

# MARKING OUT SPACE: IRON AGE PIT ALIGNMENTS AND ROMAN ENCLOSURES AT CHELLASTON FIELDS, SWARKESTONE

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## SUMMARY

*Open area excavation was carried out by University of Leicester Archaeological Services (ULAS), at Chellaston Fields, Swarkestone, South Derbyshire, ahead of residential development. The Historic Environment Record for Derbyshire recorded the presence of cropmarks associated with prehistoric or Roman rural settlement in the surrounding fields and within the site itself. The recent work revealed archaeological features of prehistoric and Roman date, and these were the focus of the excavations. Towards the north-eastern part of the site, excavation focused on a double pit alignment running for 100m east to west, with a further group apparently running broadly north-west to south-east across the landscape. The form of the alignment, along with a small assemblage of associated pottery, places the features within the Early Iron Age period. Romano-British settlement was identified on the north-western edge of the site and was characterised by a series of ditches forming a boundary and an enclosure, with further significant features including a yard surface, a possible building and a stone-lined structure; probably an oven or corn-drier. A metalled trackway running from north to south across the site was also revealed. The archive for the site will be deposited with Derby Museums and Art Gallery with accession number DBYMU: 2012.222*

## INTRODUCTION

University of Leicester Archaeological Services (ULAS) carried out a programme of archaeological investigation for Persimmon Homes North Midlands at Chellaston Fields, Swarkestone, South Derbyshire (NGR: SK 383 296). The work was undertaken in response to residential and commercial development and included a trial trench evaluation of the site followed by an open area excavation. A group of cropmarks had been recorded across the site from aerial photography, while further cropmarks, representing an enclosure and a pit alignment, were also located in neighbouring fields.

## LOCATION AND GEOLOGY

The site covers c. 30ha just south of Chellaston, within the parish of Swarkestone (Fig. 1), close to Junction 3 of the A50 which borders the southern edge. The land rises from around 50m aOD in the south-western corner of the site to around 63m aOD at the northern edge and to around 75m aOD at the eastern edge. The underlying geology of the site comprises Branscombe Mudstone Formation, overlain by Oadby Diamicton in the south, with clay, silt and sand to the east and west.

