical instrument
13872  lead sheet
14641  fragment of a ceramic oil lamp
14696  stamp on Dr 18/31 of Biracautus (AD125-150)

V10B-18  AD213+
Soot and mixed fawn clay in west end of 5m extension trench (immediately below nineteenth-century field drain system).
13830  samian gaming counter
13834  unidentified copper-alloy object

V10B-19  AD130s-205
Similar to pit V10B-7, but securely sealed by packing clay of vicus structure CXXIX’s floor.
13832  copper-alloy stud
13833  samian stamp of Atilianus i (AD170-200)

V10B-20  pre-AD213
Bank of thick blue grey clay, curving southwest, beneath vicus structure CXXIX, and flanking pit V10B-7’s western edge.
14611  copper-alloy strip

V10B-21  c.AD120-c.130
Silty clay and mud from top of ? Period V ditch.
13844  faience melon bead

V10B-22  c.AD85-c.AD130
Fill from a northwest-southeast running drainage ditch (underlies V10B-7 and V10B-21).
C2064  denarius of Domitian (AD81-96)
13887  bone gaming counter
13889  flint
13890  iron fitting
13891  enamelled copper-alloy stud
13893  fragment of an amber bead
13894  ceramic spindle whorl
13897  copper-alloy stud
14642  fragment of a ceramic crucible
14678  ½ a faience melon bead

Leather:
L10B-01  shoe
L10B-02  shoe
L10B-03  shoe
L10B-06  shoe
L10B-08  shoe
L10B-09  shoe
L10B-12  shoe
L10B-13  shoe
L10B-15  shoe
L10B-16  shoe
L10B-17  shoe
L10B-33  shoe
L10B-50  shoe
L10B-51  shoe
L10B-04  scrap
L10B-07  scrap
L10B-25  scrap
L10B-11  offcuts
L10B-14  patch

Wood:
W10B-01  handle
W10B-02  bucket stave
W10B-03  mug stave
W10B-05  fitting
W10B-06  stave with hole
W10B-15  wheel spoke
W10B-16  fragment of bowl

V10B-23  pre-AD213
Silty grey clay from immediately west of the curving stone drain on the east side of main road, A3.
13855  faience melon bead
6701  samian stamp on Dr 31 [-]PIRIA[-]

Leather:
L10B-10  shoe

V10B-24  AD205-AD213
Overspill from western edge of inner Severan ditch.
13862  segmented jet bead
6702  samian stamp on Dr 18/31 or 31 [-]

V10B-25  c.AD85-c.AD130
Organic material on top of tightly packed cobbled surface on east side of V10B-22 ditch edge.
(Small amount of contamination from Antonine annexe ditch above.)
C2000  Trajan (AD98-117)
C2001  probably Trajan (AD98-117)
13865  copper-alloy brooch
13867  iron file
13896  copper-alloy brooch
13898  ink open nib
13899  shale loom weight
14603  mirror frag
14604  samian stamp of Albucius ii (AD145-175)
14605  copper-alloy stud

Leather:
L10B-19  shoe
L10B-25  scrap
Wood:
W10B-07 fragment

V10B-26 U/S
Plough scatter from large area northeast of the vicus structure CXXIX.
C2048 Marcus Antonius
C2049 Faustina I (AD138-141)
13876 ear ring
13879 pentagonal green glass bead
13880 ½ spherical aqua glass bead with blue and yellow wave applied
13892 copper-alloy spoon handle
13895 base of glass bottle with stamp
14610 samian graffito
14612 fragment of a shale plate
14615 stone counter
14617 samian stamp on Dr 33 MA.LLVII
14618 cylindrical green glass bead
14619 stone lid

V10B-27 AD213+
Shallow roadside ditch on the eastern edge of vicus roadway, A3.
No finds

V10B-28 pre-AD213
Silt filled circular depression, immediately south of the south wall of vicus building CXXIX (likely to pre-date the main NW-SE roadway).
13874 samian stamp [-]INV (retrograde)
13875 fragment of lead
14607 fragment of lead
14628 fragment of lead

V10B-29 AD213-270s
Soot and fawn clay occupation surface below V10B-3, including an orange clay hearth.
C1981 possibly Trajan (AD98-117)

V10B-30 pre-AD213
Very mixed sands, silts and clays overlying the cobbles of V10B-25.
13878 miscellaneous copper-alloy ring

Wood:
W10B-04 stave

V10B-31 c.AD130-213
Fill of compressed mud from a drainage ditch, running northeast-southwest, that cuts the ditch of V10B-22.
13883 sheet of copper-alloy ? armour
14627 small iron reaping hook
14644 metal strip
14649 copper-alloy ? armour strip

V10B-32 AD213+
Mixed clays inside rough circle formed by stones of ? drain above outer Severan ditch.
C1991 M. Aurelius (AD161-180)
13884 graffito on samian
13886 faience melon bead
13888 ceramic spindle whorl
14643 ceramic colander
14653 fragment copper-alloy
14654 fragment white glass bangle
14655 samian stamp of Doeccus i (AD170-200)
14661 fragment ceramic spindle whorl

V10B-33 pre-AD213
Small area of cobbles with a post pad, slightly below and to the east of the east edge of the main vicus road, A3.
13885 copper-alloy pin

V10B-34 AD213-270s
Fill of a small stone-lined well/water tank outside west edge of vicus building CXXIX.
No small finds

V10B-35 AD213+
Loose loam and clay with several dressed stones, including cupped coping stones, above V10B-32.
14629 ceramic spindle whorl
14634 stone counter
14635 stone counter

V10B-36 c.AD105-120
Compressed mud and laminate on top of thick blue clay between V10B-22 and V10B-31.
14633 decorated iron pin
14647 spout from ceramic ? baby’s bottle
14660 amphora graffito

Leather:
L10B-32 off-cut

Writing Tablets:
T10B-01 ink

V10B-37 AD130-213
Loam and disturbed stones from immediately north of east-west running post-Roman drain, north of vicus building CXIX. Heavily burnt.
C2002 Julia Domna (AD193-211)
14601 long biconical blue glass bead
14694 copper-alloy spoon
14701 samian graffito on 2 lines [...] RON [...] GIT [...] 
14702 amphora graffito 
14703 faience melon bead 
14707 bone gaming counter 
14708 bone handle 
14709 stone mixing palette 

Leather: 
L10B-23 shoe 
Pottery, etc: large quantity. 

V10B-38 c.AD105-205 
Laminate on east lip of ditch V10B-22. 
14608 amphora stamp L. A() F(lacci, -lacciani) P(ortus) (AD162-192) 
14613 bone gaming counter 
14692 iron stylus pen 

Leather: 
L10B-18 shoe 
L10B-21 shoe 
L10B-22 shoe 
Wood: 
W10B-08 fragment 

V10B-39 AD213+ 
Topsoil and material on top of cobbled road B5, running northeast from main vicus road A3. 
C2021 Trajan (AD98-117) 
14602 copper-alloy stud 
14606 ½ a square-sectioned blue glass bead 
14609 fragment of lead 
14620 fragment of lead 
14621 stone counter 
14636 spherical gold-in-glass bead 
14637 copper-alloy brooch 
14638 ceramic gaming counter 
14639 fragment of intaglio 
14640 lead disc 
14657 fragment lead 
14699 fragment copper-alloy armour 

V10B-40 c.AD85-130 
Sand and silt on top of tightly laid cobbled surface underlying V10B-25. 

V10B-41 AD213+ 
Drain fill from a northeast-southwest running drain that had been cut by well V10B-34. 
No finds 

V10B-42 c.AD130-205 
Flooring of a timber building, immediately east of fork in the post-Roman stone drain. 

Leather: 
L10B-40 offcuts 
Wood: 
W10B-12 shaped piece of wood 
W10B-13 comb 

V10B-43 c.AD105-120 
Slightly decomposed sooty laminate with timber posts, underlying V10B-17. 
14614 copper-alloy brooch pin 
14625 rim of a fine glass vessel 
14631 fragment of a faience melon bead 
14632 greater part of a large, grey three-handled facepot 
14677 copper-alloy fitting 
14691 graffito on Dr 31 – B [...] 
14693 iron pin 
14698 stamp on Dr 18 of Flavius Germanus (AD85-120) 
14704 copper-alloy spoon (complete) 
14705 iron joiner’s dog 
14706 iron stylus pen (complete) 

Leather: 
L10B-48 
L10B-53 
L10B-54 
L10B-55 
L10B-59 child’s shoe 
L10B-61 
L10B-56 scrap 

Wood: 
W10B-17 boxwood comb 
W10B-20 boxwood comb 
W10B-22 bung 
W10B-23 bung 
W10B-19 handle 
W10B-21 wedge 
W10B-24 box (fragment) 
W10B-10 miscellaneous shaped 

Pottery analysis: 
Samian – included frags of Dr 18, 27 & 37’s, with a rare (for Vindolanda) Dr 67, suggestive of very early second-century deposition. 
Mortaria – frags of 2 bowls (grey and pale buff), both early – similar to Gillam 240 & 242. 
Pots and bowls – numerous grey vessels, all similar to early second-century material. 
Flagons – parts of at least 2 cream single handled vessels. 
The large face-pot flagon (SF 14632 above) and the greater part of another very large grey flagon and a smaller narrow-mouthed vessel.
A few small frags of roughcast wares. 
F frags of Dressel 20’s (16) and brick (11). 
But, unusually, little evidence of carinated vessels, 
lids and rustic wares. However, no BB wares at 
all, and the deposit as a whole would be 
appropriate for a date soon after AD 100 and 
before the AD 120’s.

V10B-44  AD213+
Fill of a small gravel filled pit, cutting into top of 
ditch V10B-31. 
14616    samian stamp of Cuccillus i 
(AD145-180)

V10B-45  c.AD105-120
Laminated carpeting and ? horse manure from a 
timber building, immediately north of fork in post-
Roman stone-built drain. The floor is of a grey 
coloured clay and contains a substantial amount of 
leather off-cuts and scrap.
14622    square fragment of copper-alloy 
14626    copper-alloy stud 
14630    glass spout 
14652    samian stamp on Dr 18 of Peregrinus 
(AD65-85) 
14658    copper-alloy stud 
14663    graffito on dark grey jar, below the 
rim – […] GETI TV […] 
14667    iron sewing needle.

Leather:
L10B-26 shoe 
L10B-28 shoe 
L10B-30 shoe 
L10B-31 shoe 
L10B-36 shoe 
L10B-42 shoe 
L10B-44 shoe 
L10B-45 shoe 
L10B-46 shoe 
L10B-47 shoe 
L10B-27 patch 
L10B-29 off-cuts 
L10B-35 off-cuts 
L10B-38 off-cuts 
L10B-39 off-cuts 
L10B-41 off-cuts 
L10B-43 scraps 
L10B-49 scraps 
L10B-34 square fragment with strap holes

Wood:
W10B-9 boxwood comb 
W10B-14 boxwood comb 
W10B-11 rope

Pottery, etc.:
Samian – small collection, included a Dr 27, Dr 
18’s and Dr 37’s. 
F frags of 4 carinated bowls with reeded rims (2 
grey, 1 buff and 1 cream), with 2 carinated bowls 
without reeded rims (grey). 
Several brown vessels, including one very small. 
F frags of 2 cream flagons; 2 rustic ware body frags; 
numerous dark grey pots and bowls, with a few 
fawn wares; small frags of roughcast vessels. 14 
fragmentss of Dressel 20’s; 2 small frags glass. 
No BB – and strangely, no mortaria. 
One of the larger groups of pottery, and hinting 
strongly at deposition between AD 100 and 
the 120’s.

V10B-46  c.AD100-205
Cobbled road/floor surface, immediately east of 
V10B-43 and directly beneath V10B-5. 
14623 samian stamp of Tauricus (Tauricius) 
(AD150-180) 
14624 copper-alloy strip

V10B-47  AD213-270s
Hard packed fawn clay floor of vicus building 
CXXXIX, at junction of vicus roadways A3 
and B5. 
C2047    Antoninus Pius (AD138-161) 
C2090    Hadrian (AD117-138) 
14646    fragment of a blue glass bead 
14648    fragment of a blue glass bead 
14650    ½ an annular blue glass bead with 
white wave applied 
14651    two segmented gold-in-glass beads 
14662    ½ ceramic spindle whorl 
14664    square of lead 
14665    fragment of lead 
14668    copper-alloy latch 
14671    copper-alloy pin 
14672    square-sectioned blue glass bead 
14675    samian stamp of Cucalus 
(AD140-170)

V10B-48  c.AD130-205
Fill of sands and silt from ? Antonine ditch, which 
overlies earlier ditch V10B-22. 
14695    pictorial graffito

V10B-49  c.AD130-205
Fill from a small pit cutting into floor of V10B-42 
and V10B-36 beneath eastern fork in post-Roman 
stone drain.
V10B-50  AD213+
Shallow gully curving southwest, under post-Roman stone drain and possibly overlying ditch of V10B-31.