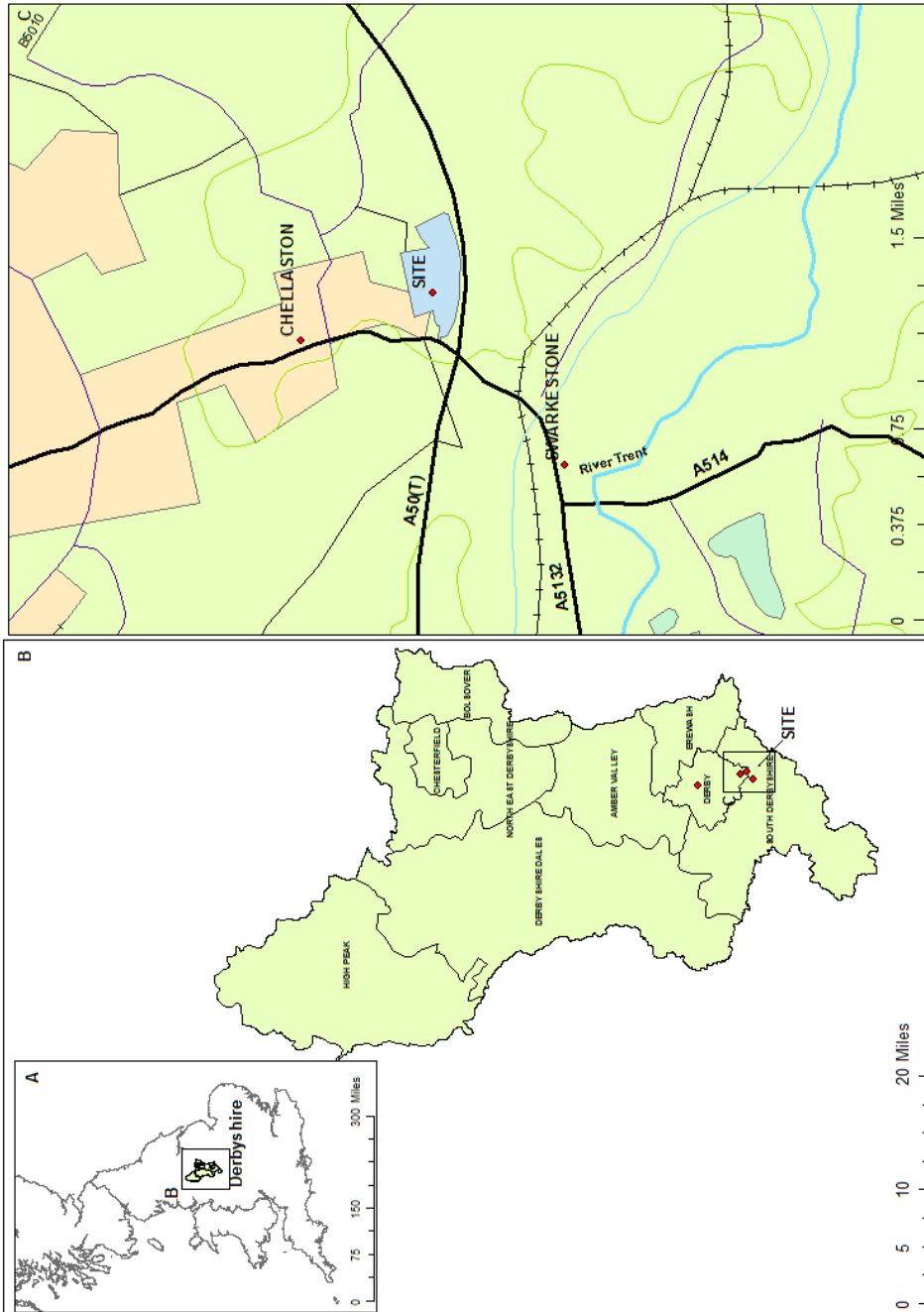


Fig. 1: Site location plan.

## ARCHAEOLOGICAL BACKGROUND

The site lies within the Trent Valley, an area very rich in archaeological sites although most of these lie around 1km south and west of the excavation area. The Derbyshire Historic Environment Record (HER) showed that a group of undated cropmarks identified from aerial photographs, lay within the proposed development area. The cropmarks have been interpreted as enclosures and a possible ring ditch of probable prehistoric date (HER Ref No. MDR4392). However, closer inspection of the record suggested that the aerial photographs referenced within this entry may in fact refer to other sites outside the application area. Observation of recent digital imagery by Google Earth has indicated some possible linear cropmarks within the north-eastern area of the site that suggested the presence of ditch systems.

Further cropmarks have also been recorded on a high promontory *c.*100m east of the site, interpreted as a multi-period prehistoric site with overlapping features consisting of a possible ring ditch, sub-circular enclosures, part of a sub-rectangular enclosure and a possible pit alignment (MDR4404). The alignments of the linear features suggested that this activity may extend into the application area.

Geophysical survey across the development area identified linear and rectilinear anomalies in the north-western corner of the site that were interpreted as remains of settlement enclosures (Biggs 2012, 7). Additional anomalies across the site suggested possible evidence of other enclosure ditches, but surprisingly no evidence of the previously observed cropmarks was recorded. Subsequent trial trenching confirmed the presence of significant archaeological deposits including pit alignments and a Roman enclosure, both located within the northern half of the site.

## RESULTS OF THE EXCAVATION

Excavation was undertaken in two areas following the results of the trial trenching (Fig. 2). In the north-eastern part of the site a section of the pit alignment was excavated and to the west, the area containing Roman enclosures formed the focus for detailed excavation.

### **The North-Eastern Area**

The L-shaped north-eastern excavation area was located towards the eastern limit of the development site, 30m to the east of the other excavation. The area contained a series of prehistoric boundary features comprising a double pit alignment running east to west across the site, a short section of a single pit alignment running south-east to north-west and a scatter of isolated pits that were not obviously connected to either boundary (Fig. 3). Two large plough furrows also crossed the area, on a similar orientation to the double pit alignment, and undoubtedly had removed some of the evidence for the earlier features.

The double pit alignment was projected from the eastern edge of the excavation area and revealed to a point around 105m to the west, where it appeared to stop. The boundary consisted of two sinuous lines of pits arranged broadly parallel with each other and lying approximately 2.5m apart. A possible access point through the alignment lay some 22m from the eastern edge of the area, where a *c.* 5.5m gap occurred in otherwise regularly-spaced pits.

Within the excavation the double pit alignment was formed of 66 pits (32 in the northern row and 34 in the southern row) measuring between 0.80m and 2m in diameter, the size differences perhaps reflecting varying truncation of the pits by later ploughing. Individual



Fig. 2: Plan of the development site showing the excavation areas.

pits in each row were regularly spaced, lying approximately 2.5m from one another, measured from centre to centre (Plate 1). The pits in the alignment also had remarkably consistent characteristics; all were sub-circular in shape and excavation revealed profiles with sloping edges and flat, or slightly dished bases. There was some complexity to the pit fills, with better-preserved features containing two or three different deposits, suggesting that they had filled gradually over a long time. Smaller examples contained fewer fills, which is probably another example of information having been removed by later truncation. Pit alignments are not usually renowned for containing artefacts but several of these pits contained Iron Age pottery, helping to date use of the boundary, and a small assemblage of flint flakes was also recovered. The character of the flint technology indicates a Neolithic or Bronze Age date for the flakes found in the pits, so they were likely to have been within the topsoil when the pit alignment was originally constructed, later becoming incorporated into the pit fills.

A further short alignment of four pits running south-east to north-west lay to the north of the double pit alignment and presumably continued beyond the stripped area, where the two boundaries may have joined. The pits of this boundary varied in shape between sub-rectangular and sub-rounded and were generally smaller than those to the south, measuring between 0.42 – 0.51m in diameter and up to 0.57m deep. They had similar profiles and sequences of infilling and contained Iron Age pottery and flint flakes.

Between the pit alignments at the eastern end of the area a group of four pits did not seem to fit the pattern of either boundary, and may represent a separate episode of activity. The pit shapes were variable, with circular and sub-rectangular examples, and one pit contained a distinctive dark fill, in contrast to the features of the pit alignment that were generally lighter.