V10B-51  c.AD100-130
Floor of wattle walled timber building directly below V10B-29.
- 14669  iron bar
- 14686  samian stamp of Vitalis ii  (AD70-100)
- 14688  mortarium stamp of Matugenus  (AD80-110)

Leather:
- L10B-58  shoe

Wood:
- W10B-18  barrel lid

V10B-52  AD213+
Soot and sand cutting through eastern side of roadway B5 (V10B-39).
- 14645  oblate turquoise blue glass bead
- 14656  stone counter
- 14659  samian stamp on Dr 37 cursive signature
- 14666  scabbard chape
- 14674  fragment of a copper-alloy plate
- 14676  fragment of a copper-alloy belt fitting

V10B-53  AD213+
Oval pit filled with stones, immediately outside of the southwest corner of vicus building CXXIX (V10B-11).

V10B-54  c.AD105-120
Pit full of leather off-cuts cut into the floor of second-century timber building V10B-45.

Leather:
- L10B-37  several off-cuts

V10B-55  c.AD130-205
Soot and charcoal filled depression under roadway of V10B-58.
- 14670  samian gaming counter
- 14673  samian gaming counter
- 14697  samian gaming counter

V10B-56  c.AD100-205
The actual cobbled road fabric of V10B-46.
- 14679  samian stamp of Patricius i  (AD65-90)
- 14683  square-sectioned green glass bead

V10B-57  U/S
Sand and silt fill of a shallow northeast-southwest running drainage gully.

V10B-58  AD213+
Cobbles set on clay of northeast-southwest running road B5, directly under V10B-39.
- C2071  Faustina II  (AD161-175)
- C2091  possibly Trajan  (AD98-117)
- 14684  copper-alloy hairpin/medical instrument
- 14686  fragment of a blue glass bangle
- 14689  bone gaming counter
- 14690  samian stamp of Citugenus  (AD155-180)

V10B-59  c.AD130-205
Earth and grass roots on top of fired sandstone flags from a small hearth.

V10B-60  AD213-270s
Heavily burnt pink/orange clay in northwest corner of excavation trench. Hearth on the floor of building CXXXIX.
2011 Area B Contexts and small finds

V11-01B  c.AD213-300
Removal of turf and overburden of topsoil above the remains of the partially excavated site XXI.
c2245 Constantine I, Soli Invicto, Follis (AD306-315)
16416 copper-alloy ring
16503 square-sectioned blue glass bead
16519 segmented gold-in-glass bead
16521 iron hook
16531 copper-alloy stud
16533 copper-alloy bracelet
16534 stone lid
16535 copper-alloy strip
16536 spherical turquoise blue glass bead
16537 stone lid
16550 flint flake
16570 green glass bead

V11-02B  c.AD213+
Narrow trench to the south of site XXI on the roadside filled with loose spill and rubble – the fill of the roadside drain to the south of the building.
c2244 Gallienus, Apollini Cons Aug (AD258-268)
16504 copper-alloy terminal
16528 stone lid

V11-03B  c.AD213+
Below the topsoil of 1B and down on to the flagged and clay floor of the building site XXI.
c2247 Late sestertius, probably C3 (c.AD193-235?)
c2248 Constantine II, Caess. N ost. Caess, Ticulum, (AD320-325)
c2252 denarius of Severus Alexander (AD222-235)
16543 joiner’s dog
16544 ballista ball
16546 joiner’s dog
16547 T-shaped lift key
16551 copper-alloy stud
16554 small stone lid
16555 iron scabbard chape
16557 ‘L’ shaped lift key
16560 fragment of a blue glass bead
16562 partial quern stone
16564 large iron key handle
16565 very corroded blade
16567 copper-alloy bracelet fragment
16569 iron ring from an iron chain
16573 copper-alloy stud
16574 very small copper-alloy bracelet
16576 brooch (iron)
16577 copper-alloy small eagle statue
16582 cylindrical green glass bead
16584 stone lid
16587 brooch
16588 copper-alloy pin
16590 iron penannular brooch
16594 face pot nose
16597 copper-alloy pin
16600 gaming counter
16601 graffiti
16602 bracelet (iron)
16603 iron bracket
16604 stone lid
16612 cylindrical green glass bead
16613 iron plate
16615 ‘T’ clamp
16616 lead weight with II inscription
16617 iron bracket
16618 brick/tile stamp ‘L’

V11-04B  c.AD130-270s
Area between west wall of site XXI and earlier defensive wall to the west.
c2249 denarius of Marcus Aurelius (AD161-180)
16520 whetstone
16529 small biconical blue glass bead
16530 samian gaming counter
16559 hemispherical jet bead
16589 face pot
16593 gaming counter
16595 stone lid
16605 gaming counter

V11-05B  c.AD130-212
Cobbled road immediately to the west of site XXI.
16532 stone lid
16552 worked bone
16553 stone gaming counter
16607 partial corroded blade
16611 ballista ball
16614 stone lid
V11-06B  c.AD130-212
Heavy clay rampart to the west of the cobbled road described in 5B and below an earlier defensive wall.
16542  stone lid
16545  stone lid
16548  sling shot
16556  samian stamp on Dr.18/31 [-]
16558  unidentified iron artefact
16561  diamond faceted blue glass bead

V11-07B  c.AD213+
Thick silt at the base of the drain described in V11-2B, sitting on top of flagstones. The silt is some 30-40cms thick.

V11-08B  c.AD130-205
Heavy grey silt sitting on the top of the ditch to the west of the defensive wall running north-south, immediately to the west of the third-century bathhouse. This context is over a metre deep in places.
16540  stone lid
16541  whetstone
16586  samian stamp of Sacrillus (AD165-200)
16598  samian stamp of Marcus v (AD160-210)
16609  graffiti
16610  ballista ball
L2011-11  shoe

V11-09B  c.AD130-205
A thin layer of laminated carpet material set within the contexts V11-8B. This varies in thickness between 40cms to 8cms and is half way up the ditch.
16596  spindle whorl
L2011-10  shoe
L2011-12  shoe
L2011-13  shoe
L2011-14  shoe
W2011-7  wooden pulley wheel

V11-10B  c.AD213-300
Turf and topsoil down to the clay foundation of the rampart mound to the west of the Antonine annexe defences and above the silted over ditch.
16571  flint flake
16583  stone lid

V11-11B  c.AD130-212
Robber trench cut through V11-8B and V11-4B in a south west to north east direction. A deep trench filled with mud and soil.
16599  gaming counter

V11-12B  c.AD165-212
At the northern end of site XXI the floor turns to a heavy, thick yellow clay. Below this clay is another floor surface.
c2250  denarius, perhaps C2, fragments ?C2
c2251  denarius, probably of Marcus Aurelius (AD161-180)
c2253  sestertius C2, perhaps of Hadrian/Pius (AD117-161)
16572  square-sectioned aqua glass bead
16575  copper-alloy terminal
16578  enamelled disk brooch
16579  lead scrap
16580  unidentifiable copper-alloy artefact
16581  samian stamp of Martius iv (AD155-190)
16608  iron blade

V11-13B  c.AD120-130
Silt from the top of the fort ditch directly below.
V11-10B
16563  small copper-alloy strip
16566  large corroded iron artefact unidentifiable
16568  corroded iron bar

V11-14B  c.AD120-130
Dark soil with pottery and bone inclusions settled below V11-14B and above V11-9B.
2012 Area B Contexts and small finds

V12-1B  c.AD213+
Loose topsoil above a cobbled area, which has a mixture of cobbles, small amounts of broken pottery and some charcoal. Above the filled in remains of a second-century ditch.
   16620  pottery base turned into a lid or counter
   16639  iron point

c2268  Victorinus/Tetricus I (AD268-273)
c2269  denarius of Septimius Severus (AD194-197)
c2272  As of Hadrian (AD117-138)
c2273  dupondius, probably of Trajan (AD98-117)
c2274  denarius of Septimius Severus (AD202-211)
c2275  As of Hadrian (AD117-138)
c2281  denarius of Julia Domna (AD196-211)
c2283  copper-alloy stud

c2255  sestertius of Hadrian (AD119-121)
16619  clay pipe bowl (post-Roman)
16623  copper-alloy decorative stud
16625  partial blade
16626  unidentified rusted iron (possible blade)
16628  unidentified corroded iron
16634  corroded iron blade
16639  ? iron cheek piece from a helmet
16640  iron bracket
16649  copper-alloy scrap
16657  lead off-cut
16661  copper-alloy fragment

c2254  denarius of Septimius Severus (AD195)
c2262  denarius, probably of Vespasian (AD69-79)
c2263  denarius, probably of Antoninus Pius (138-161)
c2264  probably Constantius II (AD353-358)
c2265  probably Radiate fragment (AD260-273)
c2266  denarius of Caracalla (AD213)

V12-2B  U/S
Hard packed rubble & soft soil mix some 10-20cm below the turf.

V12-3B  U/S
Mixed cobbles set in yellow/white re-deposited clay 30cms below the turf. This area is immediately to the west of the third-century baths.

V12-4B  U/S
Turf and topsoil to the north of the Antonine annex wall where it has been robbed out.

V12-5B  U/S
Turf and topsoil over third-century remains to the west of the path dividing V12-01B and V12-05B.
16902 graffito on samian
16907 intaglio
16913 ½ a blue glass melon bead
16916 enamelled fitting
16917 long biconical red glass bead

V12-6B c.AD165-212
Foundation material, below the level of a flagstone floor adjacent to a vicus foundation to the west of the Antonine annexe wall. Dark and burned soil with many pottery inclusions. The context depth is some 35-45cms and terminates on the heavy clay of the rampart below.
16627 possible blade (partial)

V12-7B c.AD165-270s
Silt level below V12-4B, west of rampart and Antonine annexe wall.
16624 iron ‘T’ clamp
16638 ceramic gaming counter

V12-8B AD212-270s
Cobbled floor level below V12-1B. A lot of pottery from this context as opposed to V12-1B.
16629 whetstone

V12-9B c.AD165-212
Black and red friable material below foundations of flagstone floor set above the Antonine annexe ditch.
16630 whetstone
16633 tile stamp LEG VI V
16643 whetstone

V12-10B c.AD213-270s
Fill of a water tank, some 40cms deep. Same soil as V12-4B.

V12-11B U/S
Turf and topsoil of the backfill (c.AD1930) from the area surrounding the aqueduct channel first exposed by Hedley in the 1830s.
c2256 As of Hadrian (AD117-138)
c2258 denarius of Nero (AD66-67)
16645 flint flake
16647 bottom of a glass perfume bottle
16652 copper-alloy fragment
16653 fragment of lead
16654 whetstone
16656 graffito on Dr 31R samian bowl
16658 copper-alloy fragment
16667 copper-alloy stud

V12-12B c.AD160-212
Burnt material below the foundation of a Severan and vicus building, situated on top of a flagged surface from the Antonine period. A continuation of the 2011 context in this area.
16635 iron ring (fitting)
16636 iron axe head
16637 cheese press (ceramic)
16648 ? old penny (heavily corroded)

V12-13B c.AD130-212
Thick clay foundation below V12-12B floor surface level, in the north east corner of the same building.
c2257 sestertius of Hadrian (AD125-138)
c2259 denarius of Septimius Severus (194-211)
c2260 sestertius of Faustina I posth (AD141-161)
16641 heptagonal jet bead
16642 small silver ring
16646 copper-alloy plate brooch
16650 top of a crossbow brooch
16670 copper-alloy stud

V12-14B AD213-270s
Loamy topsoil fill of a drain in the south side of the vicus building lying over the top of the Antonine annexe ditch. Contains a substantial volume of pottery, but no coins.
16644 heavily corroded iron artefact

V12-15B c.AD213-360s
Loam and burnt fill of shallow ‘U’ shaped ditch cut through the boulder clay of the Antonine annexe rampart and wall.
16655 fragment of lead

V12-16B c.AD213+
A firmly laid cobbled surface below the badly disturbed level of V12-5B, and which has suffered significant plough damage.

V12-17B c.AD165-205
Fill of a drain below V12-12B dividing two buildings below the Severan level. The drain is
three courses high and the masonry is consistent with Stone Fort 1’s small block construction style. It is full of iron pan.

c2261 denarius of Septimius Severus
(AD200-211)

16662 tile stamp LEG VI V on an imbrex.
Two frags from V12-3B join this. Note the unusual letter E.

16663 tile stamp LEG VI V
16679 cylindrical blue glass bead

V12-18B c.AD165-205
A cobbled area to the south of the V12-17B drain and therefore outside the buildings that the drain had divided. A layer of tightly packed cobbled stones with some clay and mixed flags above.

V12-19B c.AD400+
Post-Roman backfill. Below plough soil, dark and clear soil layer which is extremely wet and butts onto the road surface of V12-16B to its east as it dips down into this level. Very little pottery.