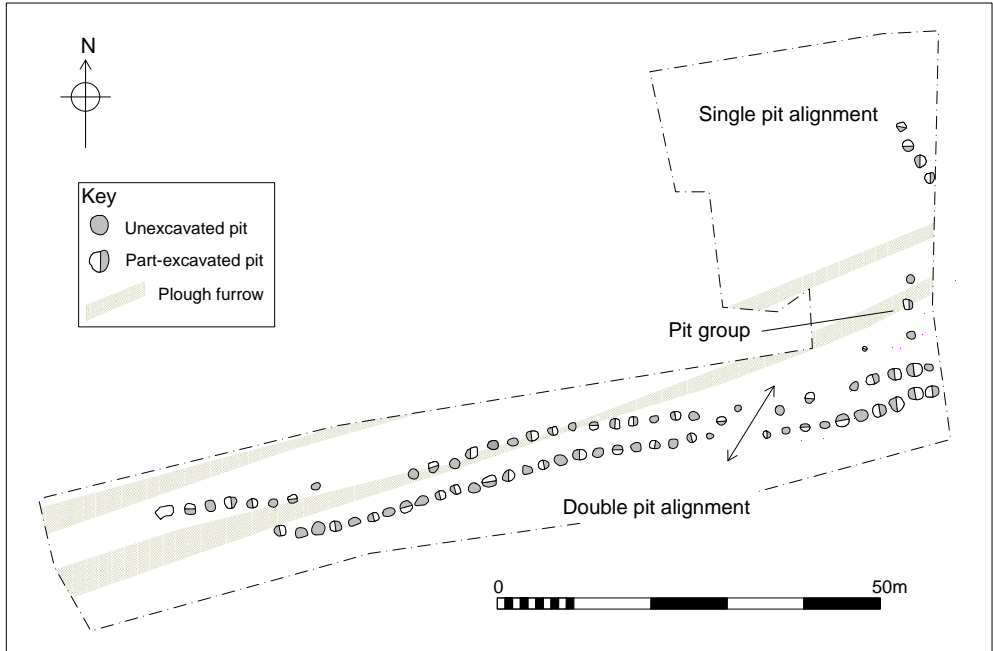


Fig. 3: The north-eastern area showing the pit alignments and other features.



Plate 1: View along the length of the double pit alignment facing west.

This particular pit also contained a distinctive assemblage of finds including a relatively large amount of Iron Age pottery, comprising 59 sherds from two vessels and fourteen flint flakes.

### The North-Western Area

The second excavation area was located close to the north-western edge of the site, 30m to the west of the pit alignments. Stripping of this area revealed a complex of Roman remains including at least one clear enclosure and other associated ditches that may have formed elements of a wider enclosure system beyond the limit of the excavation (Fig. 4). As with the other excavation, plough furrows and modern land drains frequently crossed the area, leading to truncation of the archaeological features.

Dating from the pottery recovered suggests a broad 2nd-3rd century date for the activity represented, although stratigraphic relationships between the features suggest that they are the end result of a sequence of reorganisation episodes within that period.

#### *The Earliest Boundary Ditches and Associated Activity*

The earliest activity is represented by a series of ditches that appear to represent the southern end of a large enclosure measuring at least 85m across. The southern side of this enclosure was represented most fully by a ditch that crossed almost the full length of the excavation area on an east-west alignment. This was a fairly substantial feature measuring up to 2m wide by 0.80m deep with a V-shaped profile. In general, the ditch contained a single fill, perhaps suggesting it was deliberately backfilled at the end of its useful life. Soil within the ditch contained Roman pottery including Derbyshire ware, mortaria and colour-coated ware, as well as animal bone and lead-working waste.

The eastern side of the enclosure was defined by a north-south aligned ditch measuring

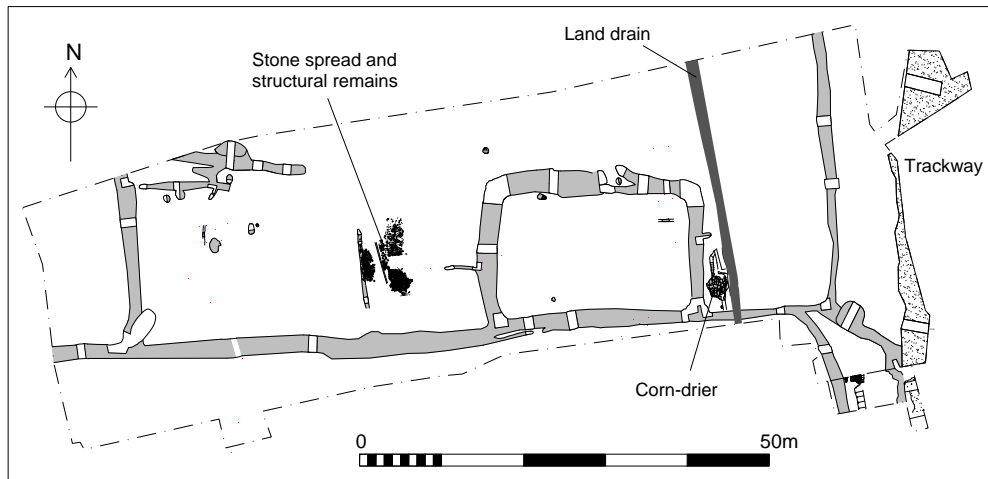


Fig. 4: The north-western area showing the Roman enclosures and associated features.

between 0.50m – 1.60m wide by 0.50m – 0.60m deep with a U-shaped profile. In contrast to the east-west ditch, this boundary had been recut along its length at some point. A similar assemblage of finds was recovered from this ditch, comprising Derbyshire ware and Samian pottery, but it also contained a silver denarius of Domitian (minted AD 90-91) and a rich assemblage of environmental remains including cereal grains and chaff.