16665 fragment of lead
16674 intaglio – ? Achilles
16682 small biconical blue glass bead
16687 mortarium (repaired fragment)
16688 faience melon bead
16698 fragment of lead
16714 mirror fragment
16730 copper-alloy penannular brooch
16783 ½ ceramic spindle whorl
16894 lead-filled piece of copper-alloy

V12-20B c.AD213-270s
The edges of a pit, cutting through the Antonine rampart to the east of the Antonine annexe wall and to the west of the bath-house. Next to a vacant altar plinth. Filled with loose soil and building stones.

16720 fragment of jet finger ring

V12-21B c.AD213-270s
Down to a layer of cobbled stones over the Period V west ditch. A definite undisturbed level with Roman pottery and other artefacts set into silty mud. Below V12-19B.

16669 fragment of lead

V12-22B c.AD160-205
Soft silt sitting at the top of the Antonine annexe ditch.

V12-23B AD400+

Dark soil and rubble in a square pit or hole, roughly 2mx2m down to a flagged capping or base stone. Below V12-20B.

V12-24B AD400+
Below the flagstone of V12-23B. A thin lens of dark soil sitting on heavy clay, interpreted as Antonine annexe rampart material.

V12-25B c.AD213-290s
Roadside drain, filled with grey silt up to 40cms deep.

c2267 denarius of Julia Maesa (AD218-222)
16671 copper-alloy pin
16686 copper-alloy lock stud
16699 samian stamp (probably not – very small frag of a Dr.37, more likely to be just decoration)

V12-26B c.AD100-c130
Semi-organic material from a 0.5m wide channel cut through fawn coloured clay immediately north, but underlying the third-century aqueduct channel.

W2012-6 decorated barrel stave

V12-27B c.AD205+
Below V12-11B. Appears to have been a small pit cut through the rubble surface of V12-11B.

V12-28B c.AD213-270s
A context with very black soil and some rotten wood and waste below V12-19B – to be merged with V12-21B.

c2303 ½ d of George V (1916)
16675 samian stamp of Reburrus ii
(AD140-170)
16676 mortarium stamp of Sullon(us,-ius,iacus) (AD100-140)
16681 whetstone
16689 samian stamp of Reginus vi
(AD155-180)
16709 flint flake
16769 ceramic spindle whorl

V12-29B c.AD160-212
Grey silt below V12-28B.

16728 samian stamp of Doeccus i
(Doeccus) (AD170-200)
16716 samian stamp [-] (illegible)
16738 copper-alloy ligula
16755 samian stamp of Miccio vii
(AD150-180)
16897 fragment of lead
16906 faience melon bead
L2012-14 shoe

V12-30B c.AD213-270s
The removal of the cobbles and rubble fill at the base of V12-11B to the north of the aqueduct channel.
16693 brooch
16756 ceramic gaming counter
16817 iron object with tang ? trowel fragment

V12-31B c.AD105-140
A steeply cut ditch that looked like a pit on initial inspection through the natural boulder clay running in a north-south direction to the west of the westernmost aqueduct channel block. Organic material, but very clean with no bone or pot.
16683 flint flake
W2012-1 peg

V12-32B pre-AD130
Very mixed silt around 3 flagstones, west of Eric Birley’s trench from 1930.
16685 brooch pin
16836 fragment of lead
16852 flint flake
16867 iron ‘T’ pin
16908 fragment of lead

V12-33B AD120-c130
Large ditch, with mixed laminated material and silt. The ditch runs north-south, below two smaller Antonine ditches and immediately west of the vicus road B6.
16680 glass base (see also 16701)
16701 fragment of fine glass bowl
*Same as 16680
16702 bowl of a glass ? perfume flask
16737 copper-alloy fitment
16745 spindle whorl
16760 ballista ball
16761 fragment of lead
16762 copper-alloy spatula/ligula
16820 copper-alloy finger ring
16823 metal hook
16853 flint flake
16854 iron bracket
16864 copper fitment
16875 iron fitting
16876 lead weight
L2012-1 scrap
L2012-2 tent panel

V12-34B AD213+
Roadside drain on the west side of vicus road B6 (V12-16B). Shallow, about 35cms deep, with a rubble and clay base and filled with cobble stones to its rim after use.
c2276 denarius of Septimius Severus (AD208)
c2277 denarius of Antoninus Pius (AD140-143)
c2278 As, probably of Marcus Aurelius (161-180)

V12-35B c.AD165-c205
A small ditch cut through the V12-33B ditch to the north of the third-century stone aqueduct channel.
16700 fragment of lead
16703 graffito on samian PRI
16715 flint flake
16722 ceramic gaming counter

V12-36B AD213+
A section through the vicus road B6 (V12-16B). Cobble and silt make up this surface which is almost 70cms deep and includes a significant amount of pottery.
16697 copper-alloy brooch pin

V12-37B c.AD130-213
Laminated material below V12-29B but to the north of the later stone aqueduct channel blocks.
16721 graffito on brick – probably a wavy decoration on the edge of the brick.

V12-38B Post Roman
Turf and topsoil to the east of the Romano-Celtic temple CXXXI, and to the west of the channel stones from the aqueduct.
c2279 Radiate (AD260-273)
c2285 dupondius, probably of Trajan (AD98-117)
c2286 denarius of Severus Alexander (225-228)
c2289 Constantine I (AD330-335)
c2290 Constantius II (337-340)
c2291 House of Valentinian (AD364-378)
c2293 House of Constantine (AD335-341)
c2299 Radiate (AD260-273)
c2302 Republican denarius (c80-31BC)
c2329 sestertius of Antoninus Pius (AD138-161)
c2330 sestertius, probably of Antoninus Pius (AD138-161)

16708 fragment of lead
16717 copper-alloy ? bead
16723 base of a wine amphora
16726 decoration/stamp on sherd of grey pot – very unusual.
16734 stone sling shot
16740 worked antler tine
16750 copper-alloy stud
16753 Dr 37 – an O, but probably just decoration
16765 copper-alloy belt buckle
16766 copper-alloy belt plate
16776 flint flake
16777 mortarium stamp Felicioles (AD110-140)
16779 samian stamp on Dr 33 of Sedatianus (AD160-200)
16780 faience melon bead
16781 whetstone
16784 knife blade
16785 graffito – traces of 2 letters on a small fragment of Dressel 20 rim
16787 fragment of lead
16790 flint flake
16792 flint flake
16793 decorated copper-alloy fitting
16795 flint flake
16796 copper-alloy finger ring
16797 ceramic gaming counter
16800 ceramic gaming counter
16801 stone counter
16803 graffito
16806 fragment of lead
16821 lead disc/token
16827 copper-alloy finger ring
16828 knee brooch
16831 flint flake
16832 fragment of lead
16835 fragment of a glass bangle
16847 flint flake
16849 lead pin
16850 lead pin
16857 fragment of lead
16862 fragment of lead
16868 fragment of lead
16873 fragment of lead
16878 fragment of lead
16880 copper-alloy fragment
16901 miscellaneous iron ring
16904 miscellaneous copper-alloy ring
16910 ligula/probe
16922 samian stamp [-]

V12-39B c.AD130-205
A cut through the relatively clean turf to the west of the ditch bank of 30B, a depth of 45-60cms to boulder clay foundation.
16710 dog paw print on tile – very fine example – probably from the early bath-house
16713 spear head

V12-40B c.AD130-212
Below cobbled road, B7, to the south of Eric Birley’s trench and aqueduct channel. The make up of the road surface in this area, but above any black and organic material.
c2332 sestertius of Hadrian (AD125-138)
c2333 As of Marcus Aurelius (AD161-180)
c2334 denarius of Marcus Aurelius as Caesar (AD140-144)
16719 copper-alloy buckle
16923 fragment of a faience melon bead
16924 blue glass melon bead
16925 fragment of lead
16930 finger ring
WT2012-1 stylus

V12-41B c.AD130-212
A layer of burnt laminated or organic material similar to V12-28B but further to the south of this context, almost parallel to the northeast side of site XI.
16705 blue glass melon bead
16706 ceramic gaming counter
16724 base of a glass ? perfume bottle
16725 graffito on BB2 sherd (?) BB1 \-) DIORIS{-
16731 ½ a faience melon bead
16736 blue glass melon bead

V12-42B Post-Roman U/S
Sand and silt combined with mixed material from backfill of JB trench from 2001.
16711 square-sectioned blue, white and red glass bead
16712 fragment of lead
V12-43B  pre-AD130s
Organic matter in a shallow trench cut through natural clay to the south of the most westerly surviving channel block of the third-century aqueduct. A depth of 40cms by 50cms wide.
c2280  dupondius of Antoninus Pius (AD153-154)
16751  copper-alloy fitment
16754  tripod or quadrupod vessel – light carinated fawn ware – half of bowl – probably quadrupod.
16763  copper-alloy finger ring
16766  joiner's dog

V12-44B  c.AD90-130
A deeply cut trench, or narrow ditch, south of the same feature explored by Eric Birley in 1930 and to the immediate west of V12-43B. Organic material and mud filled.
16718  flint flake

V12-45B  AD213+
A large area of sand and silt to the south of a small roadway, B8. Possibly a pit, filled with pottery including a wine amphora. Below V12-38B.
16758  bone knife handle

V12-46B  AD213+
Expanded area of sand and silt, to the south and west of V12-45B and below 38B. This deposit has yet to have a defined perimeter.
16735  fragment of lead
16752  ceramic oil lamp (almost complete, fine example)
16775  votive pot, very unusual
16778  samian stamp on Dr 27g of Memor (AD60-90)
16798  decorated copper-alloy belt fitting
16799  flint
16819  lead
16872  flint flake

V12-47B  AD130-205
Top of the earlier aqueduct channel from the Antonine period, rubble and clay covering a finely built wall.
16739  bone knife handle

V12-48B  AD213-270s
To the south of the roadway B7, similar dark soil, but not covered by a cobbled surface.
16733  copper-alloy pin
16855  ceramic counter
16858  flint flake
16874  samian stamp on Dr 18 [-]
16889  fragment of lead tubing
16933  iron needle
16938  samian stamp of Flavius Germanus (AD85-120)
16945  copper-alloy finger ring
16946  ligula probe
16949  spherical faience bead
16955  graffiti on amphora

V12-49B  AD213+
Fill of drain to the southeast of site XI and cut through the roadway of V12-16B. A deeper drain than the others, filled with silt and pottery and bone and fewer cobble stones.
c2282  denarius of Trajan (AD103-111)

V12-50B  AD160-212
Same as context V12-47B, i.e. the top of earlier aqueduct channel from the Antonine period, rubble and clay covering a finely built wall.

V12-51B  AD213+
Actual fabric of road B7, running northwest-southeast to the south of the stone aqueduct channel.
c2283  As of Severus Alexander (under Elagabalus) (AD221-222)
c2284  Constantine I (AD323-324)
16741  fragment of a penannular brooch
16742  copper-alloy pin/probe
16743  amphora stamp OLEASTRO (third century)
16744  intaglio (nicolo paste)
16747  ceramic gaming counter

V12-52B  AD213+
Circular bank of mixed yellow clay to the north of V12-46B. Surrounded by rough dressed stones on its western edge.
16749  intaglio PAN

V12-53B  c.AD130+
An extension of V12-40B to the south, but here confined to a shallow ditch. Dark organic material mixed in with re-deposited clay.
16746  fragment of lead

V12-54B  AD213+
To the south of context V12-46B. A mixture of soil and silt in a northwest-southeast running trench which cuts V12-46B.
V12-55B  AD213+
Dark earth cut through the surface of V12-46B filled with loose soil.

V12-56B  c. AD120+
Silt and stone fill of a clay-lined pit, above and to the west of V12-44B (steep narrow ditch). Immediately below east-west running roadway, B7 (V12-51B).
16818  mortarium stamp (illiterate)

V12-57B  AD130s+
A broad north-south running ditch flanked by two more north-south running ditches to the south and below the third-century aqueduct channel. Dark organic earth fills the ditch to a depth of 50-60 cms.
16757  black glass gaming counter
16767  copper-alloy brooch
16932  copper-alloy finger ring

V12-58B  c. AD130-205
Below the level of the foundation of the Antonine aqueduct channel. Turf and clay foundations with a mixture of crushed sandstone and pebbles.
16768  fragment of a glass bangle

V12-59B  AD213+
Tightly packed cobbled road, B8, running northeast-southwest to the east of the Romano-Celtic temple.
16791  flint flake

V12-60B  AD213+
Loam fill of a shallow 'U' shaped ditch on the southeast side of road B8 (V12-59B).

V12-61B  c. AD205+
A large, circular pit dug through yellow boulder clay (V12-38B). The pit is filled with packed turf/earth and rubble.

V12-62B  c. AD213+
Dark grey silt material cut through and below context V12-46B. Appears to have been a pit, which contained a great deal of pottery.
16782  bow brooch

V12-63B  AD213+
Silt and clay fill of a circular feature at the eastern end of ditch V12-60B, by east edge of vicus roadway B8.
16786  fragment of a glass bangle

V12-64B  AD213+
Wide and poorly constructed drain built with very large boulders and rubble. A soft grey silt lines the inside of its fill and it is full of Roman pottery.