Two ditches branched out from the south-western corner of the enclosure, but they were revealed only for a short distance within the excavated area. It is possible that they represent either additional drainage features to take overflow water from the main enclosure ditch, or further enclosures. The northernmost of these ditches was cut through by a pair of large irregularly shaped pits, containing Roman pottery and animal bone, indicating continued activity after the ditch had gone out of use.

Towards the western side of the enclosure was another north-south ditch with a steep-sided U-shaped profile measuring c.1.56m wide by 0.52m deep. This feature may have represented two boundary phases although the evidence was unclear, and overall the ditch filling was very homogenous. Finds recovered from this boundary included a reeded hammerhead mortarium sherd, dating to the late 3rd or early 4th century, and a fragment of Central Gaulish Samian of mid 2nd century date, as well as animal bones which included cattle and horse remains.

Two east-west oriented ditches lay at the northern end of the area, close to where the north-south ditch ran under the excavation edge. Both were relatively narrow in comparison, but contained similar assemblages of pottery, suggesting they were broadly contemporary with the other ditches. It is possible that they formed sub-divisions within the larger enclosed area, but their position on the edge of the excavation makes interpretation difficult.

At the very edge of the excavated area two intercutting pits were associated with pottery, animal bone and a small amount of iron working waste. To the south of the ditches a loose scatter of pits or large post holes was identified. They contained few finds and formed no recognisable pattern but testify to low key and perhaps sporadic activity in this part of the enclosure.

A metalled trackway, running north-south, lay to the east of the large enclosure and consisted of a layer of compacted rounded pebbles and cobbles of varying sizes; it measured up to 8.8m in width by 0.24m deep. Three exploratory trenches traced the track for 44m southwards. Roman pottery sherds, an early Roman coin and part of a brooch were all recovered from the trackway surface, which was overlain by a dark silty trample or disuse layer, which also contained Roman pottery sherds.

#### *Later Reorganisation and Associated Features*

A phase of reorganisation is indicated by the addition of a smaller enclosure attached to the inner edge of the southern, east-west ditch and with a north-facing entrance. This rectangular enclosure measured approximately 27.5m by 19.6m, giving an internal area of c. 340 square metres, and lay on an east-west alignment (Fig. 5).

The enclosure ditch consisted largely of a single phase, but in some sections two or more recuts were evident. At its greatest width at the northern end, the ditch measured 3.25m wide and at its narrowest, close to the junction with the main east to west ditch, it was around 1.41m wide. Excavation revealed a broad U-shaped profile containing one or two fills from which a range of 2nd-3rd century Roman pottery, animal bone and vitrified clay hearth lining was recovered.

The enclosure's entrance was defined by opposing butt-ends of the ditch, slightly west of

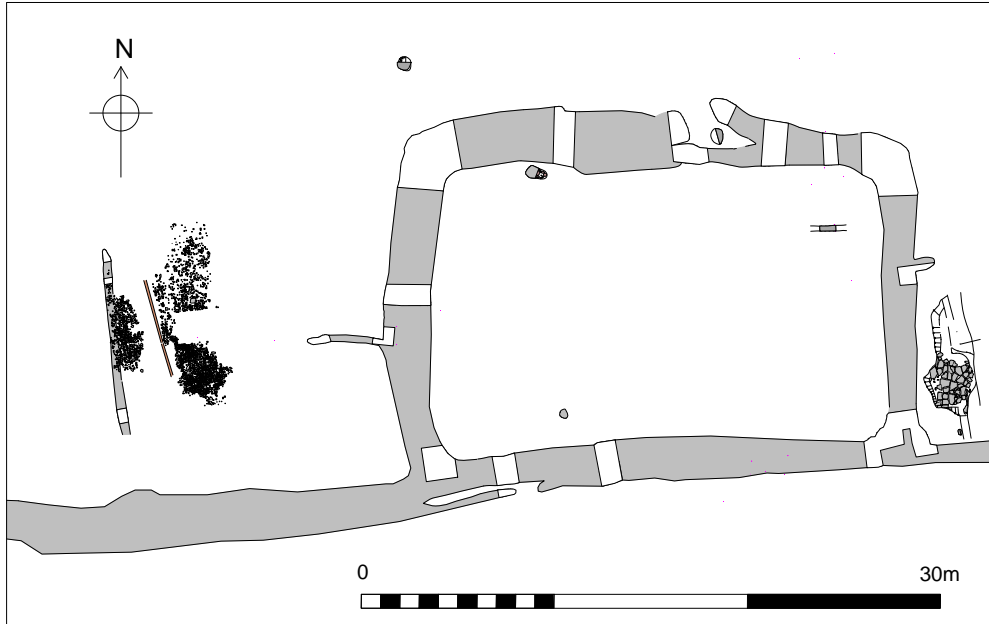


Fig. 5: Detailed view of the smaller Roman enclosure and associated features.