V12-65B  AD213+
Grey washed silt material very similar to V12-64B (may once have been drain overflow material).
16788  flint flake
16794  flint flake

V12-66B  AD130+
Loam and mixed clay directly under turf and cutting into thick natural yellow clay. East-west running trench immediately north of water tank CXXX.

V12-67B  c. AD130+
Silty earth inside water tank CXXX, the south end of which has been disturbed by a modern 1970s field drain. Pottery, which is certainly Roman, has come from this context. Also, the small block construction appears to be Antonine in date.
16789  fragmentary mortarium stamp of Sullon (us-ius-iacus) (AD100-140)

V12-68B  AD213+
Below V12-63B. Very black soil and earth with bones and boulders in the fill. Circular in nature and possibly a well.

V12-69B  AD213+
Possible roadside drain or aqueduct, filled with rubble and clay.
c2292  House of Constantine (AD330-335)

V12-70B  U/S
Roughly rectangular pit immediately east of water tank CXXX, filled with light grey clay with several mixed inclusions. ? disturbance from previous excavations.

V12-71B  pre-AD165
The remains of a very large oven, immediately to the west of V12-69B. 5 litres of soil removed. A great deal of pottery found in this context. The later road, B8, covered the remains of this structure.

V12-72B  c. AD130+
Grey silt with some pottery and bone inclusions sitting within water tank CXXX, below V12-67B.
V12-73B  c. AD 213+
Silty grey material with some pottery and bone inclusions. A possible pit or shallow north-south running ditch on the south side of road B8.

V12-74B  AD 130+
Grey silt filled cut to the west of water tank CXXX (V12-72B), running in a north-south direction. The cut of the ditch is steep at 45 degrees and has small stones and a rubble fill in its base.

V12-75B  c. AD 130+
A pit cut through the natural clay to the south of the roadside well of V12-68B. Mixed clay and dark soil with some pottery and bone inclusions and a layer of rubble fill.

V12-76B  c. AD 130+
A small, circular pit below V12-46B and filled with dark soil (although not organic). The pit is to the south of the later road drain and has been cut through the natural boulder clay.

V12-77B  c. AD 130-212
A dark silty/organic mix of soil below V12-40B which is on top of a yellow clay layer (2.5cm deep). The black material is sealed by this clay layer.

V12-78B  AD 205+
Silt and stone fill of channel cut into the clay with some pottery and bone inclusions below V12-38B.

V12-79B  AD 213+
Rubble filled top of a pit.

V12-80B  AD 213+
A possible drain cut through V12-46B, same sort of washed material as V12-46B.

V12-81B  c. AD 130+
A mixed stone and silty sand level below V12-38B and at northern end of drain 64B.

V12-82B  AD 130+
Silt/stone mix below V12-38B, above silt layer southwest of drain (V12-64B) and south of V12-81B.

V12-83B  AD 213+
The pit fill below the rubble fill of V12-79B, soft dark earth with pottery and bone fill.

V12-84B  U/S
Cut for modern drain material though northern end of Roman oven (V12-71B).

V12-85B  c. AD 130-205
Silt material directly south of small ditch cut V12-56B and below V12-40B. The silty material is bounded by a very thin clay edge to both sides.

V12-86B  AD 213+
Mixed clay beneath topsoil, immediately north of visitor footpath past south front of Romano-Celtic temple CXXXI.

V12-87B  U/S
? probably modern ditch cut through yellow natural clay. Runs east-west past the north end of water tank CXXX. Cuts across V12-74B.

V12-88B  c. AD 130-212
Cut through clay running southeast from roadside drainage ditch (V12-60B). Full of silt and small stones, some pottery and bone.

V12-89B  c. AD 130-212
North-south cut through clay filled with silt to the east of V12-88B, and cut through by V12-60B.
V12-90B pre-AD130
Fill of a ditch cut through clay running northeast-southwest. Directly below V12-32B.
16856 copper-alloy needle
L2012-11 shoe
WT2012-2 stylus

V12-91B AD213+
Small, stone-lined drain to the immediate east of Romano-Celtic temple CXXXI with a clay base and cobbled road to the north of the drain. Sandy/silt and stone fill with iron pan deposits.

V12-92B AD213+
Small circular black burned area directly below V12-38B and surrounded by V12-86B.

V12-93B AD213+
Pit fill of a circular pit cutting through V12-86B.

V12-94B AD130-165
Below V12-71B and below the oven. Blackened earth fill over 20cms deep with many pottery inclusions. 8 litres of soil samples taken.

V12-95B pre-AD213
The removal of the cobbled road surface B8, to the east of Romano-Celtic temple CXXXI and south of water tank CXXX. Cobbles set into soft silty sand. Some pottery and bone.

V12-96B AD213+
Removal of third-century road fabric of road B6 in 2x2m wide sections between west lip of Period V fort ditch and the modern visitor path.
c2326 As of Marcus Aurelius (AD161-180)
16884 lead plug
16886 brooch
16887 fragment of lead
16890 ceramic gaming counter
16891 fragment of lead

V12-97B AD213+
Turf and topsoil adjacent to wells and water tanks XII and XIII, to south of Romano-Celtic temple and footpath.
c2331 As of Domitian (AD85-86)
c2335 denarius of Caracalla (AD215)
16896 miscellaneous copper-alloy ring
16903 copper-alloy pendant
16905 copper-alloy fitment (? buckle)
16912 hexagonal green glass bead
16914 ½ ceramic spindle whorl
16915 segmented blue glass bead

V12-98B c.AD105-120
Shallow trench cut through the natural clay to the east of the cells of the Romano-Celtic temple CXXXI, and below the road surface B9 beside the temple.

V12-99B c.AD130+
A small linking ditch between V12-57B and V12-53B. A shallow cut through re-deposited boulder clay, filled to a depth of 35cms with soggy black soil.

V12-100B c.AD105-120
Very black soil in a steep sided cut (45 degree edges) through natural boulder clay to the immediate west of V12-44B. Pottery and bone inclusions present. This is probably a water management channel.