Plate 2: Detailed view of the enclosure entrance showing the complex sequence of recut ditches.



centre on the northern side. This area was more complex in nature than other parts of the enclosure, with a sequence of recuts and associated post holes indicating several episodes of entrance remodelling (Plate 2). Pottery dating to the later 3rd and 4th centuries, including a Nene Valley mortarium and a grey ware bead and flange bowl, the latest-dated wares from the assemblage, indicated that activity associated with this smaller enclosure carried on slightly longer than in other areas of the site.

Outside the enclosure a spread of stone, possibly the remains of a yard surface, lay approximately 8m from the western ditch. The layer had been truncated by field drains and furrows but where it survived best it measured approximately 7m x 5m in extent and consisted of a well-laid stone surface made mainly of limestone with some gritstone fragments (Plate 3). Embedded within the surface were sherds of pottery some of which were quite large and well-preserved and consisted mostly of Derbyshire ware and grey ware types, with five Derbyshire ware jar rims present. The grey wares included jars and bowls, with a rim sherd from a Lower Nene Valley grey ware bead rim bowl providing a date from the middle of the 2nd century into the 3rd century. Remaining material comprised small quantities of shelly ware, oxidised ware, grog-tempered grey ware and pre-Derbyshire ware, along with some Samian and a Mancetter-Hartshill mortarium. The mortarium had a date range from the middle of the 2nd century to the early/middle 3rd century, tying in with the Lower Nene Valley grey ware and probably the Derbyshire ware. There were also fragments of Roman tile, including tegula reused within the metalled surface.

After the surface had gone out of use a layer of trample had accumulated over it and this also contained a large amount of pottery including mostly Derbyshire ware and grey ware jars and bowls, of forms similar in character to black burnished wares dating from the middle of



Plate 3: The stone spread.



Plate 4: The possible corn-drier.

the 2nd century and into the 3rd century (Holbrook and Bidwell 1991). Also recovered was a small amount of Samian, small quantities of black burnished, oxidised, white and shelly wares, along with a Nene Valley mortarium dating from the middle of the 2nd century onwards. This layer also contained a sheep bone, several pieces of iron nail and some lead-working waste, as well as the rim of a small glass vessel, probably a narrow-necked bottle, which is likely to date from the late 1st or early 2nd century.

Running along the western edge of the surface, for around 10m, was a narrow linear feature, that may have been a beam slot associated with a building, although no other structural evidence survived. The slot was 0.45m wide and was around 0.18m deep with steep sides and a flattish base. Stone from the adjacent surface appeared to cover part of the infill of the slot around the middle of the feature, which may suggest that the surface was later in date,

although no dating evidence was found in the slot.

Just outside the south-east corner of the enclosure a possible oven or corn-drier lay beneath a spread of dark silty soil containing a concentration of pottery and animal bones, including one of the latest dated sherds of pottery; a grey ware bowl from the 3rd-4th century. Fragments of Roman tile were also recovered from the layer. A linear feature was revealed beneath the layer, 7m long by 1.43m at the northern end, broadening out to 2.71m at the centre, and then narrowing to a small gully-like feature, measuring 0.44m wide at the southern end (Plate 4).

Excavation of this feature revealed a steep-sided shallow cut, containing at its centre a surface of large and medium sized flat stones forming the base of an oven or kiln. The stones comprised flat gritstone and sandstone pieces that had been laid without bonding material in a single course. Most of the sandstone pieces were laid on their sides at the southern end of the feature forming a basic flue. Despite having the appearance of an oven or kiln there was no sign of burning on any of the stones, although the fill was charcoal rich.

## ARTEFACTS AND ENVIRONMENTAL EVIDENCE

### **The Iron Age pottery**

By Nicholas J. Cooper

A total of 81 sherds (343g) of Early Iron Age pottery, was recovered from six contexts relating to the pit alignment, the majority coming from a sub-rectangular pit [305] in the miscellaneous group adjacent to the double alignment. Small numbers of sherds were also recovered from several features in the pit alignments. A final handmade sherd is unrelated and was found residually within a small group of Roman pottery from the south-western area, and though not scored, is probably of later Iron Age date.

Half of the assemblage is manufactured using fossil shell as an opening material (Fabric S1), with all the sherds belonging to a single, heavily leached, vessel from [305]. The vessel is a necked jar with a flaring, slightly beaded rim with a diameter of 200mm (0.2 EVEs). The internal surface of the rim is squared off and has faint oblique slashes around the top. It has similarities to an Early Iron Age vessel from Willington (Elsdon 1979, 170, figs.69.13).

The other half of the assemblage is manufactured in fabrics employing a variety of rock types as opening materials, the predominant one being large angular fragments of crushed white pebble-quartz (Fabric Q5). Two vessels in this fabric came from pit [305]; the first a small undecorated jar with an upright rim with a diameter of 110mm, and the second a thin-bodied vessel with a girth of about 200mm. Again the small jar form is paralleled at Willington (Elsdon 1979, 171, fig.68.7) and the fabric (equivalent to Fabric A) is the most common at Willington (Elsdon 1979, 162, Fig.67). Small undiagnostic sherds in Q5 also occur in [215], (216), and [321] (331), the remainder in granitic Fabric R1, which is more common in adjacent Leicestershire, and Q1, a quartz sandy fabric.