V12-101B AD105-c120
Below V12-97B. A broad (3m wide) and steep ‘V’ shaped ditch running east-west. Dark soil with many pottery inclusions and a lot of bone. Northern ditch of Period IV fort.
c2336 sestertius of Hadrian (AD117-138)
c2337 sestertius of Trajan (AD103-111)
16900 large fragment of lead-filled copper-alloy
16929 jet cylinder
16935 whetstone

V12-102B pre c.AD213
A rubble-filled shallow, flat bottomed ditch 5m to the east of the Romano-Celtic temple CXXXI. It runs north-south with a width of 3m. Silty soil below the rubble capped fill. This ditch is very different to V12-101B.
c2328 dupondius, probably of Marcus Aurelius (AD161-180)
16918 mortar stamp (double) of Anaus (AD120-160)
16920 mortar stamp of Anaus (AD120-160)
16927 lead decorative fitment
16934 copper-alloy brooch

V12-103B c.AD130s+
V12-44B cut through a wider and later ditch, which falls west to east into a large circular pit (V12-109B). Clearly a water channel. The material in this ditch is semi-organic.
V12-104B c.AD130s+
The continuation of V12-103B as it cuts through
earlier channels V12-43 and V12-57B. The ditch
continues east into the large circular pit (V12-
109B) which is full of laminated material and silt.
16899 mortarium stamp of Anaus
(AD120-160)
16911 fragment of silver/lead
16919 mortarium stamp of Vorolas?
(AD140-200)

V12-105B AD213+
A crude drain, running southeast from the
southeast corner of Romano-Celtic temple
CXXXI. Silty grey clay fill (20cms deep) with a
rough line of stones making two rough edges.
16898 ? fragment of face/head pot

V12-106B c.AD105-c120
Grey silt of earlier ditch than V12-101B, which cuts
through it. This grey silt lines a much larger east-
west ditch which is over 2.5m deep and 5m wide.
Period IV northern fort ditch.
16909 copper-alloy ring
16921 whetstone
16926 pin (from a large buckle)
16928 iron fitting
L2012-16 shoe
L2012-17 shoe
L2012-18 shoe
L2012-22 shoe
L2012-23 shoe
L2012-61 scrap

V12-107B AD213+
A small, deep (60cms deep by 50cms wide) cut
through the natural clay bank and into the V12-
101 ditch from the north.
16941 stone drum (pestle?)

V12-108B c.AD130-212
An abortive attempt at sinking the top of a water
channel to the south of V12-89B. Abandoned due
to water pressure from below which created
excessive flooding. Silt and organic material
encountered.

V12-109B c.AD130-205
A large circular pit to the east of V12-104B. This
feature is filled with clean laminate and mud
although there are scraps of leather and shoes
preserved in the material as well as bone.
16962 knife handle (bone)

L2012-19 Shoe
L2012-53 Shoe
L2012-60 Scrap

V12-110B AD213+
The removal of the road surface (cobble stones set
in clay) to the south of the Romano-Celtic temple
and to the immediate north of V12-101 ditch.
16931 lead scrap
16936 samian stamp of Genetius ii
(AD155-190)
16937 miscellaneous copper-alloy ring

V12-111B Twentieth century+
A pit in which a farmer has buried a cow. This is
cut through V12-97B and partially through V12-
106B on its northern end.

V12-112B AD213+
A shallow ditch, the continuation of V12-105B
to the east which continues to cut through
the boulder clay and deepens (to 50cms) and
broadens out (45cms). Pottery and bone recovered
from its fill.
16933 miscellaneous copper-alloy ring

V12-113B c.AD105-c120
Below the clay base of context V12-57B (30cms
below) is up to 50cms of mixed laminated carpet
material, filled with bone, pottery, leather and
artefacts. This material is situated on a baked clay
and flagstone floor set within a room which has
wattle & daub walls and is semi-circular.
16939 samian stamp on Dr 18 of Bassus iii
(AD85-120)
16942 lead ring
16948 ligula probe
16951 bolt head
16952 iron needle
16953 whetstone
16956 graffiti on samian
16958 brooch
16959 joiner’s dog (iron)
16960 handle
16963 whetstone
L2012-20 shoe
L2012-21 shoe
L2012-31 shoe
L2012-42 shoe
L2012-56 scrap
W2012-8 barrel bung with central hole
W2012-9 wooden ? pommel
W2012-11 bung
V12-114B  c.AD105-c120
Organic material on north and west sides of V12-113B. Outside the wattle & daub fence and set within a steep sided cut, which was obviously a drain outside the building.
16940  faience melon bead
16944  armour fitment
16943  armour fitment
16947  \textit{ligula} probe
16950  copper-alloy stud
16966  serrated iron blade (saw?)
16967  samian stamp on Dr 15/17 of Iullinus i? (AD65-110)
16965  copper-alloy stud
L2012-25  shoe
L2012-27  shoe
L2012-28  shoe
L2012-30  shoe
L2012-32  shoe
L2012-35  shoe
L2012-46  shoe
L2012-57  scrap
W2012-10  comb
W2012-12  comb
W2012-13  comb
WT2012-4  stylus
L2012-29  shoe
L2012-33  shoe
L2012-34  shoe
L2012-36  shoe
L2012-37  shoe
L2012-38  shoe
L2012-39  shoe
L2012-40  tent
L2012-41  tent
L2012-43  shoe
L2012-44  shoe
L2012-45  shoe
L2012-47  shoe
L2012-48  shoe
L2012-49  shoe
L2012-50  shoe
L2012-51  tent
L2012-52  shoe
L2012-54  shoe
L2012-55  shoe
L2012-58  scrap
W2012-14  unidentified wooden artefact
WT2012-3  stylus

V12-115B  c.AD105-c120
Organic material in a corridor to the south of room V12-113B. Wattle and daub fences standing up to 40cms high. A mass of leather and other artefacts had been deposited within this space, including over 30 shoes.
16954  copper-alloy needle
16957  graffiti on samian
16961  iron lance head
16964  samian stamp of Patricius i (AD65-90)
16968  \textit{ligula} probe
L2012-24  shoe
L2012-26  shoe
L2012-29  shoe
L2012-33  shoe
L2012-34  shoe
L2012-36  shoe
L2012-37  shoe
L2012-38  shoe
L2012-39  shoe
L2012-40  tent
L2012-41  tent
L2012-43  shoe
L2012-44  shoe
L2012-45  shoe
L2012-47  shoe
L2012-48  shoe
L2012-49  shoe
L2012-50  shoe
L2012-51  tent
L2012-52  shoe
L2012-54  shoe
L2012-55  shoe
L2012-58  scrap
W2012-14  unidentified wooden artefact
WT2012-3  stylus

V12-116B  c.AD120-130
Re-deposited clay, probably the up-cast from the nearby Period V fort ditch to the east. The clay overlies the timber building of contexts V12-113B and V12-115B to a depth of over 50cms. The clay has some pottery and bone inclusions set within it, as well as some scrap leather near its base.
L2012-59  scrap

Unstratified
16651  blue glass bead ? possibly Roman
16811  copper-alloy strip (found inside fort during consolidation work)
Vindolanda Research.
The excavations of 2007-2012 in the vicus or extramural settlement (‘Area B’)

Justin Blake