### **The Roman pottery**

By Elizabeth Johnson

An assemblage comprising 839 sherds of Roman pottery weighing 15.813kg was retrieved from the excavations. The average sherd weight of 18.8g suggests good levels of preservation, although some surfaces are abraded.

The assemblage contains pottery dating from the mid/late 1st century through to the mid/late 3rd century or possibly a little later. However overall, the assemblage suggests most activity from the 2nd century through to the mid/late 3rd century. The earliest fabric is the shelly ware, and the earliest datable vessel is a ledge rim jar dating from the mid 1st to early 2nd century.

The remaining shelly wares, although early, could date to the first half of the 2nd century. The grog-tempered grey ware GTA10 is also an earlier fabric, however the sherds are all undiagnostic body sherds and can only be dated from the mid/late 1st to mid 2nd century. There is also a small amount of South Gaulish Samian dating to the later 1st century, however these fine wares are often curated and could have continued in use throughout the 2nd century. It is also worth noting most of these Samian sherds are abraded. The latest datable material comprises three reeded hammerhead-rimmed mortaria dating from the mid 3rd to mid 4th century and four grey ware bead and flange bowls also dating from the middle of the 3rd century into the 4th century.

The assemblage is broadly rural domestic in nature, with Derbyshire ware and grey ware jars and bowls the dominant feature. The fine wares are mostly 2nd century Samian, with a small quantity of Nene Valley colour-coated ware dating to the late 2nd-3rd century. The latest datable fine wares are a folded beaker and a pedestal beaker base both dating to the 3rd century. The only imported colour-coated ware, a Central Gaulish black-slipped ware beaker, was also recovered from the entrance feature of the smaller enclosure.

This enclosure entrance is interesting, as both the earliest and latest pottery was discovered in this area, along with the only imported colour-coated ware. The presence of early and late material most likely indicates disturbance of the ground as the enclosure ditches were recut.

Apart from this, there does not appear to be any noticeable temporal differences between features across the site as a whole, with the pottery generally falling within the 2nd and 3rd centuries. The features uncovered appear to represent agricultural activity consistent with a rural farmstead and the domestic nature of the pottery assemblage suggests the presence of an as yet un-located dwelling nearby.

### **Roman Small Finds**

By Nicholas J. Cooper with Roman coin identification by Richard Buckley

A total of 42 Roman finds was recovered during the excavation, primarily from the Roman period enclosure. The finds are predominantly of iron (25 nails), but there are also three coins including a silver Denarius, two copper alloy brooch fragments, a fragment of Roman vessel glass, and five scraps of lead.

The whole assemblage was rather poorly-preserved and undiagnostic, relating to activity primarily within the early Roman period (later 1st to early 3rd centuries), but probably typical for a site of this status in the area. Most finds related to constructional activity (iron nails and lead scrap), with residential activity represented only by fragments of brooches and, interestingly, the rim of a cast glass bottle, to place alongside the ceramic vessel assemblage. The presumably accidental loss of the silver denarius of Domitian must have been particularly galling for its owner, given the lack of material wealth visible in the vicinity.

### **The Flint**

By Lynden Cooper

A small collection of 30 worked flints was recovered from features during the excavation. The raw material was predominantly semi-translucent grey brown flint of glacial till origin. An exception was a blade fragment made from a grey opaque flint with some surface patination, which is likely to be of Mesolithic date. The remaining flake débitage is likely to be of Neolithic-Bronze Age date.

### **Industrial Residues**

By Heidi Addison

A total of 187g of industrial material was recovered from three Roman contexts, comprising lumps of vitrified hearth lining, and a very small fragment (6g) of fayalite slag, suggestive of iron working in the vicinity.

### **Roman Building Materials**

By Nicholas J. Cooper

Small assemblages of Roman ceramic tile, fired clay and building stone were recovered from the enclosure area. This included a very worn and broken assemblage of Roman tile (35 fragments 4.122kg, 83% of the assemblage by weight) re-used in metalled surfaces. The tile occurs in a typical orange sandy 'brick' fabric and no detailed analysis has been undertaken on this small group. However, it is worth noting that the group does include examples of tile in a very highly fired (almost vitrified) fabric, with similarities in colour and hardness (though not to fabric) to Derbyshire ware pottery. The forms are limited to tegulae (flanged roof tiles) and flat wall tiles, deriving from stone-founded buildings within the vicinity of the site, and it may be that these bulky flat tiles were selected out of rubble for re-use in preference to the more fragile and less suitable curved imbrex roof tiles, which are not represented in the group.

Small groups of 26 fired clay fragments (284g) were also recovered from seven contexts across the Roman site. Wattle impressions were noted on fragments from three contexts. The material probably represents debris from wattle and daub structures destroyed by fire in the vicinity.

Two samples of a fine sandstone building stone were recovered from the spread over the 'oven' structure, comprising a thin, broken sheet fragment in a grey sandstone which appears to have a soot coating, and a light grey fragment which is scorched red. A large flat rectangular block of the same material, with scorched red surfaces, came from the north- western part of the ditch circuit.

### **The Animal Bones**

By Jennifer Browning

An assemblage of 409 animal bones was recovered including examples identifiable to cattle, sheep/goat, pig, horse and red deer. Most excavated deposits contained only a small number of bones and no remains from small mammals, amphibians or fish were recovered from the site, which may be partly a consequence of poor preservation. The bones constitute a variety

of elements from animals associated with domestic occupation; both adult and young animals were present and butchery marks, gnawing and burnt bones were recorded. One of the larger groups, comprised mostly undiagnostic shaft fragments, however, a number of horse lower leg and foot bones were also recovered, which could have been deposited in an articulated state. The assemblage appears to represent general settlement waste, presumably from a nearby farmstead, rather than particular types of activities.

### **The charred plant remains**

By Rachel Small

Eleven samples were taken for the recovery of environmental remains; ten from Roman features and one from the pit alignment. All of the samples analysed contained plant remains. The sample from the pit alignment contained only a fragment of hazelnut shell, but the samples from Roman features provided a wider variety of remains in varying quantities. Seven contained low densities (less than five items per litre), and three Roman samples contained moderate to high densities (42.6 to 70.67 items per litre), from ditch fills located in the east of the site. Preservation of the remains was generally good, however, many glume bases were very fragmentary and damaged and some grains were distorted from burning at high temperatures. Modern rootlets and seeds were present, but in very low quantities suggesting the effects of modern disturbance to the contexts was minimal.

The results suggest that in the Iron Age hazel nuts were collected from the surrounding 'wild' environment (woodland, scrub and hedgerows) and eaten as a food source. Waste shells were burnt on a fire, and the ash would have been formally deposited in features or would have accumulated, transported by the wind. It is thought that pit alignments acted as agricultural boundary markers so it is possible that deposition in these features had symbolic meaning. There were no hazelnut shells present in the Roman samples, and there is limited evidence for the collection of wild resources in this period, perhaps suggesting less reliance on foraging and greater emphasis on cultivation.

The 'low density' samples dating to the Roman period are characteristic of secondary deposits, likely representing waste from processing the grain for consumption and/or food spillage that was burnt on a hearth accidentally or deliberately (it is thought chaff was deliberately used as tinder). Like the hazelnut shell, the ash from the hearth may have been formally deposited in features or could have accumulated naturally.

Two more profitable samples contained large quantities of remains and were very similar in composition. Both were dominated by glume bases, some of spelt wheat, which is indicative of a primary deposit of fine-sieving residue. Fine-sieving is a stage in preparing the grain for consumption and involves separating the grain (product) from glume bases and small seeds (by-product/residue) (van der Veen 2007, 987).

The most abundant sample was a 'mixed deposit' containing large numbers of wheat and barley specimens. The presence of spelt wheat grains which still had glume bases attached suggests that they may represent spikelets that were heated in a corn drier to make the chaff brittle (this would have made the subsequent stages of processing easier, such as pounding and fine sieving), however, the spikelets were heated too much and became burnt. The assemblage probably represents accumulation from multiple events, at least one for glume wheats and another for free-threshing grains (i.e. barley) as the subsequent processing for each is different. The context from which the sample was taken was near to the oven, which

would support this hypothesis further, however, it was concluded during excavation that it was never fired.

The crops were probably grown in the vicinity as agricultural field systems have been located during excavation (e.g. the north-south ditch boundary). The wild seeds present can indicate the field conditions that the crops were grown in. The majority of the wild seeds identified were typical agricultural weeds, for example: stinking mayweed (*Anthemis cotula* L.), goosefoots (*Chenopodium* spp.), dock (*Rumex* spp.), black bindweed (*Polygonum convolvulus* L.) and wild radish (*Raphanus raphanistrum* L.). Stinking mayweed is suggestive of the cultivation of heavy clay soils and goosefoots, along with black bindweed and wild radish are generally weeds of spring grown crops (Monckton, 2004. 164). Sedge (*Carex* spp.) and lady's thumb/pale persicaria (*Polygonum persicaria/lapathifolium* L.) were present, and are generally associated with damp areas (Stace 1991), perhaps suggesting that the fields cultivated had patches of waterlogging or were not very well drained. Some grassland species were also present, including cat's-tail (*Phleum* spp.), clover (cf. *Trifolium* spp.) and selfheal (*Prunella vulgaris* L.). These may represent areas of grassland in the vicinity or cultivation of a field after a period of fallow or cultivation of a fodder crop.

The assemblage of plant remains from Chellaston Fields, Swarkestone is richer and more diverse than assemblages from similar sites in the area. For example, during excavation at land north of Park Lane, Castle Donington samples were taken from a range of Iron Age and Roman features. The assemblage was analysed by Radini (2014) and it was concluded that it was poor with few plant remains (less than 5 items per litre for each sample) and those present were damaged. It was possible to identify cereal grains, including glume wheat and barley. Occasional glume bases were also present but these were too small to distinguish features useful for identification of species. It was, however, concluded from this evidence that crop processing was taking place at the site. Weed seeds were found in low numbers and were mainly plants of arable or disturbed ground, such as large grasses, a few seeds of cabbage/brassica-type (Brassicaceae) were also present which can grow in grasslands.

## DISCUSSION

The archaeological remains within the study area were focused on two specific areas, which, following the results of the 2012 evaluation, were stripped to their greatest extent, as far as site restrictions such as field boundaries, power lines and the extent of the proposed development area would allow. Further evaluation trenches were also excavated to gain a better understanding of the extent of some of the outlying features.

### **Later prehistoric pit alignments – the introduction of boundaries**

During the Early Iron Age part of the area was divided by a series of pit alignment boundaries. These features were not identified during the geophysical survey but were discovered during excavation of the evaluation trenches.

The double pit alignment consisted of two lines of pits, broadly similar in size and form and there is no reason to doubt that both lines are contemporary, with an associated pottery assemblage providing an Early Iron Age date. The single pit alignment was also similar in size and form, and contained pottery of similar date, although the relationship between the alignments is unknown due to the junction between the two boundaries lying outside the excavation area.

The individual pits do not seem to contain recuts although a few contained multiple fills. These particular pits were all at the eastern end of the alignment and this apparent grouping may be more due to natural processes related to their position rather than something deliberate.

There was a clear gap in the double pit alignment towards its western end. Presumably this gap was intentional as two pits there are slightly out of place at this point, causing a block in the gap between the two lines, which possibly represents an entrance into the area to the north of the pits. Given that the north-west group appears to form a broadly perpendicular angle with the east to west line of pits it could be seen that the area to the north of the pits is the 'inside' of the delineated area with the 'outside' to the south. Although this is merely conjecture as we do not have the line of the pits to the east and south.

The relationship of the pit alignments to the later Roman occupation is unclear, although both appear to adopt similar alignments in their overall organisation. This may in part have been dictated by the localised lie of the land. There is a drop in the slope along the edge of Chellaston Hill here, along the 60m contour, which appears to coincide with the positioning of both the Iron Age and Roman boundaries.

Pit alignments are a widespread phenomenon throughout the Trent Valley as revealed by cropmarks and excavations identified and undertaken in recent decades. They are often associated with the development of field systems and trackway networks (Whimster 1989; Knight and Howard 2004) and are becoming an increasingly recognised feature across the Midlands as a whole. They are acknowledged as representing long-distance boundary systems introduced in the Later Bronze Age – Early Iron Age and are often characterised by uniformity in the shape, size and spacing of the pits (Thomas 2008; Finn 2011). Similar pit alignments are known from many sites in the vicinity of Chellaston Fields, including the aforementioned Park Lane site at Castle Donington. Recent work at Boulton Moor, in advance of new housing, around 2 miles north-east of Chellaston Hill revealed a single pit alignment and several groups of double pit alignments have been excavated, or identified as cropmarks at Warren Farm, Lockington (Coward 2011; Thomas 2013).

### **Roman occupation and the introduction of new boundaries**

After the pit alignments had gone out of use later occupation in the Roman period created further division of the local landscape, with the introduction of a series of ditched enclosures. The enclosures were associated with a metalled trackway and number of other smaller ditches and gullies running from north to south down the slope, probably draining away from the main boundary ditches and enclosure on the top of the hill. Relatively few of the smaller Roman enclosed settlements have received extensive excavation in the area, but they are suggested to be the focus of habitation for a single extended family group (Knight and Howard 2004, 137).

Archaeological remains of a similar character have also been identified during excavation at Park Lane, Castle Donington which lies 8 miles to the east of Chellaston Hill (Score and Kipling 2015) and Warren Farm, Lockington (Thomas 2013) approximately 10 miles to the east. Other excavated examples of contemporary enclosed settlements include those at Gamston (Knight 1992), Bottom Osiers at Gonalston (Elliot and Knight 1997) and Captain's Pingle, Barrow-upon-Trent (Knight and Southgate 2001). Some of these sites developed from Iron Age origins, but there is no clear suggestion of that in this case. The role of these enclosures has been suggested to have related to particular specialised activities, such as stock management, grain storage or garden plots (Knight, Howard and Leary 2004, 138), although given the longevity of sites like Chellaston, the function of enclosures may have changed over



time depending on the needs of the community.

Given the lie of the land and the lack of archaeological remains to the east and south of the main enclosure it can be assumed that the focus of activity should lie to the north or north-west of the site, in areas now covered by housing at the southern edge of Chellaston. That said, traces of occupational activity were recovered during the excavation, and artefactual and environmental information provide a picture of the lifestyle of the inhabitants. At Captain's Pingle, Barrow-upon-Trent, nearby occupation was inferred from the quantity of domestic refuse recovered from enclosure ditches (Knight and Southgate 2001) and Chellaston presents a similar situation. The large amount of domestic pottery retrieved suggests that a large farmhouse or perhaps a villa was located in the vicinity of the excavation, with the enclosures and associated features representing agricultural activity adjacent to the main dwelling area.

The Chellaston settlement, as with all the contemporary sites discussed above, was probably firmly integrated into the wider agricultural economy which included farmsteads, villas and small towns (Knight, Howard and Leary 2004, 139). In the immediate locality Chellaston and its near neighbours may have been closely related to the Roman town at Redhill, close to the confluence of the Trent and Soar, further to the east (Palfreyman and Ebbins 2003).

Although seemingly peripheral, the excavations at Chellaston have provided interesting new information relating to developments in landscape use during the later prehistoric and Roman periods in the area. The results tie-in favourably with those from similar excavations and also contribute to wider archaeological research themes for the East Midlands region. This site, as with a number of its contemporaries, highlights the distinct changes that took place during the later prehistoric and Roman periods, which witnessed a change from an open to a fully enclosed landscape.

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